IN SEARCH OF THE ENVIRONMENT-DEVELOPMENT NEXUS IN TOFALA HILL WILDLIFE SANCTUARY, CAMEROON

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CBNRM	Community-based Natural Resource Management
ERuDeF	Environment and Rural Development Foundation
Fon	Paramount Chief
FPFC	Forest Protection Fund Committee
FMC	Forest Management Committee
FWI	Forestry and Wildlife Institution
THWS	Tofala Hill Wildlife Sanctuary
TMFC	Tofala- Mone Forest Corridor
MINATD	Ministry of Territorial Administration and Decentralisation
MINFOF	Ministry of Forestry and Wildlife
NGO	Non-profit Organisation
NRM	Natural Resource Management
NTFP	Non-timber Forest Products
SLA	Sustainable Livelihoods Approach
SFM	Sustinable Forest Management
WCI	Wildlife Conservation Institution
WWF	World Wildlife Fund

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ABSTRACT

The aim of this research is to explore the environment-development nexus with particular interest in wildlife and forest management in Cameroon using a case study approach. The central research question for this study is "what are the prospects for inclusive participation of local community members in forest management in the Tofala Hill Wildlife Sanctuary (THWS)?" Different theoretical framworks are deployed in this study to make explicit the strategy and policy challenges in forest management in the Tofala Hill Wildlife Sanctuary. These conceptual frameworks included the concept of community-based natural resource management (CBNRM), the sustainable livelihood approach, the theory of access, the theory of institutional bricolage and the theory of assemblage. The different methods used in data gathering included questionnaires, in-depth interviews, field observation, reconnaissance surveys, systematic and secondary data review. The results of this study argue that for conservation-development linkages to translate into sustainable forest management in the THWS, negotiations must be guided by the social justice (human rights and equity). Participatory management to incentivise sustainable forest management requires equity in power-relations amongst actors given that actors are the mediators in institutions and policy. Sustainable forest management could be achieved if institutions and policies cooperate to ensure that rules, behaviour, actors, strategies, plans, programmes and the system of administration uphold social justice within all processes. This means enabling a system of distribution that ensures fair negotiations in terms of revenue and non-revenue sharing arrangements and compensation schemes. Based on the conceptual framings, this study argues that a more reasonable approach to sustainable natural resource management (NRM) should adopt a holistic analytical view of forest management while duly considering their merits and demerits. Contextually, this study argues that a blend of knowledge on forest resources use, institutional interactions in forest management, access mechanisms to forest resources and the analysis of who governs forest resources could benefit sustainable forest management.

CHAPTER 1

STUDY BACKGROUND AND CONTRIBUTIONS

ABSTRACT

This chapter begins by arguing that the relationship between development and the environment is complex and highly influenced by the socio-economic factors of the locality. Negotiating environmental conservation and development actions requires consideration of the diversity of actor preferences over the use of forest resources. It then proceeds to outline the main aim of this study, which is to analyse how conservation and development linkages are translated to forest management outcomes in the Tofala Hill Wildlife Sanctuary, Cameroon. This chapter also presents the structure of the whole dissertation and discusses the key theories and concepts and their application in the analysis of environment-development linkages. The key concepts and theories discussed include community-based natural resource management, sustainable livelihood approach, institutional bricolage, the theory of access and the theory of assemblage. Furthermore, this chapter also discusses the research framework, the conceptual framework and the contributions made by the dissertation.

Key words: Forest management, local development, stakeholders, access to resources, local institutions, environment-development policies

1. INTRODUCTION

Poverty and environmental deterioration are argued to be among the gravest challenges faced in the developing world today (Chowdhury and Ahmed 2010; Redford et al. 2013). The relationship between poverty and the environment is complex and highly influenced by the socio-economic factors of the locality (Janssen et al. 2007; Liu et al. 2007; Leach et al. 2010). Negotiating environmental conservation and development actions requires consideration of the diversity that exists in actor preferences over the use of forest resources (Büscher and Dressler 2007). Environmental conservation projects should therefore consider actors' needs and preferences in the development and design of interventions, especially when addressing the livelihood aspects of the local people relying on forest resources (Soltani et al. 2012; Ojha et al. 2016). The prospects for local people sustaining forest resource management for livelihood security and conservation needs are centred on how well programmes are embedded in sociocultural relations, politics; resource needs and uses (Dressler et al. 2010; Wodschow et al. 2016). Establishing sustainable linkages between environmental conservation and development action requires the consideration of how policies influence and are influenced by actors (McShane et al. 2011). Local people play relevant roles in shaping forest practices, most especially across the tropics where local people rely heavily on forest resources for their livelihoods (Newton et al. 2012; Romijn et al. 2015). It is argued that the engagement of local people in forest management strategies could contribute to sustainable forest management (SFM) (Ojha et al. 2016). The concept of Community-based natural resource management (CBNRM) has played a key role in promoting SFM (Dressler et al. 2010). It has been widely advocated and used with the aim of fostering sustainable linkages between biodiversity conservation and local development (Chen et al. 2012). CBNRM has as its vision to improve the benefits afforded to local people by natural resource management (NRM) by empowering them to manage natural resources for their own wellbeing (Sanginga et al. 2010).

CBNRM is based on the philosophy that because local people depend upon and have detailed knowledge of their resource base, empowering them to manage and invest in resources will support livelihoods and conservation in a sustainable way (Büscher and Dressler 2007). CBNRM was introduced after the "fortress conservation era"[1] to return the stewardship of biodiversity and natural resources to local communities through participation, empowerment and decentralization (Büscher and Dietz 2005; Büscher and Wolmer 2007). Since the early 1990s CBNRM has become a key component of sustainable development, which has been broadly embraced by national leaders and policy-makers in Africa, as well as aid bureaucrats and technical specialists in donor countries to frame their policy targets (Virtanen 2005). The key

[1] The fortress conservation era was of the view that local communities are not important elements in managing natural resources. Thus, they should not be part of the management process.

claim of CBNRM is that if environmental conservation is not promoted in conjunction with economic development and community participation, local populations will have no interest in protecting natural resources. In line with neo-classical economics, the standard CBNRM message emphasizes economic incentives as the key to successful community participation (Büscher and Dressler 2007). This neo-classical economic thinking is useful in this study because it gives place to multiple sources of authority and the resulting power differentials in natural resource management, which consequently invites a critical standpoint to all kinds of participatory processes. CBNRM is increasingly becoming an important concept to provide sustainable solutions for both local people and nature (Lepper and Goebel 2010; McCarthy et al. 2012). It is argued that CBNRM adheres to the following basic principles (Büscher and Dietz 2005):

- Allowing people living near protected areas to participate in land-use policy and management decisions
- Giving people proprietorship or ownership over natural resources
- Giving local people economic benefit from nature conservation

Informed by the theoretical arguments of CBNRM and in line with its basic principles, this study looks at how conservation and development linkages could translate into better management and policy actions in the Tofala Hill Wildlife Sanctuary (THWS), Cameroon. The analysis of conservation and development linkages as outlined in this study takes into consideration actors' resource needs and uses, their role in defining access to forest resources, the institutional response to pressures for change in forest governance and the potential of actors in influencing forest practices and governance. Based on the latter analytical position, the central research question for this study is "what are the prospects for inclusive participation of local community members in forest management in the THWS?" In order to develop an adequate conceptual framework that will guide the answering of this question, it is necessary to elaborate on the terms 'conservation interventions' and 'development interventions' as used in this study.

Conservation interventions

From the perspective of CBNRM and for the purpose of this study, I define conservation interventions as policy actions taken to ensure the conservation of ecosystems. Ecosystems provide livelihoods to millions of people and contribute to national economic development in many countries (Mislimshoevaet al., 2016; Whiteman et al., 2015). About one quarter of forest area worldwide is designated to multiple use in forestry (Köhl et al. 2015). Between 1990 and 2015, forest usage globally has led to a total forest area decline of 3% (Keenan et al. 2015). One of the major threats to ecosystems worldwide is the increasing quest for resources by the growing human population (Butchart et al. 2010; Persha et al. 2011). Anthropogenic pressures on the earth are argued to have led to land use change and have reached a scale where abrupt

global environmental change can no longer be ruled out (Rockström et al. 2009). Land use change has led to multiple conflicts over natural resource usage and sustainable solutions to these conflicts are constantly under debate in a bid to arrive at a point where the interests of all involved can be protected (Simon et al. 2012; Leblond 2014; Duffy et al. 2016).

In order to regulate and manage over-exploitation of natural resources, conservation of biodiversity has been a central environmental intervention (Butchart et al. 2010; Rands et al. 2010; Duffy 2014). Conserving biodiversity is argued to be crucial for the long-term health and sustainable productivity of the world's forests (Trumbore et al. 2015). The need to conserve biodiversity has brought forth diverse schools of thought and approaches including the downward spiral approach, the sustainable livelihood approach, the resilience approach, the environmental entitlement approach and the sustainable development approach among others (Sanginga et al. 2010). Despite contributions made by the debates in the above schools of thought in NRM, it is argued that there is still more to be done in order to reach a point where environmental and social justice are taken into consideration (Leach et al. 2010; Forsyth 2014; Boonstra 2016). However, how to achieve environmental and social justice in the context of forest management is a matter of intense debate (Berkes 2004; Dressler et al. 2010). No unique approach to participatory forest management has been suggested to be the best (Rodela et al. 2012; Buchy and Maconachie 2014). This is more or less attributed to the dynamic and complex nature of environment and development challenges (Leach et al. 2010). It is therefore relevant for management decisions on the conservation of ecosystems to learn from the evolving debates in sustainable forest management, which have recently been centred on how local community members could be effectively engaged in the management process (Büscher and Dietz 2005; Dressler et al. 2010; Brandt et al. 2016). This could help guide the prediction of SFM options both globally and locally.

Conservation-development interventions

International policy has sought to emphasize and strengthen the link between the conservation of ecosystems and human development (Bottrill et al. 2014). However, despite the potential of development interventions to support economic growth and improve quality of life, they could equally have negative impacts capable of affecting the quality of the environment and life (World Bank 2007; Chowdhury and Ahmed 2010). *"Development is best viewed as a multi-faceted goal that can only be achieved holistically by increasing material, physical and psychological well-being*" (Pendergast et al. 2011). There is a need for development interventions in the conservation of NRM to capture the multi-dimensional aspects of development in a way that limits conflict of interest and promotes sustainable management (McShane et al. 2011). Debates on reconciling conflicts between development and the conservation of NRM have been centred on poor people (De Herdt and Abega 2007; Yadav et al. 2015; Duffy et al. 2016). It is argued that poor people should be duly considered in

forest management decisions because they depend fundamentally on forest resources for their livelihoods (Barrett et al. 2011). Typically, the majority of local people living adjacent to protected areas in the tropics rely heavily on forest resources for their livelihoods with limited or no access to alternative income sources (Whiteman et al. 2015). Due to insufficient financial and technical capacity, most local people are unable to develop forest resources in a manner that could sustain their livelihoods (Adam and Eltayeb 2016). The development of forest resources has been left in the hands of the state and international institutions, which often marginalise the local people's forest needs (Büscher 2016). The concept of CBNRM evolved on the premises of encouraging the engagement of poor people in NRM and to promote equitable solutions for poverty reduction and conservation (Dressler et al. 2010).

Poor people as used in this study are referred to as essentially those human beings who, for one reason or another, almost systematically end up at the losing end of the multiple bargains that are struck around available resources and opportunities (Bastiaensen et al. 2005). In an effort to capture poor people in development interventions, international development discourse has shifted its focus from top-down economic adjustment to participative anti-poverty policy (De Herdt and Bastiaensen 2004). In line with the concept of CBNRM, this shift hints at an acknowledgement of the local complexities within the poverty process and at a need to listen to poor people and develop actions together with them.

There is increasing recognition that rural households in developing countries depend significantly on common-pool natural resources for their livelihoods (Abreu 2011; Angelsen et al. 2014; Wright et al. 2016). This has led to the perception that common-pool resource stocks in effect serve as a public asset for poor households, substituting the private assets (land, livestock, farm capital, human capital, financial wealth) that they lack (Ostrom 2003; Chowdhury and Ahmed 2010; Saunders 2014). It has been argued that improving the livelihoods of local community members is one of the key aspects to consider in poverty alleviation and biodiversity conservation (Lepper and Goebel 2010). It is also said that the majority of people relying on forests for their livelihoods are 'poor' and have limited capacity to improve their livelihoods. Hence, empowering them in terms of sustainable livelihood options might alleviate their poverty and reduce forest encroachment (Barbier 2010). Biodiversity loss and poverty are argued to be linked (Diaw et al. 2009) and it is believed that addressing poverty could lead to environmental sustainability (Redford et al. 2013). It is also acknowledged that the relationships between poverty and the environment are complex and could be influenced by the social and economic factors of a country or region in diverse ways (Chowdhury and Ahmed 2010). The dynamic and complex links between poverty and NRM have also raised policy questions as to whether improved NRM could form the basis of poverty alleviation policies (Leach et al. 2010; Adam and Eltayeb 2016).

This study was motivated by the recent debates in environment-development linkages and informed by the central research question – 'what are the prospects for inclusive

participation of local community members in forest management in the THWS?' It aligns with the argument that maintaining and enhancing the sustainability and resilience of forest resources is a fundamental consideration in SFM. Therefore, establishing sustainable forest management requires creative, integrated and holistic approaches in which multiple actors play key roles in knowledge and skills collaboration in order to facilitate SFM initiatives (Hole et al. 2009; Paletto et al. 2016).

1.2 MAIN OBJECTIVE

The main aim of this study is to analyse how conservation and development interventions are translated into change in forest management practices in the Tofala Hill Wildlife Sanctuary (THWS), Cameroon.

1.3 SPECIFIC OBJECTIVE

The following specific objectives are addressed in the study;

i. To assess local communities' forest usage and its impact on sustainable forest management in the THWS
ii. To analyse how access to forest resources influences sustainable forest management in the THWS
iii. To assess the impact of local institutions on sustainable forest management in the THWS
iv. To analyse the prospects for sustainable forest management based on actors' actions and interest in forest resources.

1.4 STRUCTURE OF DISSERTATION

The dissertation is organised into four empirical chapters, preceded by an introduction of the central issue and research strategy, and followed by a concluding chapter that summarizes the argument. The study design ensures that the empirical chapters align with the objectives of the study and contribute to answering the main research question.

Chapter one is divided into three sections: the first section provides the background of the study and specifies the study objectives. The second section discusses the position of the researcher in the research process, the concept of sustainable forest management, and the key theories and concepts used in the study. The third section discusses the study design and contribution of the study.

Chapter two presents an analysis of livelihood activities and their impact on wildlife conservation in the study area. The concept of sustainable livelihood approach (SLA) is applied

in this chapter to capture how conservation and livelihood objectives competed for a stake in forest resources and how this eventually affected the prospect of CBNRM. The concept of SLA is relevant to explore the linkages between conservation and livelihoods because it focuses on poor people, recognising their participation in management decisions, policies, and contributes to projects and research as important for NRM. This theoretical point of view is important in contributing to the debate of CBRNM in the study area. The empirical data in this chapter combines ground truth data (collected through a reconnaissance survey) and interview data to explore human usage of the forest and its effects on SFM.

Chapter three draws insights from the conceptual framework highlighting the central role of actors and institutions in mediating access to forest resources and environmental-society relationships in order to analyse actors' abilities to benefit from forest resources (Leach et al. 1999; Ribot and Peluso 2003). It applies the mechanisms of access including rights, social structure and relations, power and authority, and identity in mapping actors' ability to access forest resources. This chapter also highlights the role of actors and institutions in mediating access to forest resources. The empirical data collection for this chapter made use of questionnaires, in-depth interviews and field observations.

Chapter four applies the concept of institutional bricolage (Cleaver 2001; Cleaver 2002) to explore the role of indigenous structures in forest management in the THWS. Using in-depth interviews, it evaluates how the role of customary structures is affected as a result of shifts in forest governance. Furthermore, it explores how the change in forest management leadership contributed to the desired outcomes of sustainable forest management.

Chapter five presents an analysis of the role of actors in shaping forest practices and governance in the THWS. Key arguments in this chapter make reference to the analytical concept of assemblage as proposed by Li (2007) to explore forest practices and their effects on sustainable forest management. This chapter uses systematic reviews, secondary data and in-depth interviews to critically examine the roles actors played in forest management and how these roles influenced a shift in forest practices/governance in the THWS. The data collection approach in this chapter applies the Critical System Thinking (CST) approach for stakeholder analysis as proposed by Achterkamp and Vos (2007) to identify and classify stakeholders' involvement in forest management. In addition, institutional policy analysis and discourse policy analysis were used to capture actors' dynamics and diversity in forest resource management.

The last chapter, which forms the conclusion of the study, reflects on what has been learned in relation to the application of the conceptual framework adopted for the study in analysing environment-development linkages in the THWS. Furthermore, the chapter summarises the research questions, arguments and data, identifies the broad opportunities for and threats to sustainable forest management, and points the way towards further research in this field.

The section that follows (2.) presents the position of the researcher in the entire research process. It explains how the research process was influenced by the researcher's philosophical, personal, theoretical beliefs and perspective.

2. CONCEPTUALISING SUSTAINABLE FOREST MANAGEMENT

Sustainable forest management aligns with sustainable development views, which hold that resource management should strive to meet the needs of present and future generations (WCED 1987; Pezzey 1992). This view requires that humans only use natural resources at a rate at which they can be replenished naturally. The core of sustainable forest management thinking therefore takes into consideration the integration of the economic, environmental and social dimensions (Ochola et al. 2010). In line with the concept of sustainable development, sustainable forest management is argued to be integrative and action-oriented. It goes beyond technical fixes and incorporates aspects of the social construction of sustainable development by recognising the engagement of local communities in development processes (Chen et al. 2012; Stone and Nyaupane 2014). In forest management, the concept of sustainability is captured in the concept of CBNRM and offers a good analytical framework for sustainable forest management.

In addition to the concept of CBNRM, a number of other concepts are also applied in this study to explore the concept of sustainable forest management based on the case study. This includes the concept of sustainable livelihood approach, which argues that the ability of the local people to secure a living facilitates their participation in sustainable management objectives (Chambers & Conway, 1991). Secondly, the theory of access as proposed by Ribot and Peluso (2003) is also used in this study to analyse opportunities for sustainable forest management in the project area. Access is defined here as the ability to benefit from things (Ribot and Peluso 2003). Using various access mechanisms, the theory of access is applied to analyse how the ability of local people to benefit from forest resources influenced sustainability. Thirdly, the literature on institutional bricolage holds that frameworks for practices and decision making are constructed by borrowing disparate institutional elements (Cleaver 2002). Fourthly, key arguments are also borrowed from the analytical theory of assemblage as proposed by Li (2007). This concept is used to explore how forest practices are affected within the process of shifts in forest governance. Li (2007) argued that policy interventions are assembled from diverse elements including discourses, institutions, and expertise, amongst others.

2. 1. COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT

CBNRM has the vision of improving the livelihoods of local people by empowering them to manage natural resources for their own wellbeing (Sanginga et al. 2010). The concept of CBNRM derives from the literature on local economic development, which offers local actors the opportunity to work together to improve the local economy (Lubell et al. 2009). The concept invites an analysis of how different factors, actors and their characteristics influence

sustainable and inclusive forest management (Chen et al., 2012; Dressler et al., 2010). The proponents of CBNRM began to advocate for the shift from a centralized approach of NRM (often for the benefit of elites, like tourism and conservation goals) to a decentralized or participatory approach of NRM after the 1970s (Virtanen 2005; Dressler et al. 2010). The vision of CBNRM to improve the livelihoods of local people by empowering them to manage natural resources for their own wellbeing raised hopes that this change in paradigm would bring a participatory approach to NRM (Dressler et al. 2010). However, despite the opportunities CBNRM offers for natural resource management, it is argued that the message has also been broadly absorbed by practitioners, and international and national bureaucratic and political elites to work to their advantage (Buchy and Maconachie 2014). For instance, the analysis of local community participation in community forest management in Cameroon revealed that in most cases, the voice of the community leaders (chiefs and elites) is often considered to be the voice of the entire community (Ndibi and Kay 1999; Yufanyi Movuh 2013; Nkemnyi 2016). Similarly, in the case of protected (state) forest management, only community leaders are given the opportunity to participate in forest management decision-making (Geschiere 2011). The de facto narrowing of local community participation to community leaders is a major setback in achieving inclusive participation as highlighted by the theory of CBNRM. Given the dynamic and complex nature of forest needs and usage, the interests of the community leader may not broadly reflect the interests of the different strategic groups in the local communities in terms of forest needs and usage (Ribot 2003; Koning and Cleaver 2012). Furthermore, this type of arrangement has been argued to limit downward accountability, leading to corruption and other malpractices in forest governance (Ribot et al. 2006; Oyono 2008). Despite the problems recorded in the implementation of CBNRM, it is strongly argued that without the involvement of local actors in the definition of boundaries within which resources can be accessed and by whom they can be accessed, NRM will be unsustainable (Agrawal and Ostrom 2006; Ojha et al. 2016).

2. 2. THE SUSTAINABLE LIVELIHOODS APPROACH

Developing sustainable collaborations in forest conservation and livelihood requires sustainable policies and incentives that align with the local agenda for sustainable NRM (Fankhauser et al. 2013). Irrespective of the process of NRM, it is argued that the prospects for local people of sustaining forest management for livelihood security and conservation needs is centred on how well programmes are embedded in sociocultural relations, politics, resource needs and uses (Dressler et al. 2010). Livelihoods are defined as the means of securing a living (Chambers and Conway 1991). It comprises the capabilities, assets (including both material and social resources) and activities required for a means of living (Scoones 1998). Thus, a livelihood may be considered as sustainable when it has the ability to cope with and recover from stresses

and shocks and still maintain its capabilities and assets, without compromising the natural resource base. The sustainable livelihood approach (SLA) was adopted by this study to answer the main research question in chapter II - what are the forest needs and usage of the local people and how do they align with the sustainable NRM/sustainable livelihood agenda? The argumentation in the SLA provided insight into how local people engage in their daily activities in search for sustainable livelihoods by combining and using different strategies. The application of the SLA to this study represents a significant step forward in development thinking. Firstly, it allows us not only to question the sustainability of the actions or activities but also to deliberate on possible intervention mechanisms. Secondly, it makes explicit the choices and possible trade-offs in planning and executing different forest-related activities. Thirdly, it also helps to link micro-level understandings of poverty to policy and processes of institutional change (Farrington et al. 1999).

2. 3. THE THEORY OF ACCESS

Forests provide important ecosystem services to people worldwide (Lele et al. 2013). Timber and non-timber forest products constitute an important aspect of livelihood for forest dwelling communities (Newton et al. 2012). In addition to livelihood benefits, forests also have intangible cultural and spiritual values, which vary from one culture to another (Onel and Mukherjee 2013). The diverse interests within forest needs and usages often raise issues of conflict in forest usage (Derkyi et al. 2014; Khumalo and Yung 2015). This may result in unsustainable management if the conflicts in question are not adequately managed. In addition, unsustainable management strategies are liable to result in unequally distributed forest resource access over time, which might lead to forest-dependent poverty and environmental degradation (Daur et al. 2016). It is therefore relevant to monitor how local efforts and conditions are forged through relations on multiple scales in order to achieve forest access (Saunders 2014). The theory of access as applied in this study enabled us to analyse how local efforts and conditions influence the achievement of CBNRM.

Ribot and Peluso (2003) defined access as the ability to derive benefits from things. With regard to natural resources, the theory of access helps to explore the range of powers through various mechanisms, processes, and social relations that affect people's ability to benefit from such resources. The theory of access is applied to this study to question who benefits, in which ways, and in which circumstances from forest resources in the THWS. The focus of the analysis in this study is on the ability to benefit, which may be influenced by the interaction of material, cultural, political and economic factors. This study focused on the political-economic factors in resource gaining, controlling and maintaining access. In order to differentiate between rights-based, structural and relational mechanisms of access, information was collected through field study to map the various mechanisms, processes and social

relations that affect local people's access to forest resources in the THWS. We also analysed how institutional interactions affected access to forest resources.

2. 4. INSTITUTIONAL BRICOLAGE

Two main schools of thought, namely mainstream institutionalism and critical institutionalism, have been widely applied in order to question institutional arrangements and the role played by institutions (Koning and Cleaver 2012). Mainstream institutionalism holds that "the role of institutions is to provide information and assurance about the behaviour of others, to offer incentives to behaviour in accordance with collective goods and to monitor opportunistic behaviour" (Aligica and Boettke 2011). Critical institutionalism scrutinises the uneven costs and benefits of public participation and the ways in which power works through local institutions (Koning and Cleaver 2012). Critical institutionalism also holds that institutions for NRM, even if they are designed for a specific purpose, cannot be understood as stand-alone arrangements. The way in which they function is deeply contextual as the patterns of behaviour and ways of thinking cultivated in such institutions are borrowed or adapted from other arrangements such as multipurpose village assemblies or groups (Cleaver 2001). This is the basic argument of the theory of institutional bricolage.

Institutional bricolage refers to the construction and borrowing of disparate institutional elements in order to create frameworks for practices and decision making (Cleaver 2002). Institutional bricolage has evolved from questioning the design of robust institutions to fighting resource degradation, as well as addressing assumptions about the direct relationship between policy and local practices (Koning and Cleaver 2012). The theory argues that institutions are the key mechanisms which channel societal resources into outcomes through the refurbishing and re-arranging of existing relationships and classifications (Cleaver 2001; Cleaver 2002). It also argues that institutional processes play out dynamically through different forms and in varying contexts (Koning and Cleaver 2012).

Institutional bricolage arguments also hold that changes in institutional settings can be understood by differentiating between processes of aggregation, alteration, and articulation (Koning 2011). Where the process of aggregation refers to the recombination of various institutional elements (complementarity of bureaucratic and socially embedded institutions); the process of alteration refers to the adaptation or reshaping of both bureaucratic (formal) and socially embedded (informal) institutions. The process of articulation, in turn, refers to the resistance to merge of socially embedded institutions because of their misalignment with bureaucratic institutions. In this study, we ask how these processes affect local institutions managing forest resources in the THWS.

In Cameroon, customary institutions have a long standing history as the main managers of forest resources and under the present forest policy (1994) as custodians of forest resources (Yufanyi Movuh 2012). This motivates the analysis of how the role of customary institution is affected by the process of forest governance transition in the THWS. Understanding the ways in which institutions interact to affect governance practices is crucial in defining how participatory processes affect the outcome of CBNRM. The focus on customary institutions provided an entry point into the evaluation of the different institutions responsible for forest resources management in the THWS. Moreover, given that customary institutions were previously responsible for forest resource management before the legal transfer of management power to formal institutions, understanding how the shift in authority affected the process of sustainable forest management is relevant to informing management policies.

2. 5. THE CONCEPT OF ASSEMBLAGE AND FOREST GOVERNANCE

The growing and competing demands on resources from the forest including food, biofuels, timber, and environmental services is increasingly threatening sustainable forest governance (Agrawal et al. 2008). Due to the need of the local people for forest resources, it is argued that their involvement in forest management is extremely relevant to achieving sustainable forest practices and governance (Berkes 2004; Anderson et al. 2015; Senganimalunje et al. 2015). Actors hold diverse interests, motivated by their scale of knowledge, which might stimulate conflict in forest resource management (Büscher and Dressler 2007; Ahlborg and Nightingale 2012). Actors participate and apply their knowledge in different ways, resulting in dynamic and complex outcomes in forest management (Leach et al. 2010). Actors are also constantly changing their behaviour and preferences for forest management with respect to the changes introduced in the socio ecological systems (Ostrom and Cox 2010). Given that space, time, cultural norms and beliefs affect stakeholders differently, it is important to question how actors' interventions affect sustainability in forest management (Leach et al. 2010). In addition, the dynamic and complex nature of environmental challenges requires the constant evaluation of management practices in order to adequately address policy needs (Böcher 2012).

The resulting change in policy triggers a governance shift, which in turn affects management outcomes (Arnouts et al. 2012). Exploring practices that evolve and how they evolve in the process of shifts in governance could be rewarding in achieving sustainable management targets in forest management. In this study, the analytical theory of assemblage as proposed by Li (2007) offers us the opportunity to explore how practices were affected during a shift in governance in the THWS. Various elements including forging alignment, rendering technical, authorizing knowledge, management failure and contradictions, anti-politics and reassembling are used in questioning the effect of forest practices in achieving the

desired environment-development linkages. These elements are further discussed and applied in chapter five of the thesis. For sustainable forest management, it is important to analyse why, what, when, where, who and how actors can be aligned to benefit from forest resources. The reasoning behind the theory of assemblage vis-a-vis the conceptual framing in forest practices, policies and governance were deployed to contextualise the role actors played in influencing forest practices in the THWS. Knowledge of the actors' influence on forest practices and how the efforts of various actors contribute to CBNRM is very important for sustainable forest management debates and also in informing policy that could promote sustainable NRM.

In the section that follows, the theoretical and conceptual views presented above are reflected in light of the study's scope.

3. RESEARCH FRAMEWORK

3.1. RESEARCHER POSITIONALITY STATEMENT

It has been a rich experience from start to finish of this research work. The research process has been facilitated by relationships I established in the field prior to and during the research execution. My identity as a native of the study area facilitated the research process in many ways. I had relations in the study area that helped in facilitating pre-field arrangements. This contributed to effective time management in field visits and data collection. I had previously met with most of the community leaders when I was working as a biologist in the study area between 2007 and 2009 and collecting field data for my master dissertation in 2010. The previous networks I had established in the project area were resourceful. It took me less time to reconnect and build trust with local stakeholders because of the previous engagement with them.

My study background in pure science (Bachelor of Science in Botany) and my previous work experience as a wildlife biologist provided a solid foundation for me to be able to comprehend and relate most theoretical arguments in wildlife conservation and community-based natural resource management to practice. My previous field experience facilitated the development of field instruments. It was easier to identify gaps and frame research questions to target issues that could reveal the gaps between literature study and practice due to my previous field experience in the study area. On the other hand, my background might also have influenced my level of criticality in theoretical arguments given that in alpha sciences the idea is rather to accumulate knowledge through a permanent process of affirmation/rejection of field findings in relation to previous studies, whereas in the social sciences, the reverse might well be closer to the truth, in line with a quote attributed to the American historian Will Durant, that "education is a progressive discovery of our own ignorance": What I do demonstrate in my work is at least that it is far from evident the goal of realising a "win-win" nexus between the two objectives of "environment" and "development", and that our desire to realise this nexus may well stand in the way of coming to a better understanding of the nexus in the current reality.

In addition, my previous field experience in the study area was relevant and resourceful in the framing of my research questions and planning field work. It was easy to locate and relate to the local non-profit organisation, the local government and the community people because of my understanding of local ethics and the previous relationship I had established during my work as a biologist and also during data collection for my master dissertation in study area. Notwithstanding, my previous field experience also put me in a position where I could presume certain field findings to my interest given that at the same time I was also working as leader of a wildlife conservation organisation. I managed this challenge within two dimensions. Firstly, during field data collection I worked with research assistants who were not familiar with the

study area but had full knowledge of the study subject. Given that they were not familiar with the study area, they could collect field data without presumption and bias from previous field findings. Research assistants recruited were graduates at the masters' level with adequate knowledge on forest resource management and local livelihood challenges. Secondly, the main objective of my research was a clear shift from pure science to social science. This enabled me to assess the wildlife conservation scenarios in the field from a different perspective. It was exciting for me to engage in new theoretical discussions. This developed in me zeal for the study and I anticipated with much curiosity the outcomes of the field data. This aspect kept me motivated and focused throughout the research process.

3.2. METHODOLOGICAL APPROACH

The research was supervised and coordinated by the principal investigator. Data collection was done with the assistance of four research assistants who were master's degree students from the University of Buea, Cameroon. These research assistants were selected based on their research interest in community-based natural resource management. Prior to the field data collection, a one week discussion and training session was organised to acquaint the field assistants with the content and purpose of the study. This gave them a good knowledge base for the study and allowed them to collect other information not stated in the questionnaires that could be important for the study. This session also educated the field assistants on approaches they could apply in the field to avoid respondent bias during questionnaire administration. Following this, a pilot survey was conducted to test the consistency of the questionnaires by administering 8 questionnaires one week before the study started. This helped to correct inconsistencies and to eliminate words that might have led to misunderstanding of the questions by respondents. These answered questionnaires were not used in the final analysis.

In order to understand the complexity of and the challenges to environment-development interventions in the study area, the nature of the ecosystem and ecosystem goods and services was defined to focus on the interactions between forest conservation and the livelihoods needs of the local people. This limitation helped in the reflection on and the negotiation of future policy scenarios for sustainable forest management in the THWS. In order to guide empirical data collection, specific research questions were developed to provide the information necessary for presenting the arguments in the various chapter of this dissertation:

- What are the forest needs and uses of the local people and how do they align with the sustainable forest and sustainable livelihood agenda?
- What ability do various actors possess in accessing forest resources and how is this ability influenced by various factors (mechanisms of access)?

- What are the roles of customary structures in forest management and how were these roles influenced by the process of transition in management institutions?
- How do stakeholders' practices toward forest management influence sustainable forest governance in the THWS? How can these practices be aligned to contribute to sustainable forest management?
- What are the dimensions of policies and strategies challenges in forest management? What policy and strategy options are available for community-based natural resource management?

A mix of research methods was adopted for this study. Research information gathering made use of primary and secondary data. Secondary data was gathered using literature review and systematic reviews. The literature review focused on gathering information that contributed to theoretical debates on the study subject. Systematic reviews focused on the logical review of policy documents and reports related to the case study. On the other hand, primary data were generated through focus group discussions, interviews, field observation and questionnaires. This choice of methods was motivated by the theoretical orientation of the study. Given the complex nature of conservation-development challenges, it is important to pay detailed attention to theoretical debates and field facts on sustainable forest resources management. Demographic and economic data are also very relevant in the empirical analysis of conservation and development challenges.

3.3. CAMEROON

The analyses in this study are framed to suit the context of environment-development interventions in Cameroon with a focus on protected forest management. With 22 million hectares of forest, Cameroon has the second largest forest estate among African countries after the Democratic Republic of Congo (Djeumo 2001; Jum et al. 2007; Yufanyi Movuh 2012). Throughout Cameroon forest loss is estimated to be about 220,000 hectares (approximately 1%) per year (Epule et al. 2011). Forest loss is argued to result from exploitation for timber, local development actions and conversion to agricultural land (Oyono 2008; Fraticelli 2012). The forest plays an important role at the national level in terms of its contributions to the Gross Domestic Product (GDP) of Cameroon (Alemagi 2011). It also has a variety of other complementary functions: for the people living adjacent, it plays a social and cultural role as well as an economic role, and for the international community, it is of ecological and scientific interest (Djeumo 2001; Etiendem et al. 2011). In Cameroon, local people living adjacent to forest areas depend highly on forest resources to satisfy both development and basic livelihood needs (van Vliet 2010; Nkemnyi et al. 2013). This implies that interventions on forest issues are bound to affect local development and livelihoods. Thus, it is essential to appropriately consider

livelihood and development challenges in the implementation of conservation interventions in Cameroon.

3.4. TOFALA HILL WILDLIFE SANCTUARY

More than 80% of local people in the THWS rely on forest resources for their livelihood (Nkemnyi et al. 2013). The proposition of the forest as a wildlife sanctuary in 2011 raised numerous concerns from local people regarding the prospects of their livelihood in the midst of wildlife conservation (Nkemnyi et al. 2011). During the initial phase of data collected for this study (January 2013), the THWS was on the verge of being gazetted as a protected (state) forest despite the objections and concerns raised by the local people (Nkemnyi et al. 2013). The fact that the THWS was on the verge of transition in management and that conflicting interests were being raised during the process made it a suitable case for the analysis of how environment-development linkages evolve in practice.

The THWS is located in the South West Region of Cameroon and geographically between 5^0 37′- 5^0 42′ latitudes and 9^0 53′ - 9^0 58′ longitudes (Figure 1.1). It covers a total surface area of 80–100 km² (Dunn et al. 2014). Ten main communities (Fossimondi, M'mock mbin, Bamumbu, Folepi, Bechati, Banti, Igumbo, Besali, Bangang, Nkong) inhabit land situated adjacent to the THWS with a total population of about 7,000 inhabitants (Etiendem et al., 2011). The area is made up of four ethnic groups; the Banyangs, the Mundani (dominant ethnic group), the Moghamo and the Nweh, all speaking different local languages and marked by cultural differences but similarities in land use and livelihood activities (Ajabji et al., 2008). Livelihood activities range from hunting/trapping, agriculture, and the harvesting of non-timber forest products, to selective logging (Wright and Priston 2010). The area is considered to be a hotspot for wildlife species due to its species richness (Nkemnyi et al. 2012). It is home to 24 identified large mammals species including two endangered great apes - *Gorilla gorilla diehli* (critically endangered) and *Pan troglodytes ellioti* (endangered) (Nkemnyi et al., 2011).

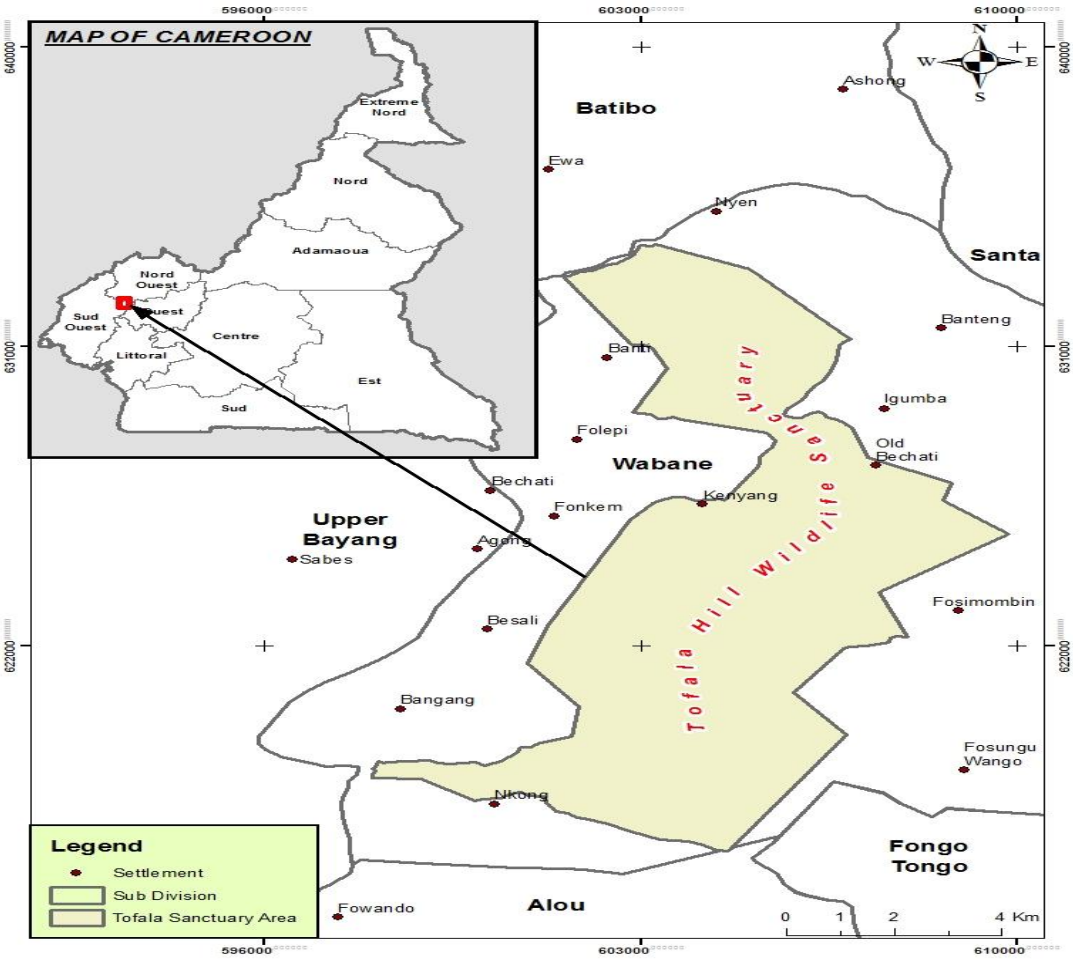

Figure 1.1: The Tofala Hill Wildlife Sanctuary
Source: ERuDeF 2014 and Pickatrail.com

3.5. EFFORTS TO IMPROVE FOREST MANAGEMENT IN CAMEROON

Efforts to improve forest management in Cameroon have been centred on decentralisation of forest management (Oyono et al. 2006; Yufanyi Movuh 2013). The process of decentralisation was introduced through the 1994 forestry and wildlife law (Djeukam, 2007). Forest policies in Cameroon have witnessed historical and contextual changes over time. Prior to colonisation (1884) by the Germans, forest management was mainly in the hands of local people (Brown and Lassoie 2010). After colonisation and until Cameroon gained its independence in 1960, the right to manage forests was withheld from the local people (clans) and community structures were reorganised to prevent frequent resettlement (nomadism), which was part of the customs of the local people (Yufanyi Movuh 2012). After Cameroon gained its independence, the colonial legacy in forest management was continued by the

Cameroonian state through the forest legislation of 1973 (Ordinance no. 73/18 and its instruments of application) and 1981 (Law no. 81/13), respectively (Brown and Lassoie 2010). Recognition of the need for a new forestry policy and the fact that the 1981 forestry law was outdated led to the 1994 forestry law (Djeumo 2001). The 1994 forestry law and the 1995 forestry decree laid out the guidelines for the creation and management of protected areas in Cameroon.

One of the main objectives of the 1994 Cameroonian forestry law was to improve the management of production forests and to enhance local people's participation and benefit from forest resources (Oyono et al., 2012). However, recent studies have argued that the quality of forest management has not been adequate (Ingram et al. 2015; Tieguhong et al. 2015; Tegegne et al. 2016). It is also argued that decentralisation of forest management in Cameroon has done less to safeguard the ecological values of the forest and encourage participation and local development, than intended (Maryudi et al. 2012; Samndong and Vatn 2012). Failures in decentralization are attributed to the legalisation of bureaucratic institutions that marginalized those who have recognized customary power and authority over forests (chiefs, elders and lineage) and privileging those whom decentralization reforms have empowered (Oyono et al., 2006; Schusser et al., 2015). In addition, it is also argued that the forest sector in Cameroon is still plagued by corruption, inadequate financing, limited technical expertise for producing value-added wood products, illegal logging, insufficient research and inadequate monitoring (Alemagi 2011; Ingram et al. 2015; Tieguhong et al. 2015).

4. CONCEPTUAL FRAMEWORK

Given the limitations in sustainable forest governance in Cameroon, it is appropriate to ask how the challenges in achieving CBNRM can be remedied in future situations. Guided by the central research question for this study – 'what are the prospects for inclusive participation of local community members in forest management in the THWS', the analyses in this study specifically explore how sustainable forest management could be attained in the THWS. The central theoretical argument adopted for this study – 'the prospects of local people sustaining CBNRM for livelihood security and conservation needs is argued to be centred on how well programmes are embedded in sociocultural relations, politics, resource needs and uses (Dressler et al. 2010)', also necessitates an exploration of how sociocultural relations, politics, resource needs and uses contribute to desirable forest management outcomes. Various variables/concepts have been carefully chosen to contribute to the case study (Figure 1.2).

In order to analyse forest needs and uses, two variables/concepts are applied. Firstly, the livelihood dynamics of actors are assessed. This assessment is guided by the sustainable livelihood approach. It contributes to answering the research question "what are the forest needs and usage of the local people and how do they align with the sustainable forest and sustainable livelihood agenda?" Secondly, in order to evaluate the ability of various actors to access forest resources, various mechanisms guiding the analysis of access as proposed by Ribot and Peluso (2003) are applied. In addition to the latter, the analysis of the role of institutions in forest governance provided information relevant for the understanding of sociocultural relations in forest governance. Furthermore, how political realities are expressed within the dimensions of power-relations and how this affects forest practices in the field is also important in defining sustainable policy options (Flyvbjerg 1998; Secco et al. 2014). The consideration of forest practices vis-a-vis actors' interests in this study contributes to information on how forest management practices influence sustainable governance in the THWS. More so, the reasoning that environment and development linkages are dynamic and complex and that this is relevant to understand how different elements could be reassembled to influence sustainable forest management is also applied in the concluding arguments of this study.

In summary, the conceptual framework of this study argues that consideration of livelihood dynamics, access mechanisms, the interests of various actors, and practices and institutional processes in forest management could provide vital information necessary for negotiating success-driving forest management. However, how these factors/concepts are negotiated in the process of defining management strategies and policies should be a key concern. Paying close attention to the context, relationships and processes of environment-development linkages could add value to our understanding of how sociocultural relations, politics, resource needs and uses could influence sustainable forest management.

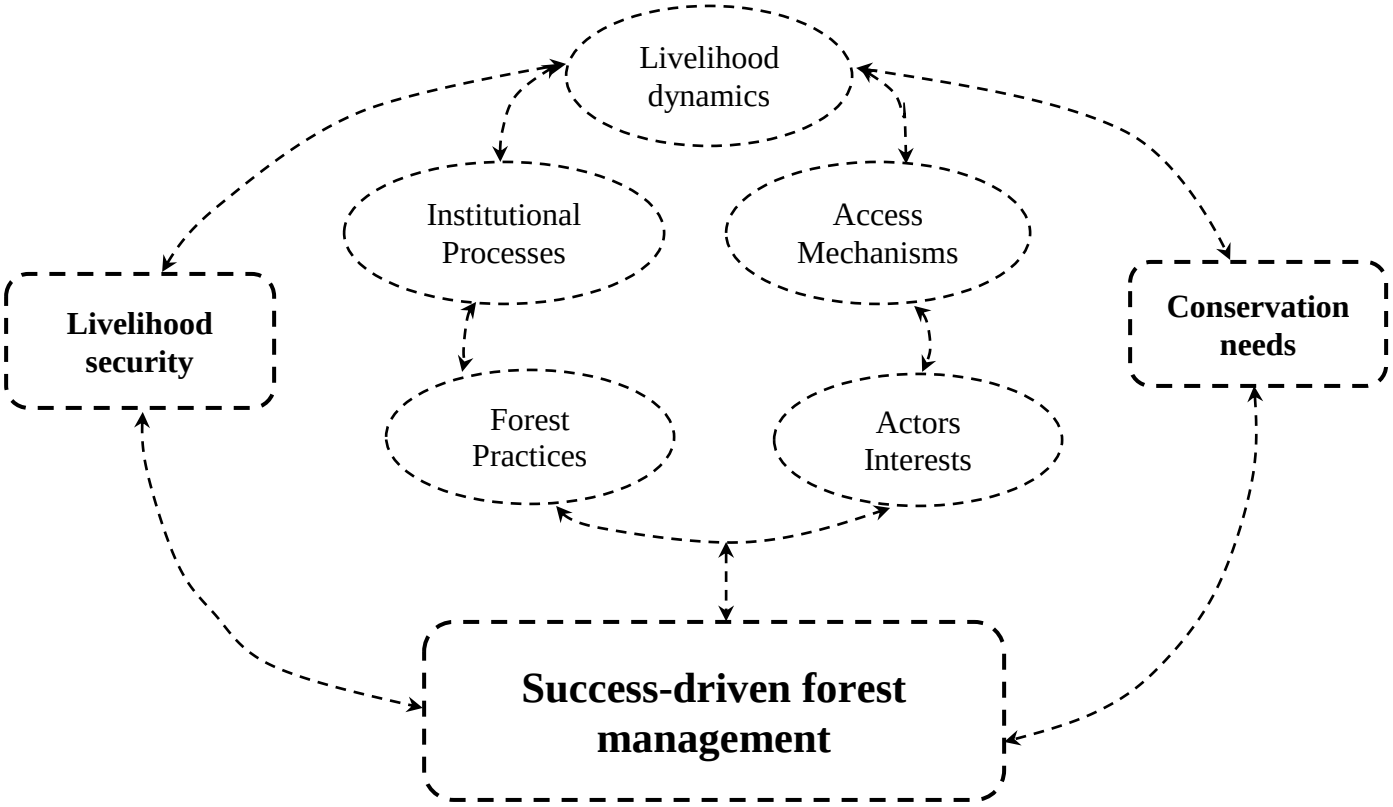

Figure 1.2: Success-Driven Forest Management Framework

*The use of broken lines signifies that they are not fixed definitions of the different variables used in the boxes. The variables are contextual and could be affected differently in different scenarios.

5. CONTRIBUTIONS OF THE THESIS

The dissertation makes two theoretical and four empirical contributions to the field of forest governance.

The first theoretical contribution

is in the application of the concept of access in forest management (chapter III). The theory of access focuses on defining the ability of actors to derive benefits from things using different mechanisms of access (Ribot and Peluso 2003). However, the application of the theory of access in forest management so far has shallowly emphasised the shared value between the theory of access and the theory of critical institutionalism. Both theories start from complexity and diversity of practices and interests and sources of authority, defying simple dichotomies like “traditional” versus “modern” institutions. This study draws insights from institutional perspectives to support the analysis of how institutional settings affect access to forest resources. The introduction of institutional perspectives in exploring the mechanisms of access offered added value by emphasising the social, normative, or rational characters of individuals rather than focusing only on the formal political aspects of access.

The second theoretical contribution is gained through the analysis of the role of customary institutions in forest management (chapter IV). The theory of institutional bricolage used in this analysis guided the argumentation of how institutions interact and how these interactions translate into outcomes in forest resource governance (Cleaver 2001). This analysis not only focused on the interactions, interests and roles influencing outcomes in forest management in the THWS, but also paid close attention to the timing of the social and other processes that guided the negotiations leading to the re-organisation of institutions. Previous applications of the concept of bricolage in forest management have distinguished between the processes of alteration, aggregation and articulation but have paid less attention to the detail of the processes (what happens in the process of formation of new institutions and how actors react to the process) accompanying these types of social change. This study contributes to this gap by arguing that an understanding of the details of social processes in institutional transition processes could go a long way in revealing deep insights necessary in solving institutional challenges.

The four empirical contributions made by this study are linked to the four empirical chapters of this study. Firstly, the study contributes to our understanding of conservation and livelihood conflicts in the THWS. Although conservation and livelihood conflicts are common and similar across the tropics, close and detailed attention to how these challenges align with local development economics is very important. Using mixed methods, chapter II of this thesis evaluates in detail forest usage by the local people and how this transposes to conservation and livelihood challenges in the THWS. At the same time, the data in this section also opens up discussions on the implications of identified conflicts for sustainable forest management.

Chapter II also reflects on how these conflicts could be mitigated. This information is especially relevant for the study area. It is one of the first detailed empirical assessments of livelihood and conservation challenges in the study site. Secondly, the study provides empirical information on how access is bargained for by various actors and individuals and on how practices and actions adopted by actors eventually triggered further actions either consciously or unconsciously. The empirical data in this section also revealed how 'hidden actors' participated in influencing forest access and in what dimensions their engagement affected access. This contribution is important, specifically to the case of protected area management in Cameroon, where little empirical information is available on factors affecting access to resources. Empirical data in this section also revealed how the characteristics of the institutions with the legal responsibility to manage forest resources have affected access. The third empirical contribution takes inspiration from the literature on institutional bricolage in exploring the role of customary institutions in forest management. In this study, particular attention is paid to how the shift in management structures and the processes accompanying the shift affected this role. This chapter contributes to this field not only by highlighting the importance of customary structures in the process of sustainable forest management but also revealed that it is important to consider how institutions negotiate roles in the process of participatory management. This contribution is important in informing the forest management policy of Cameroon, which has been criticised for its shortcomings in enabling functional institutions for participatory and sustainable forest management (Alemagi 2011; Oyono et al. 2012; Ingram et al. 2015).

Fourthly, this study also contributes empirically to the literature on forest governance in Cameroon. Applying both primary and secondary data and using the analytical concepts of discourse and institutional analysis, the study provides key arguments which highlight that local actors are capable of employing unpredicted strategies that could significantly influence the process of forest management. This mostly occurred when they perceived that their authority over forest resources could be threatened by bureaucratic institutions. The results in this section also revealed that the actions of external stakeholders played a significant role in influencing stakeholders' actions in forest management at the local level. The actions of external stakeholders, including donor agencies, conservation activists and international conservation institutions are revealed in this study to have a significant effect on forest practices at the local level. It also revealed that some actions affecting forest practices at local level are most often not intended actions. These findings also contribute significantly to national and international debates on the roles of external stakeholders in influencing forest practices.

REFERENCES

Abreu, A., 2011. Livelihood and Conservation in Guinea-Bissau's National Parks : A Photographic Essay. *Sustainable Development*, 6(1), pp.264–279.

Achterkamp, M.C. & Vos, J.F.J., 2007. Critically Identifying Stakeholders Evaluating boundary critique as a vehicle for stakeholder identification. *Systems Research and Behavioral Science*, 14(September 2005), pp.3–14.

Adam, Y.O. & Eltayeb, A.M., 2016. Forestry decentralization and poverty alleviation: A review. *Forest Policy and Economics*. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934116300971.

Agrawal, A., Chhatre, A. & Hardin, R., 2008. Changing governance of the world's forests. *Science*, 320(5882), pp.1460–2. Available at: http://www.ncbi.nlm.nih.gov/pubmed/18556552 [Accessed March 1, 2012].

Agrawal, A. & Ostrom, E., 2006. Political Science and Conservation Biology: a Dialog of the Deaf. *Conservation Biology*, 20(3), pp.681–682. Available at: http://doi.wiley.com/10.1111/j.1523-1739.2006.00468.x [Accessed July 4, 2011].

Ahlborg, H. & Nightingale, A.J., 2012. Mismatch Between Scales of Knowledge in Nepalese Forestry: Epistemology, Power, and Policy Implications. *Ecology And Society*, 17 (4)(16).

Ajabji, S., Tendem, P. & Nkembi, L., 2008. *A socio-economic report for the Bechati-Fossimondi-Besali forest adjacent villages. Buea, Cameroon*, Buea, Cameroon.

Alemagi, D., 2011. Sustainable development in Cameroon's forestry sector : Progress, challenges, and strategies for improvement. *African Journal of Environmental Science and Technology*, 5(2), pp.65–72.

Aligica, P.D. & Boettke, P., 2011. The Two Social Philosophies of Ostroms ' Institutionalism. *The Policy Studies Journal*, 39(1), pp.29–49.

Anderson, J. et al., 2015. Managing leftovers: Does community forestry increase secure and equitable access to valuable resources for the rural poor? *Forest Policy and Economics*, 58, pp.47–55. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934114002329.

Angelsen, A. et al., 2014. Environmental Income and Rural Livelihoods: A Global-Comparative Analysis. *World Development*, 64, pp.S12–S28.

Arnouts, R., van der Zouwen, M. & Arts, B., 2012. Analysing governance modes and shifts - Governance arrangements in Dutch nature policy. *Forest Policy and Economics*, 16(2012), pp.43–50. Available at: http://dx.doi.org/10.1016/j.forpol.2011.04.001.

Barbier, E.B., 2010. Poverty, development, and environment. *Environment and Development Economics*, 15(6), pp.635–660. Available at: http://www.journals.cambridge.org/abstract_S1355770X1000032X [Accessed July 23, 2012].

Barrett, C.B., Travis, A.J. & Dasgupta, P., 2011. On biodiversity conservation and poverty traps. *Proceedings of the National Academy of Sciences of the United States of America*, 108(34), pp.13907–12. Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3161563&tool=pmcentrez&rendertype=abstract [Accessed May 8, 2014].

Bastiaensen, J., De Herdt, T. & D'Exelle, B., 2005. Poverty reduction as a local institutional process. *World Development*, 33(6), pp.979–993. Available at:

http://linkinghub.elsevier.com/retrieve/pii/S0305750X0500046X [Accessed July 26, 2012].
Berkes, F., 2004. Rethinking Community-Based Conservation. *Conservation Biology*, 18(3), pp.621–630.
Böcher, M., 2012. A theoretical framework for explaining the choice of instruments in environmental policy. *Forest Policy and Economics*, 16, pp.14–22. Available at: http://dx.doi.org/10.1016/j.forpol.2011.03.012.
Boonstra, W.J., 2016. Conceptualizing power to study social-ecological interactions. *Ecology and Society*, 21(1).
Bottrill, M. et al., 2014. What are the impacts of nature conservation interventions on human well-being: a systematic map protocol. *Environmental Evidence*, 3(1), p.16. Available at: http://environmentalevidencejournal.biomedcentral.com/articles/10.1186/2047-2382-3-16.
Brandt, J.S., Nolte, C. & Agrawal, A., 2016. Deforestation and timber production in Congo after implementation of sustainable forest management policy. *Land Use Policy*, 52(2016), pp.15–22. Available at: http://dx.doi.org/10.1016/j.landusepol.2015.11.028.
Brown, H.C.P. & Lassoie, J.P., 2010. Institutional choice and local legitimacy in community-based forest management: lessons from Cameroon. *Environmental Conservation*, 37(3), pp.261–269. Available at: http://www.journals.cambridge.org/abstract_S0376892910000603 [Accessed July 23, 2012].
Buchy, M. & Maconachie, R., 2014. Exclusionary spaces: Power, Poverty and community-based natural resource management in West Africa. In M. Sowman & R. Wybberg, eds. *Governance for Justice and Environmental Sustainability: Lessons Across Natural Resource Sectors in Sub-Saharan Africa*. New York: Routledge, pp. 94–109. Available at: http://books.google.com/books?hl=en&lr=&id=XanpAgAAQBAJ&pgis=1 [Accessed April 12, 2014].
Büscher, B., 2016. Reassessing Fortress Conservation? New Media and the Politics of Distinction in Kruger National Park. *Annals of the American Association of Geographers*, 106(1), pp.114–129.
Büscher, B. & Dietz, T., 2005. Conjunctions of Governance : The State and the Conservation-development Nexus in Southern Africa. *Transdisciplinary Environmental Studies*, 4(2).
Büscher, B. & Dressler, W., 2007. Linking Neoprotectionism and Environmental Governance : On the Rapidly Increasing Tensions between Actors in the Environment-Development Nexus. *Conservation and Society*, 5(4), pp.586–611.
Büscher, B. & Wolmer, W., 2007. Introduction : The Politics of Engagement between Biodiversity Conservation and the Social Sciences. *Conservation and Society*, 5(1), pp.1–21.
Butchart, S.H.M. et al., 2010. Global biodiversity: indicators of recent declines. *Science*, 328, pp.1164–8. Available at: http://www.ncbi.nlm.nih.gov/pubmed/20430971 [Accessed December 11, 2013].
Chambers, R. & Conway, G.R., 1991. *Sustainable rural livelihoods: practical concepts for the 21st Century*,
Chen, H. et al., 2012. Livelihood sustainability and community based co-management of forest resources in China: changes and improvement. *Environmental management*, 49(1), pp.219–28. Available at: http://www.ncbi.nlm.nih.gov/pubmed/22037618 [Accessed April 12, 2012].

Chowdhury, M.E. & Ahmed, S.., 2010. Poverty-environment nexus : an investigation of linkage using survey data Manzoor Elahi Chowdhury * Sarwar Uddin Ahmed. *International Journal of Environment and Sustainable Development*, 9, pp.91–113.

Cleaver, F., 2001. Institutional Bricolage, Conflict and Cooperation in Usangu, Tanzania. *IDS Bulletin*, 32(4), pp.26–35. Available at: http://doi.wiley.com/10.1111/j.1759-5436.2001.mp32004004.x.

Cleaver, F., 2002. Reinventing Institutions : Bricolage and the Social Embeddedness of Natural Resource management. *The European Journal of Development Reinventing Institutions*, 14(2), pp.11–30.

Daur, N., Adam, Y.O. & Pretzsch, J., 2016. Land Use Policy A historical political ecology of forest access and use in Sudan : Implications for sustainable rural livelihoods. *Land Use Policy*, 58, pp.95–101. Available at: http://dx.doi.org/10.1016/j.landusepol.2016.06.016.

Derkyi, M. et al., 2014. Fighting Over Forest: Toward a Shared Analysis of Livelihood Conflicts and Conflict Management in Ghana. *Society & Natural Resources*, 27(3), pp.281–298. Available at: http://dx.doi.org/10.1080/08941920.2013.861550.

Diaw, M.C., Aseh, T. & Prabhu, R., 2009. *In Search of Common Ground: Adaptive Collaborative Management in Cameroon*, Bogor, Indonesia: Researched by the Center for International Forestry Research.

Djeukam, R., 2007. *The Wildlife law as a tool for protecting threatened species in Cameroon*,

Djeumo, A., 2001. *The Development of Community Forests in Cameroon: Origins, Current Situation and Constraints*, London, UK.

Dressler, W. et al., 2010. From hope to crisis and back again? A critical history of the global CBNRM narrative. *Environmental Conservation*, 37(1), pp.5–15. Available at: http://www.journals.cambridge.org/abstract_S0376892910000044 [Accessed March 6, 2012].

Duffy, R. et al., 2016. Toward a new understanding of the links between poverty and illegal wildlife hunting. *Conservation Biology*, 30(1), pp.14–22.

Duffy, R., 2014. Waging a war to save biodiversity : the rise of militarized conservation. *International Affairs 90:*, 90(4), pp.819–834.

Dunn, A. et al., 2014. *Revised Regional Action Plan for the Conservation of the Cross River Gorilla (Gorilla gorilla diehli) 2014–2019*, New York, NY, USA.: 2014 IUCN/SSC Primate Specialist Group and Wildlife Conservation Society.

Epule, E.T. et al., 2011. Forest Loss Triggers in Cameroon: A Quantitative Assessment Using Multiple Linear Regression Approach. *Journal of Geography and Geology*, 3(1), pp.30–41. Available at: http://www.ccsenet.org/journal/index.php/jgg/article/view/10619 [Accessed October 31, 2012].

Etiendem, D.N., Hens, L. & Pereboom, Z., 2011. Traditional Knowledge Systems and the Conservation of Cross River Gorillas: a Case Study of Bechati, Fossimondi, Besali, Cameroon. *Ecology and Society*, 16(3). Available at: http://www.ecologyandsociety.org/vol16/iss3/art22/.

Fankhauser, S. et al., 2013. Who will win the green race? In search of environmental competitiveness and innovation. *Global Environmental Change*, 23(5), pp.902–913.

Farrington, J. et al., 1999. *Sustainable livelihoods in practice: early applications of concepts in rural areas*, London, UK.

Flyvbjerg, B., 1998. *Rationality and Power: Democracy in Practice*, Chicago: Trans. Steven Sampson.

Forsyth, T., 2014. Climate justice is not just ice. *Geoforum*, 54(2014), pp.230–232. Available at: http://dx.doi.org/10.1016/j.geoforum.2012.12.008.

Fraticelli, M., 2012. Problématique générale: les enjeux de la gouvernance des forêts. *aGter*. Available at: http://www.agter.asso.fr/article755_fr.html [Accessed February 20, 2012].

Geschiere, P., 2011. "The 1994 forest law in Cameroon: neoliberals betting on" the" community." , pp.477–494.

De Herdt, T. & Abega, S., 2007. The political complexity of pro-poor policy processes in the Mandara Mountains, Cameroon. *Journal of Human Development*, 8(2), pp.303–24.

De Herdt, T. & Bastiaensen, J., 2004. Aid as an encounter at the interface: the complexity of the global fight against poverty. *Third World Quarterly*, 25(5), pp.871–885. Available at: http://www.tandfonline.com/doi/abs/10.1080/0143659042000231992 [Accessed August 24, 2012].

Hole, D.G. et al., 2009. Adaptive Management for Biodiversity Conservation under Climate Change – a Tropical Andean Perspective. , (Young 2007), pp.19–46.

Ingram, V., Ros-Tonen, M.A.F. & Dietz, T., 2015. A fine mess: Bricolaged forest governance in Cameroon. *International Journal of the Commons*, 9(1), pp.41–64.

Janssen, M. a., Anderies, J.M. & Ostrom, E., 2007. Robustness of Social-Ecological Systems to Spatial and Temporal Variability. *Society & Natural Resources*, 20(4), pp.307–322.

Jum, C. et al., 2007. Enhancing sustainable forest management in Cameroon through a model forest based approach. *International Forestry Review*, 9(4), pp.892–900.

Keenan, R.J. et al., 2015. Dynamics of global forest area: Results from the FAO Global Forest Resources Assessment 2015. *Forest Ecology and Management*, 352, pp.9–20. Available at: http://dx.doi.org/10.1016/j.foreco.2015.06.014.

Khumalo, K.E. & Yung, L.A., 2015. Women, human-wildlife conflict, and CBNRM: Hidden impacts and vulnerabilities in Kwandu Conservancy, Namibia. *Conservation and Society*, 13(3), pp.232–243. Available at: http://www.scopus.com/inward/record.url?eid=2-s2.0-84948770747&partnerID=tZOtx3y1.

Köhl, M. et al., 2015. Forest Ecology and Management Changes in forest production , biomass and carbon : Results from the 2015 UN FAO Global Forest Resource Assessment q. *Forest Ecology and Management*, 352, pp.21–34. Available at: http://dx.doi.org/10.1016/j.foreco.2015.05.036.

Koning, J. de, 2011. *Reshaping Institutions: Bricolage Processes in Smallholder Forestry in the Amazon*. Wageningen University.

Koning, J. de & Cleaver, F., 2012. Institutional bricolage in community forestry: an agenda for future research. In B. Arts et al., eds. *Forest-people Interfaces: Understanding Community Forestry and Bio-cultural Diversity*. Wageningen, The Netherlands: Wageningen Academic Publishers, p. 292.

Leach, M., Mearns, R. & Scoones, I., 1999. Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management. *World Development*, 27(2), pp.225–247. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0305750X98001417.

Leach, M., Scoones, I. & Stirling, A., 2010. *Dynamic Sustainabilities: Technology, Environment,*

Social Justice, Oxon; New York: Earthscan. Available at: http://books.google.be/books/about/Dynamic_Sustainabilities.html?id=28mrualqeXkC&pgis=1 [Accessed June 4, 2014].

Leblond, J.-P., 2014. Thai Forest Debates and the Unequal Appropriation of Spatial Knowledge Tools. *Conservation and Society*, 12(4), p.425. Available at: http://www.conservationandsociety.org/text.asp?2014/12/4/425/155588.

Lele, S. et al., 2013. Ecosystem Services: Origins, Contributions, Pitfalls, and Alternatives. *Conservation and Society*, 11(4), p.343. Available at: http://www.conservationandsociety.org/text.asp?2013/11/4/343/125752 [Accessed June 5, 2014].

Lepper, C.M. & Goebel, S.J., 2010. Community-based natural resource management, poverty alleviation and livelihood diversification: A case study from northern Botswana. *Development Southern Africa*, 27(5), pp.725–739. Available at: http://www.tandfonline.com/doi/abs/10.1080/0376835X.2010.522834 [Accessed May 7, 2012].

Li, T.M., 2007. Practices of assemblage and community forest management. *Economy and Society*, 36(2), pp.263–293. Available at: http://www.informaworld.com/10.1080/03085140701254308.

Liu, J. et al., 2007. Complexity of coupled human and natural systems. *Science (New York, N.Y.)*, 317(5844), pp.1513–6. Available at: http://www.ncbi.nlm.nih.gov/pubmed/17872436 [Accessed March 23, 2014].

Lubell, M.N., Feiock, R.C. & de la Cruz, E.E.R., 2009. Local Institutions and the Politics of Urban Growth. *American Journal of Political Science*, 53(3), pp.649–665. Available at: http://doi.wiley.com/10.1111/j.1540-5907.2009.00392.x.

Maryudi, A. et al., 2012. Back to basics: Considerations in evaluating the outcomes of community forestry. *Forest Policy and Economics*, 14(1), pp.1–5. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934111001195 [Accessed August 20, 2013].

McCarthy, D.D.P. et al., 2012. Collaborative geomatics and the Mushkegowuk Cree First Nations: Fostering adaptive capacity for community-based sub-arctic natural resource management. *Geoforum*, 43(2), pp.305–314. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0016718511001503 [Accessed May 7, 2012].

McShane, T.O. et al., 2011. Hard choices: Making trade-offs between biodiversity conservation and human well-being. *Biological Conservation*, 144(3), pp.966–972. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0006320710001849 [Accessed March 7, 2012].

Mislimshoeva, B., Herbst, P. & Koellner, T., 2016. Current pathways towards good forest governance for ecosystem services in the former Soviet republic Tajikistan. *Forest Policy and Economics*, 63(2016), pp.11–19. Available at: http://www.sciencedirect.com/science/article/pii/S1389934115300733.

Ndibi, B.P. & Kay, E.J., 1999. Measuring the local community â€™ s participation in the management of community forests in Cameroon. , 271.

Newton, P. et al., 2012. Consequences of actor level livelihood heterogeneity for additionality in a tropical forest payment for environmental services programme with an undifferentiated

reward structure. *Global Environmental Change*, 22(1), pp.127–136. Available at: http://dx.doi.org/10.1016/j.gloenvcha.2011.10.006.

Nkemnyi, M.F., 2016. An Analysis of Local Participation in Community Forestry : The Case of Tinto and Bimbia-Bonadikombo Community Forest, Cameroon. *Sustainability in Environment*, 1(2), pp.85–97.

Nkemnyi, M.F. et al., 2013. Making hard choices: balancing indigenous communities livelihood and Cross River gorilla conservation in the Lebialem–Mone Forest landscape, Cameroon. *Environ Dev Sustain*, 15, pp.841–857.

Nkemnyi, M.F. et al., 2012. The Cross River gorilla and large mammals species diversity in the in the Lebialem-Mone Forest Landscape, Cameroon. *Biodiversity and Ecological Sciences*, 2(2), pp.73–79.

Nkemnyi, M.F., Koedam, N. & De Vreese, R., 2011. *Livelihood and Conservation: Reconciling Communities' Livelihood needs and Conservation Strategies in the Bechati forest area, Western Cameroon*, Saarbrücken, Germany: LAMBERT Academic Publishing.

Ochola, W., Sanginga, P.C. & Bekalo, I., 2010. *Managing natural resources for development in Africa: A resource book*, Nairobi, Kenya: International Institute of Rural Reconstruction (IIRR).

Ojha, H.R. et al., 2016. Delocalizing Communities: Changing Forms of Community Engagement in Natural Resources Governance. *World Development*, 87, pp.274–290. Available at: http://dx.doi.org/10.1016/j.worlddev.2016.06.017.

Onel, N. & Mukherjee, A., 2013. The effects of national culture and human development on environmental health. *Environment, Development and Sustainability*, 16(1), pp.79–101. Available at: http://link.springer.com/10.1007/s10668-013-9464-y [Accessed March 24, 2014].

Ostrom, E., 2003. How types of goods and property rights joingly affect collective action. *Journal of Theoretical Politics*, 15(3), pp.239–270.

Ostrom, E. & Cox, M., 2010. Moving Beyong panaceas: a multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation*, 37(4), pp.451–463.

Oyono, P.R., 2008. Assessing Accountability in Cameroon ' s Local Forest Management . Are Representatives Responsive ? , 9(June 2004), pp.1–10.

Oyono, P.R., Ribot, J.C. & Larson, A.M., 2006. *Green and Black Gold in Rural Cameroon: Natural Resources for Local Governance, Justice and Sustainability*, Available at: https://netfiles.uiuc.edu/ribot/shared/Oyono Ribot Larson -final 10-06.pdf.

Oyono, P.R., Samba, S.K. & Biyong, M.B., 2012. Beyond the decade of policy and community euphoria: The state of livelihoods under new local rights to forest in rural Cameroon. *Conservation and Society*, 10(2), p.173. Available at: http://www.conservationandsociety.org/text.asp?2012/10/2/173/97489 [Accessed August 20, 2012].

Paletto, A. et al., 2016. Power of Forest Stakeholders in the Participatory Decision Making Process: A Case Study in Northern Italy. *Acta Silvatica et Lignaria Hungarica*, 12(1), pp.9–22. Available at: http://www.degruyter.com/view/j/aslh.2016.12.issue-1/aslh-2016-0002/aslh-2016-0002.xml.

Pendergast, S.M., Clarke, J. a. & Van Kooten, G.C., 2011. Corruption, Development and the Curse of Natural Resources. *Canadian Journal of Political Science*, 44(2), pp.411–437.

Available at: http://www.journals.cambridge.org/abstract_S0008423911000114 [Accessed August 11, 2012].
Persha, L., Agrawal, A. & Chhatre, A., 2011. Social and ecological synergy: local rulemaking, forest livelihoods, and biodiversity conservation. *Science (New York, N.Y.)*, 331(6024), pp.1606–8. Available at: http://www.ncbi.nlm.nih.gov/pubmed/21436453 [Accessed March 20, 2014].
Pezzey, J., 1992. *Suatainable Development Concepts: An Economic Analysis*, Washington, D.C: The International Bank for Reconstruction and Development/The World Bank.
Rands, M.R.W. et al., 2010. Biodiversity conservation: challenges beyond 2010. *Science*, 329, pp.1298–303. Available at: http://www.ncbi.nlm.nih.gov/pubmed/20829476 [Accessed August 6, 2013].
Redford, K.H., Roe, D. & Sunderland, T.C.., 2013. *Linking Conservation and Poverty Alleviation : A Discussion Paper on Good and Best Practice in the Case of Great Ape*, London, UK.
Ribot, J.C., 2003. Democratic decentralisation of natural resources: institutional choice and discretionary power transfers in Sub-Saharan Africa. *Public Administration and Development*, 23(1), pp.53–65. Available at: http://doi.wiley.com/10.1002/pad.259 [Accessed March 1, 2012].
Ribot, J.C., Agrawal, A. & Larson, A.M., 2006. Recentralizing While Decentralizing: How National Governments Reappropriate Forest Resources. *World Development*, 34(11), pp.1864–1886. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0305750X06001306 [Accessed March 21, 2014].
Ribot, J.C. & Peluso, N.L., 2003. A Theory of Access. *Rural Sociology*, 68(2), pp.153–181. Available at: http://doi.wiley.com/10.1111/j.1549-0831.2003.tb00133.x.
Rockström, J. et al., 2009. Planetary Boundaries: Exploring the safe operating space for humanity. *Ecology And Society*, 14(2), pp.1–36.
Rodela, R., Cundill, G. & Wals, A.E.J., 2012. An analysis of the methodological underpinnings of social learning research in natural resource management. *Ecological Economics*, 77, pp.16–26. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0921800912000961 [Accessed July 23, 2012].
Romijn, E. et al., 2015. Assessing change in national forest monitoring capacities of 99 tropical countries. *Forest Ecology and Management*, 352, pp.109–123. Available at: http://dx.doi.org/10.1016/j.foreco.2015.06.003.
Samndong, R. a. & Vatn, a., 2012. Forest related conflicts in South-East Cameroon: causes and policy options. *International Forestry Review*, 14(2), pp.213–226. Available at: http://openurl.ingenta.com/content/xref?genre=article&issn=1465-5489&volume=14&issue=2&spage=213.
Sanginga, P.C., Ochola, W.O. & Bekalo, I., 2010. Natural Resource Management and Development Nexus in Africa. In W. O. Ochola, P. C. Sanginga, & I. Bekalo, eds. *Managing Natural Resources for Development in Africa: A Resource Book*. Nairobi, Kenya: International Institute of Rural Reconstruction (IIRR), p. 571.
Saunders, F.P., 2014. The promise of common pool resource theory and the reality of commons projects. *International Journal of the Commons*, 8(2), pp.636–656.
Schusser, C. et al., 2015. Powerful stakeholders as drivers of community forestry - Results of an international study. *Forest Policy and Economics*, 58, pp.92–101. Available at:

http://dx.doi.org/10.1016/j.forpol.2015.05.011.
Scoones, I., 1998. *Sustainable rural livelihoods: a framework for analysis*,
Secco, L. et al., 2014. Why and how to measure forest governance at local level : A set of indicators. *Forest Policy and Economics*, 49, pp.57–71. Available at: http://dx.doi.org/10.1016/j.forpol.2013.07.006.
Senganimalunje, T.C. et al., 2015. Does participatory forest management program lead to efficient forest resource use and improved rural livelihoods? Experiences from Mua-Livulezi Forest Reserve , Malawi. *Agroforestry Systems*.
Simon, G.L., Bumpus, A.G. & Mann, P., 2012. Win-win scenarios at the climate-development interface: Challenges and opportunities for stove replacement programs through carbon finance. *Global Environmental Change*, 22(1), pp.275–287. Available at: http://dx.doi.org/10.1016/j.gloenvcha.2011.08.007.
Soltani, A. et al., 2012. Poverty, sustainability, and household livelihood strategies in Zagros, Iran. *Ecological Economics*, 79, pp.60–70. Available at: http://linkinghub.elsevier.com/retrieve/pii/S092180091200170X [Accessed November 21, 2012].
Stone, M.T. & Nyaupane, G., 2014. Rethinking community in community-based natural resource management. *Community Development*, 45(1), pp.17–31. Available at: http://www.tandfonline.com/doi/abs/10.1080/15575330.2013.844192 [Accessed May 6, 2014].
Tegegne, Y.T. et al., 2016. Evolution of drivers of deforestation and forest degradation in the Congo Basin forests: Exploring possible policy options to address forest loss. *Land Use Policy*, 51(2016), pp.312–324.
Tieguhong, J.C. et al., 2015. How governance impacts non-timber forest product value chains in Cameroon. *Forest Policy and Economics*, 61, pp.1–10. Available at: http://dx.doi.org/10.1016/j.forpol.2015.08.003.
Trumbore, S., Brando, P. & Hartmann, H., 2015. Forest health and global change. *Science*, 6250, pp.814–818.
Virtanen, P., 2005. Community-based natural resource management in Mozambique: a critical review of the concept's applicability at local level. *Sustainable Development*, 13(1), pp.1–12. Available at: http://doi.wiley.com/10.1002/sd.240 [Accessed March 1, 2012].
van Vliet, N., 2010. Participatory Vulnerability Assessment in the Context of Conservation and Development Projects : A Case Study of Local Communities in Southwest Cameroon. *Ecology And Society*, 15(2).
WCED, 1987. *Sustainable Development. A Guide to Our Common Future (The Bruntland Report)*, Geneva.
Whiteman, A., Wickramasinghe, A. & Piña, L., 2015. Global trends in forest ownership, public income and expenditure on forestry and forestry employment. *Forest Ecology and Management*, 352, pp.99–108. Available at: http://dx.doi.org/10.1016/j.foreco.2015.04.011.
Wodschow, A., Nathan, I. & Cerutti, P., 2016. Participation, public policy-making, and legitimacy in the EU Voluntary Partnership Agreement process: The Cameroon case. *Forest Policy and Economics*, 63(2016), pp.1–10. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934115300745.

World Bank, 2007. *The Nexus Between Infrastructure and Environment: From the Evaluation Cooperation Group of the International Financial Institutions*, Washington, DC.

Wright, J.H. et al., 2016. Reframing the concept of alternative livelihoods. *Conservation Biology*, 30(1), pp.7–13.

Wright, J.H. & Priston, N.E.C., 2010. Hunting and trapping in Lebialem Division , Cameroon : bushmeat harvesting practices and human reliance. *Endangered Species Research*, 11, pp.1–12.

Yadav, B.D., Bigsby, H. & MacDonald, I., 2015. How can poor and disadvantaged households get an opportunity to become a leader in community forestry in Nepal? *Forest Policy and Economics*, 52, pp.27–38. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934114002202.

Yufanyi Movuh, M.C., 2013. Analyzing the Establishment of Community Forestry (CF) and Its Processes Examples from the South West Region of Cameroon. *Journal of Sustainable Development*, 6(1), pp.76–89. Available at: http://www.ccsenet.org/journal/index.php/jsd/article/view/23398 [Accessed August 20, 2013].

Yufanyi Movuh, M.C., 2012. The Colonial heritage and post-Colonial influence, entanglements and implications of the concept of community forestry by the example of Cameroon. *Forest Policy and Economics*, 15, pp.70–77. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934111000724 [Accessed July 23, 2012].

CHAPTER 2

LIVELIHOOD ACTIVITIES AND THEIR IMPACT ON WILDLIFE CONSERVATION IN THE TOFALA-MONE FOREST CORRIDOR

ABSTRACT

Tropical forests could satisfy multiple demands for goods and services both for present and future generations if sustainable practices are adopted. This study evaluates human activities in the Tofala-Mone Forest Corridor and how they affect sustainable forest management. The study applied mixed research methods including a reconnaissance survey, questionnaires and in-depth interviews in order to evaluate the relationship between anthropogenic activities and wildlife conservation. The study revealed that the intervention of stakeholders to regulate human-wildlife conflicts through livelihood support was not sufficient to sustainably address human-wildlife conflicts. There is increasing scarcity of wildlife in the study area as a result of human activities. Local people preferred farming in the forest habitat because of cultural attachments, the high fertility of the forest compared to secondary forest and other benefits derived from forest resources. Local people believed that the value of the resources they harvest from the forest could not be compensated by the alternative livelihood opportunities offered to them. Forest-based activities play an important role in the lifestyle of the local people, making it difficult for them to completely switch their attention away from forest resources. This study argues that human-wildlife conflicts are usually underlined by multiple factors that cannot immediately be resolved by the implementation of single/simple strategies. Interventions aimed towards mitigating the effect of human activities on forest resources should carefully evaluate and weigh up possible solutions vis-à-vis their outcome with respect to the socioeconomic and sociocultural characteristics of the targeted community.

Key words: Human activities, forest management, wildlife conservation, local livelihoods, human-wildlife conflicts

1. INTRODUCTION

Tropical forests could satisfy multiple demands for goods and services both for present and future generations if sustainable practices are adopted (Macdicken 2015). However, conflicts of use commonly arise amongst users (Bond 2014). There is a need to address these conflicts to enable sustainable resource management. Across the tropics, integrated approaches to natural resource management remain rare and conflicts of use are widespread (Guariguata et al. 2010). Most of the world's biodiversity is found in areas inhabited by people. Historically, tropical areas have been the homelands of people who are highly dependent on ecosystem services through small-scale agriculture, forest resource use, small-scale fisheries and subsistence economies of hunting and gathering for livelihood (Berkes 2009). Conserving species and ecosystems will therefore depend on our understanding of social systems and their interactions with ecological systems (Lambin and Meyfroidt 2010). Involving people in conservation requires paying attention to livelihoods and creating a local stake for conservation (Schroth and McNeely 2011). This requires maintaining cultural connections to the land and creating space for local knowledge to be integrated into conservation actions (Berkes 2007; Berkes et al. 2009).

Despite the different strategies that have been implemented across the globe in an attempt achieve conservation and maintain biodiversity, the rate of biodiversity loss continues to increase (Butchart et al. 2010). Limited alternatives to forest usage and proximity of local people to forest resources has been associated with higher reliance of local people on forest resources (Belcher et al. 2015; Dokken and Angelsen 2015). Despite some local successes and increasing concern around biodiversity conservation, wildlife exploitation, especially through hunting, has evolved into a large-scale commercial activity across the tropics (Naeem 2002; Robinson and Bennett 2004; Butchart et al. 2010; Rands et al. 2010). Forest fragmentation as a result of agricultural activities and timber logging are major challenges to tropical forest conservation (Guariguata et al. 2010; Dunn et al. 2014). In the face of rapid change in land use and the extinction of species, there is considerable debate about which strategies are best for achieving conservation objectives (Büscher 2014).

In East, West and Central Africa, wildlife exploitation constitutes one of the greatest threats to biodiversity loss (Wright and Priston 2010; Butchart et al. 2010; Mgawe et al. 2012). Wildlife is hunted for bushmeat. "Bushmeat is an African term that includes all wildlife species used for food, from cane rats to elephants" (Butchart et al. 2010). The bushmeat market in West and Central Africa contributes substantially to local people's household income (Willcox and Nambu 2007). Despite the forestry and environmental policies put in place by local governments in the tropics to regulate illegal wildlife hunting, biodiversity loss is still on the rise (Romijn et al. 2015). On the other hand, subsistence agriculture is also a major threat to biodiversity conservation (Garcia et al. 2010). These methods of farming,

which are often shifting cultivation and slash and burn farming, result in forest fragmentation and therefore represent serious disturbance and threats to wildlife (Hilson and Garforth 2012).

The expansion of human activities has led to an increase in conversion of natural habitat, changes in nutrient flows, pollution, climate change, and overharvesting. The combined effect of these impacts threatens many species at risk of extinction (Lotz and Allen 2013). In Cameroon, the creation and management of protected areas as supported by the 1994 wildlife law and the 1996 environment law are some of the local governments' efforts to fight biodiversity loss (Djeukam 2007; Oyono et al. 2012). However, given that local people are highly dependent on forest resources to meet both development and livelihoods needs, and that limited viable alternatives to forest resources exist for most local people, they are bound to continue forest exploitation, even when prohibited by the law (Nkemnyi et al. 2016).

Despite the rich biodiversity of the Tofala-Mone Forest Corridor (surveyed area), sustainable forest management practices are rare and this has posed a serious threat to biodiversity, most especially to great apes species (gorillas and chimpanzees) in the landscape (Dunn et al. 2014). Income needs of households are argued to be one of the major threats to wildlife conservation in the landscape (Nkemnyi et al. 2013).

The main objective of this study is to map-out how livelihoods activities impact upon wildlife conservation in the Tofala-Mone Forest Corridor (TMFC). The rationale in mapping out the impact of livelihood on wildlife conservation is motivated by the fact that conservation and local livelihoods are strongly correlated and can affect one another in a positive or negative way depending on the implementation approach (Schroth and McNeely 2011). Conservation and livelihood challenges are dynamic and there is no unique approach to achieving sustainable conservation or sustainable livelihoods, nor is there a guarantee that a successful approach in one community will work in other communities (Rands et al. 2010). Communities are very dynamic; culture and ethical values affect conservation approaches differently. The workability of an approach needs to be assessed in all cases prior to implementation (Leach et al. 2010).

The following objectives were considered during the study:

- To assess wildlife and livelihood activities in the TMFC
- To evaluate the importance of forest related activities to local livelihood in the TMFC
- To map out how livelihoods impact wildlife conservation in the TMFC

2. FOREST MANAGEMENT AND LIVELIHOODS

It is argued that forest management in the tropics usually threatens the livelihoods of the rural poor given that they rely highly on forest resources for their livelihoods and that it is challenging to provide satisfactory alternative sources of income to replace forest resources (Nkemnyi et al. 2013). The conflicts between forest management and livelihood have been linked to the argument that factors which affect the success of forest management are dynamic in nature and are bound to affect actors differently, based on their characteristics (Arts and de Koning 2017). These factors include biophysical factors like micro-climate, demographic factors such as community size and population growth, institutional factors such as rules and rights governing the forest, economic factors such as income from the forest, socio-political factors such as cultural, political and social capital and external factors such as influence by the government, researchers and donor institutions. Developing win-win collaborations in forest and livelihood management requires sustainable policies and incentives that align with the local agenda for sustainable natural resource management (Fankhauser et al. 2013). In order to resolve the conflicts between forest conservation and local livelihoods, the concept of Community Forest Management (CFM) has been advocated as an approach to fulfil both local livelihoods and forest conservation while sustaining local rules and norms (Dressler et al. 2010). CFM as used in this scenario is defined as the use, management, and conservation of forests by communities (Arts and de Koning 2017). In most cases of CFM, community members could have no access, partial access and/or full access to such forests and their management is often practiced in collaboration with the state forest agencies, companies and/or donor institutions.

Irrespective of the management process of community forest, it is argued that the prospects of local people sustaining forest management for livelihood security and conservation needs is centred on how well programmes are embedded in socio cultural relations, politics, resource needs and uses (Dressler et al. 2010). For sustainable livelihoods to be achieved in forest management, there is a need to understand the linkages between forest usage and local livelihoods and to question how policies influence and are influenced by actors in the process of forest management (McShane et al. 2011).

2. 1 CONCEPTUALISING SUSTAINABLE LIVELIHOODS

Livelihood is defined as a means of securing a living (Chambers and Conway 1991). It comprises the capabilities assets (including both material and social resources) and activities required for a means of living (Scoones 1998). Thus, a livelihood may be considered as sustainable when it has the ability to cope with and recover from stresses and shocks and still maintain its capabilities and assets, without compromising the natural resource base. The

concept of Sustainable Livelihoods Approach (SLA) provides insight into how local people engage in their daily activities in search of sustainable livelihoods through access to a range of forest resources. The SLA pays more interest to poor people, recognising their participation in management decisions, policies, projects and research as important for NRM (Carney 1999; Farrington et al. 1999; Morse and Mcnamara 2012). The focus of the SLA on the poor is motivated by the rationale that people's access to assets is influenced by the vulnerability context, which further categorises changing livelihoods as the combined effect of trends, shocks and seasonality. Thus, the poor are considered more vulnerable to the effects of livelihood and to management decisions affecting livelihoods.

The question of how sustainability can be achieved in a dynamic system is very important in establishing linkages between livelihood and forest management (Leach et al. 2010). This implies that different factors, including demographic, institutional, economic, socio-political biophysical and other external factors, should be appropriately addressed (Arts and de Koning 2017). To cope with some of these challenges of SFM, efforts have been concentrated on biodiversity (wildlife) conservation (Butchart et al. 2010). However, biodiversity conservation in most developing countries is at odds with local livelihoods (Arts and de Koning 2017). The major concern of sustainability in forest conservation is how to satisfy the needs of diverse stakeholders while safeguarding the forest at the same time (Dressler et al. 2010; Bond 2014). This is in line with the vision of CFM and Community-based natural Resource Management (CBNRM), which is to improve the livelihoods of the local people by empowering them to manage natural resources in their community for their own wellbeing (Ochola et al. 2010; Lin and Chang 2011).

The way in which people combine and use their assets to achieve their goals is influenced by the prevailing social, institutional and political environment (Chambers and Conway 1991; de Haan and Zoomers 2005). Borrowing from the sustainable livelihoods framework and the reasoning behind the 'sustainability question' (Chambers and Conway 1991), this study made use of field data to analyse potential sustainable actions for effective collaboration between local people and forest management (wildlife conservation) in the TMFC. The application of the sustainability concept and the SLA to this study represents a significant step forward in development thinking because it allows us not only to question the sustainability of the actions or activities but also to deliberate on possible intervention mechanisms. Secondly, it makes explicit the choices and possible trade-offs in planning and executing different forest-related activities. Thirdly, it also helps to link micro-level understandings of poverty to policy and institutional change processes (Farrington et al. 1999).

In this study, the concept of SLA is applied to question how the forest-based activities practiced by the local people met sustainable forest management objectives. It enabled the study to explore possible intervention mechanisms which could be applied to resolve issues

of unsustainable forest management in the study area. Data collection focused on identifying materials and social resources that were mobilised to pursue livelihoods. In addition, the data collected allowed reflection on the ability of the local people to pursue various activities with the ability to cope with and recover from stresses and shocks and still maintain their capabilities and assets, without compromising the natural resource base. The application of the framework also enabled a critical reflection of how the planning of wildlife conservation activities in the THWS could capture the needs of the local people in planning and implementation of conservation activities. Finally, the framework enabledreflection on how local institutions and policies could shape livelihood outcomes of the local people in a way that would satisfy both the development and conservation agenda of the study area.

3. MATERIALS AND METHODS

3.1. STUDY AREA

The study was conducted in the Tofala-Mone Forest Corridor (TMFC), located in the Lebialem Highlands, Southwest Region of Cameroon. The area is characterized by an undulating landscape from Bechati community (260 m) in the lower altitudes to Fossimondi community (2,400 m) in the higher altitudes, with a chain of peaks, notably the Tofala Hill (866 m) (Nkemnyi et al., 2013). The TMFC has a surface area of 65,000 ha (Figure 2.1). It stretches from Lebialem Division in the east to Manyu (Upper Banyang) Division in the west. It lies between latitude 628000-644000 and longitude 560000-578000, UTM grid system (Nkembi and Muh 2012). The TMFC lies within the equatorial rainforest zone characterized by two major seasons; the dry season which runs from November-February and the wet season which runs from March-October (Nkemnyi et al. 2011). The TMFC is very rich in wildlife species. It is home to 24 identified large mammals, including the critically endangered Cross River gorilla (*Gorilla gorilla diehli*) and the endangered Nigeria-Cameroon Chimpanzee (*Pan troglodytes ellioti*) (Nkemnyi et al. 2012). There are about 28 villages within and around the TMFC. The livelihood of the local people revolves around hunting, farming, fishing, and small businesses and to a lesser extent other professional careers (mainly in the teaching sector) (Nkemnyi et al. 2013). The main local cash crops are cocoa, oil palms and coffee. Agriculture is mainly for subsistence and the main method of farming is slash and burn (Ajabji et al. 2008).

3.2. DATA COLLECTION TECHNIQUES

To assess the relationship between anthropogenic activities and wildlife, three main data collection techniques were applied; reconnaissance or recce survey, questionnaires and

in-depth interviews. The combination of field observations of anthropogenic activities using recce survey added more value and meaning to the data collected through questionnaires and in-depth interviews. This mixed method offered opportunities for detailed and practical reflection on human activities which could not possibly be revealed through questionnaires and in-depth interviews alone.

3.2.1. RECONNAISSANCE (RECCE) SURVEY

Recce survey approach was adopted for this study because of its convenience and effectiveness in data collection in rough topography like in the study area. The approach is economical and time effective compared to the line transects approach.

Recce survey enabled the assessment of human activities in relation to wildlife activities in the study area. It also contributed to the validation of data gathered during questionnaire survey. Twenty seven 2x2 km^2 predetermined quadrants were used for sampling (Figure 2.1). Each 2x2 km quadrant was walked using guided recce walk in a pre-determined compass bearing. Quadrant bearings were chosen to cut diagonally across transects. Quadrants were sampled following paths of less resistance including hunting tracks, large mammals' trails, village paths and river courses (recce survey). Recce walks were guided not to deviate significantly from the pre-determined bearing using a compass. All data collected were recorded on a data sheet. Human activities data collected through recce survey included farmland, gun shots heard during transect survey, gun shells seen and numbers/nature of snares (traps) and other signs indicating human disturbance in the field. Biological data were also collected during the recce survey including sleeping nests for large mammals, feeding signs, tracks (trails), dung piles, vocalization and direct observation. Human activities and biological data were used to estimate relative abundance of human activity and wildlife respectively and most importantly to inform of the relationship between human activities and wildlife.

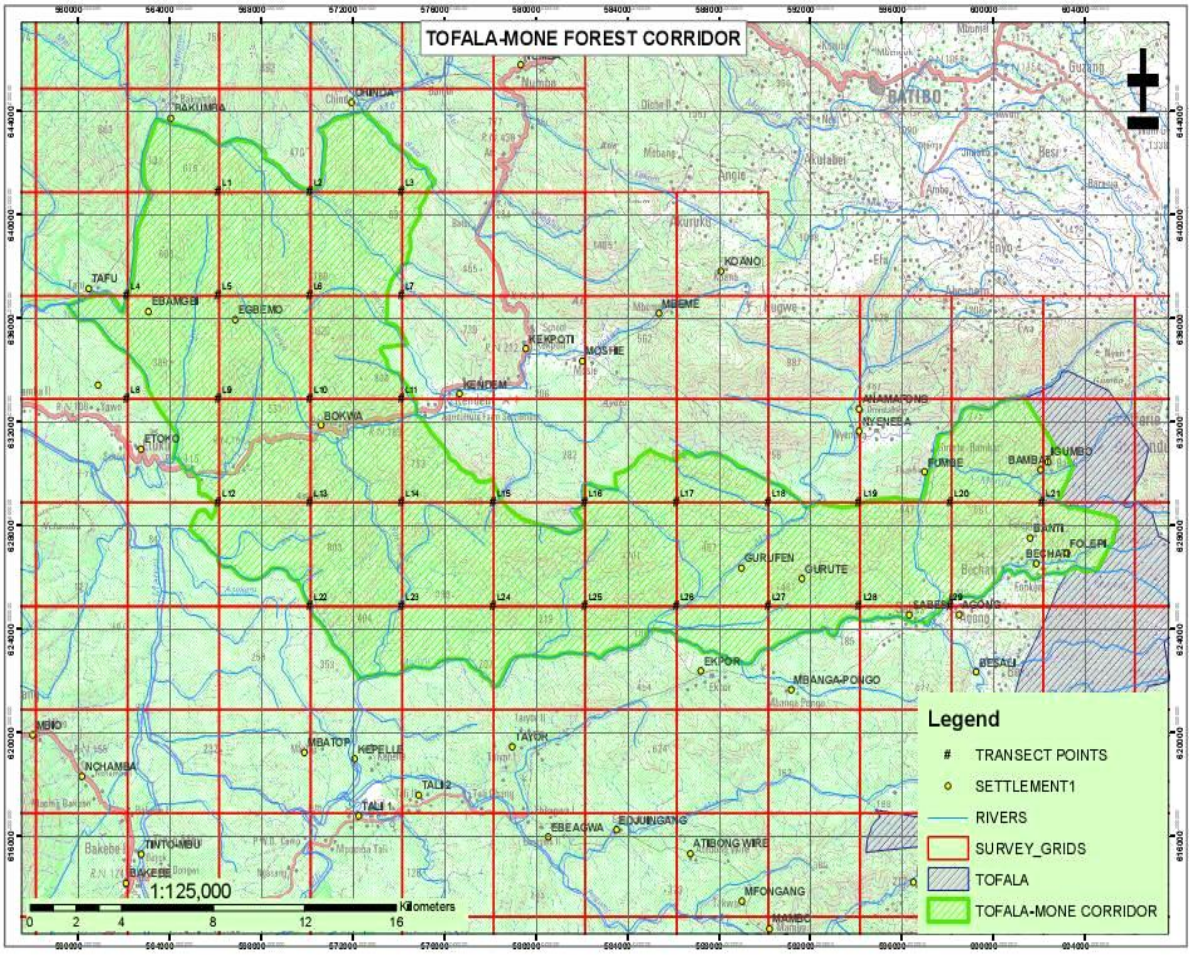

Figure 2.1: Map of the study area (TMFC)

3.2.2. QUESTIONNAIRES AND INTERVIEWS

Questionnaires and interviews were designed to enable the evaluation of actors involved in anthropogenic activities in the study area. This included agricultural and hunting activities among others. Farming and hunting activities were the main focus during data collection because of the prevalence of these activities in the study area (Wright and Priston 2010; Nkemnyi et al. 2016). Specifically, questionnaires elicited information on types of human activities practice in the forest area with a focus on agriculture (farming) or hunting activities and the related details. In-depth interviews elicited information on factors influencing human activities in the forest area and how they were affecting wildlife conservation. The key questions solicited information on the different livelihood activities practiced by the local community members, how they were linked to the forest, and subsequently how they affected wildlife conservation activities.

Questionnaires were administered to eight villages (Bokwa, Egbemoh Ebangabi, Kendem, Etoko, Tafu, Bakumba and Chinda) in the TMFC. Sampled villages were purposely

selected to cover respondents whose livelihoods were directly linked to the forest. The proximity of villages to the forest area and their spatial distribution across the study area were the main characteristics considered whilst selecting the villages for sampling. The former selection criterion was motivated by the argument that proximity to forest resources is associated with higher reliance (Belcher et al. 2015). Questionnaires were administered to 273 individuals from different households across eight villages. The study sampled opinions among different household members participating in forest-linked anthropogenic activities. The survey ensured equal opportunity for both gender classes to participate in the study. Before approaching each household to begin a survey, a coin was tossed to determine which of the household genders (male or female) would participate in the survey. If the head of the coin faced up, the male gender was interviewed and if the tail of the coin faced up, the female was interviewed. In a household where there was more than one spouse, the research assistant made a choice of whom to interview.

Given that the study was interested in exploring human activities linked to the forest and factors influencing these activities, the focus was on those persons who were involved. In addition, information on why they were involved and the type of activities they carried out in the forest area was considered. The target population was classified as farmers, NTFP collectors, hunters (using guns and/or other weapons), trappers (using only snares) and hunter/trappers (using both guns and snares). The categorization of hunters was motivated by arguments that the bushmeat market in West and Central Africa contribute substantially to local households' livelihoods and income (Willcox and Nambu 2007). Thus, it was necessary to explore more deeply the dynamics of hunting.

The sampled villages included eight communities. Three (Bokwa, Egbemoh and Ebangabi) were located inside the forest corridor and five (Kendem, Etoko, Tafu, Bakumba and Chinda) were located adjacent to the forest corridor. These villages are subsequently referred to as interior (villages located inside the forest corridor) and peripheral villages (villages located adjacent the forest corridor) respectively. Purposive and snowball sampling were the main methods used in in-depth interviews survey (Tongco 2007). Initial interviewees were identified with the help of a local field guide and the village quarter heads in most cases. In total, 145 interviews were conducted; 73 with hunters and bushmeat traders, seven with local government officials, 48 with farmers, six with staff working for a local non-profit organization promoting conservation activities in the study area and 11 with members of the village forest management committee (VFMC). The categorization of respondent was important to enable the study to capture diverse views of actors in livelihoods and wildlife conservation in the study area.

3.3. DATA ANALYSIS

For data collected through recce survey, the relative density (RD), also known as encounter rate (ER) (the number of direct sightings or signs per kilometre of transect), was estimated for all large mammal signs and human activities. Data on large mammals was gathered together and encounter rates for each transect estimated in order to determine areas with a high density of mammal activities. Human activities were grouped into hunting activity, agricultural activities and other activities. Spatial distribution maps were produced using geo-referenced relative densities that were imported into Arc view 3.2 for shape files production and finally into ArcGIS 9.3.

Data collected from the questionnaire survey were cross-checked for consistency and completeness in the field. For categorical variables, descriptive statistics were used to present the distribution of subjects between and within subsets. Multiple response analysis was used for multiple-choice question. Measures of association between variables were carried out using the Chi-Square test of independence or of equality of proportions. All statistics were discussed at the 0.05 significance level (α=0.05). Information collected during the interviews was processed first by coding (Crang & Cook, 2007). Coding during field work was used to review the field notes and to dissect information meaningfully while keeping the relations between the parts intact. The different answers were classified according to the main themes linked to the research questions and the theoretical framework.

4. RESULTS

4.1. ENCOUNTER RATE FOR LARGE MAMMALS IN THE TOFALA-MONE FOREST CORRIDOR

A census effort of 49.0 km of recce walk was completed in the TMFC. Signs of seven species of large mammals were documented. Three of the large mammals documented were identified to belong to the family Bovidae. These were the forest buffalo (*Syncerus caffer*), the bay duiker (*Cephalophus dorsalis*) and peter's duikers (*Cephalophus callipygus*). Two species belong to the Pongidae. These were the chimpanzee (*Pan troglodytes ellioti*) and Cross River gorilla (*Gorilla gorilla diehli*). The family Cercopithecinae was represented by the Mona monkey (*Cercopithecus mona*) and the Suidae family was represented by the red river hog (*Potamochoerus porcus*). The mean encounter rate for all large mammals' signs was 0.25 signs per km. However, encounter rates for chimpanzees (1.26) and the Cross River gorilla (0.31) were relatively high (Table 2.1).

Table 2.1: Encounter rate of large mammal species identified in Lebialem-Mone Forest per kilometre

Species	Encounter rate/km
Bay duiker	0.04
Buffalo	0.01
Chimpanzee	1.26
Cross River gorilla	0.31
Mona monkey	0.05
Peter's duiker	0.02
Red river hog	0.03
Min.	**0.01**
Max.	**1.26**
Mean	**0.25**

A partial distribution map for large mammals' signs revealed a relatively even distribution of large mammal signs across the study area (Figure 2.2). Field observations and spatial analysis also revealed that areas with high human activities coincided with areas with low rates of large mammals' signs. This finding suggests that human activities have affected the distribution of large mammals in the forest landscape. This aspect was noted and considered for further analysis during questionnaire and interview surveys reported in the subsequent section of this paper.

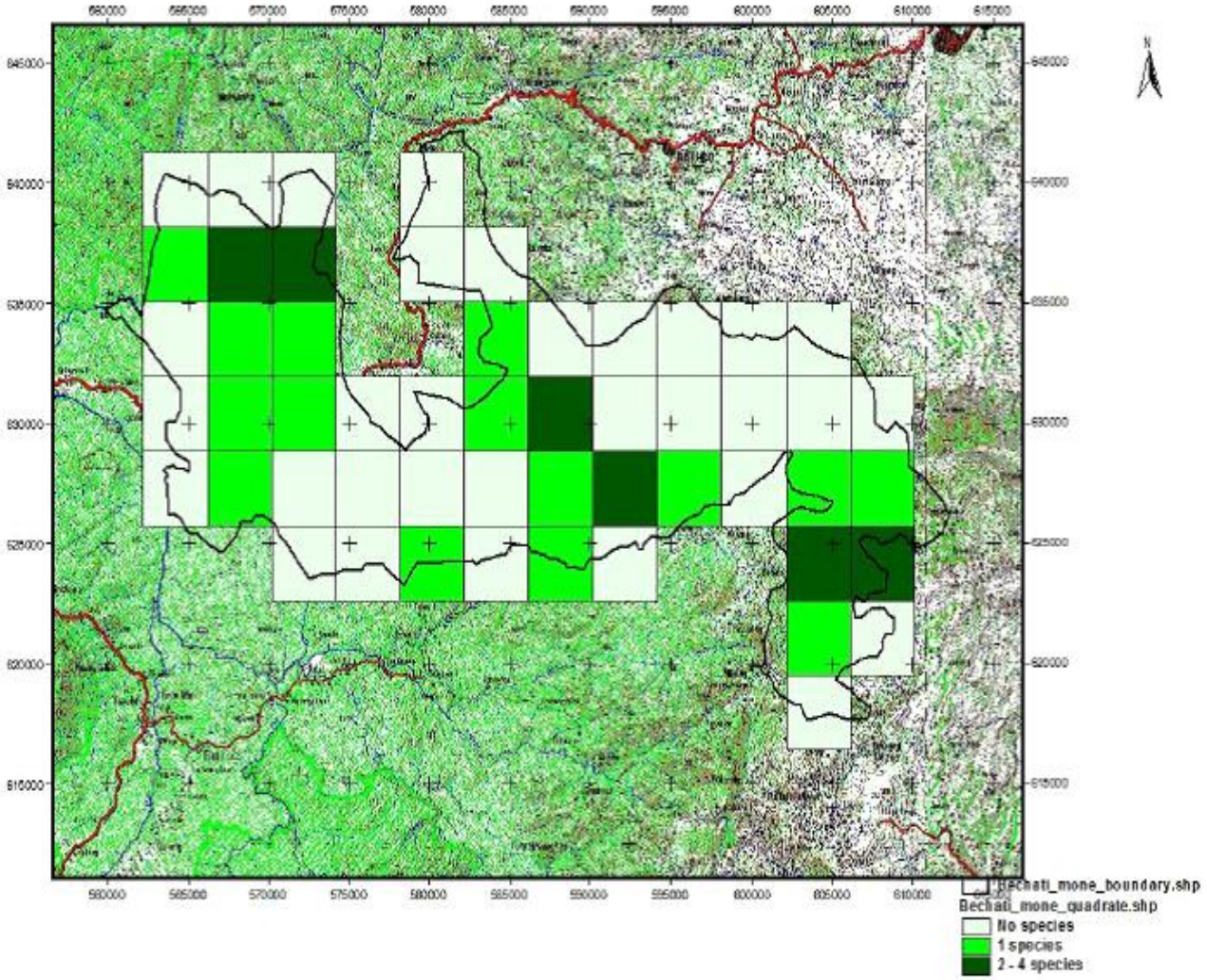

Figure 2.2: The spatial distribution of human activities in the Tofala-Mone Forest Landscape

4.2. ENCOUNTER RATE FOR HUMAN ACTIVITIES IN THE TMFC

The highest mean encounter rate for human activities in the study area was recorded for hunting (snare lines, gun shells, gun shots, bush huts, hunters' trails and cutlass cuts) with 1.9 signs per km. The spatial distribution map shows a high concentration in quadrants close to settlement areas. Data on agricultural activities suggest a mean encounter rate of 1.0 signs per km. Agricultural activities included farmland (both annual and perennial crops). All human activities were grouped together to determine the human activities hot spots (Figure 2.3). Analysis suggests a mean encounter rate of 1.05 signs per km for all human activities. The spatial distribution map (Figure 2.3) shows a high concentration area close to settlement areas.

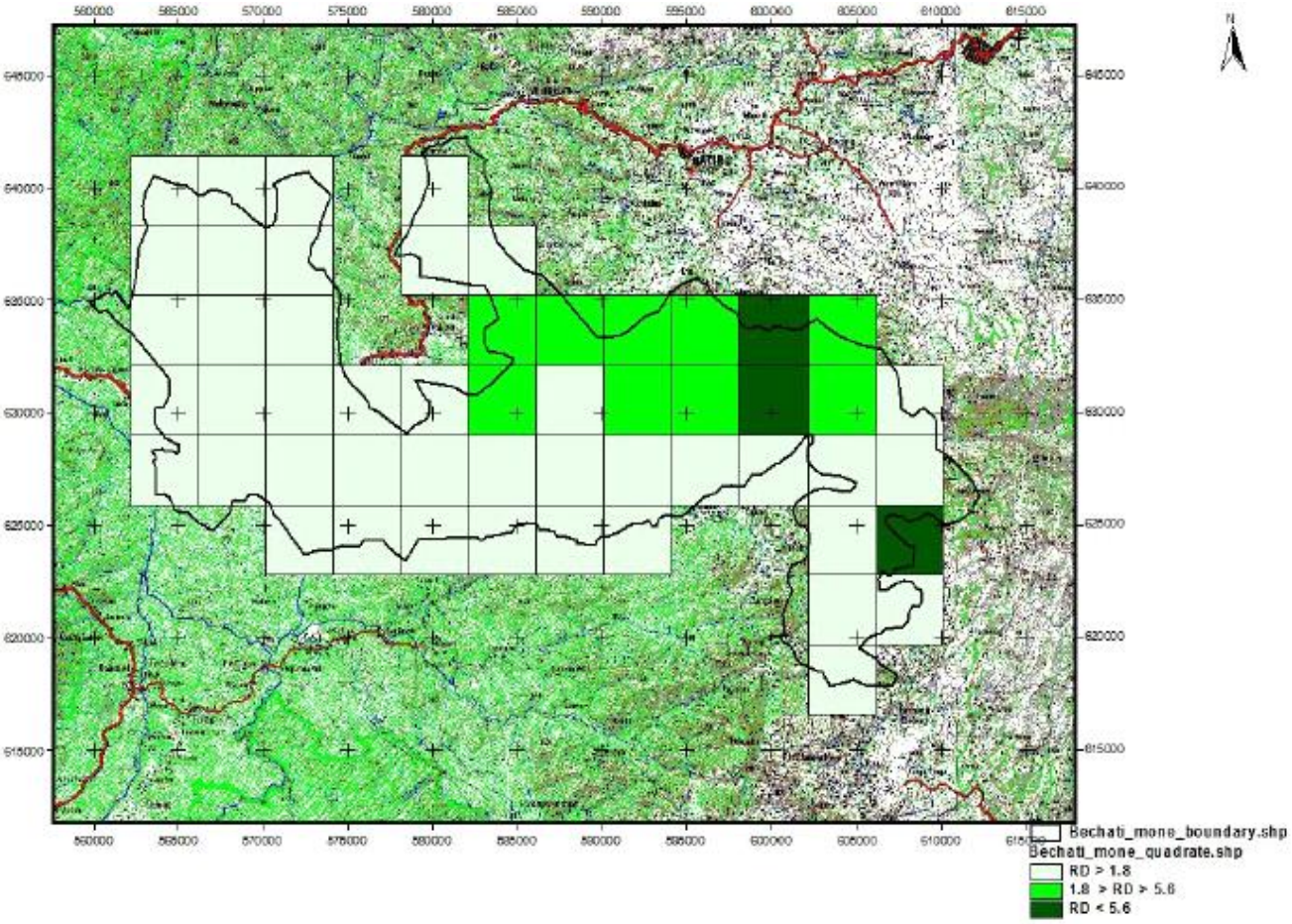

Figure 2.3: The spatial distribution of human activities in the Tofala-Mone Forest Corridor

4.3. FOREST-BASED HUMAN ACTIVITIES IN THE TOFALA-MONE FOREST CORRIDOR

About 86.0% (combination of all forest dependent activities) of livelihood is generated from forest resources. These activities include hunting and trapping, crop production, NTFP harvesting and harvesting of forest products for traditional medicine or for home usage. Most households depend directly on forest resources and forest land for income with very few alternatives available. Out of 273 individuals surveyed, 97.8% (n=267) practice farming, 49.1% (n=134) practice hunting/trapping, 24.5% (n=67) practice non-timber forest products harvesting and 1.8% (n=5) were involved in the collection of plants for traditional medicine (herbalists). The main farming methods included slash and burn farming and bush fallowing.

Farming was revealed to be very important to the livelihoods of local community members. It was also noted to be strongly tied to local culture and tradition. "…*my community relies mainly on farming activities to earn a living. Farming is an essential part of our lifestyle. Out of eight days in our traditional week most people spend seven days in their farmland and rest only on the traditional Sunday*…" noted a community head of Chinda. Field observations revealed that most local community members planned their farming activities base on traditional calendar days, which had eight days in a week (Agha, Abuh, Ngeh, Kelung, Wensah, Wenelah, Nkwayi and Mendii). One of the days (Ngeh) is designated as a traditional Sunday and community members are forbidden to perform any farming related activities on a traditional Sunday. A traditional Sunday is designated for social gathering and traditional rights observed bt the local community.

Farming plots were mainly inherited "…*the farm land I have was handed to me by my father. It is our custom that when a male child is of age, his father will offer him a piece of land to start farming and establish his own life*…" reported an interviewee in Bokwa community. In another interview session the interviewee recounted: "…*I lost my father when I was young, so when I attained the age to start my own farm land and family, my uncle offered me a piece of land to start my own farming activities*…" Interview results additionally revealed that community members could also acquire farm land through customary rights. One of the community heads interviewed recounted "…*it is our custom that we provide farm land to our community members that do not have the privilege to inherit land from their 'fore fathers' and to those who need more land for farming*. *This is one of the reasons why our community reserves some land known as community land. Community land is meant for both development activities that could benefit the community and for supplementary farm land for community members in time of need*…" Interview results and field observation also revealed that the lifestyle of most local people was centred around farming activities and forest related activities. It was observed that most community members were hardly at home during the day. Most of our field interviews during field work took place in the early hours of the morning or late hours of the evening. Most interviewees reported that they spend the

majority of their time during the day on their farming activities. "… *farm-work is what keeps most of us busy, especially the women. If you cannot go to work on the farm during the day you are considered to be lazy according to our custom. We always need to work to be able to provide enough food for our family*…" reported an interviewee of the Bakumba community.

The study revealed that the lifestyle of the local people is centred on the forest and therefore promotes the constant demand of land to increase farm size. This was also attributed to be one of the main causes of deforestation. The custom of the studied population obliges parents to provide farming land to their children. This pushes parents, especially those with large families to acquire as much farming land as possible to ensure sufficient farming land for their children. An interviewee in Egbemoh community recounted that "…*it is my duty as the head of this family to provide my children with farming land when they grow up, so if I am unable to secure enough farming land for them now, I will not be able to fulfil my obligation as a father*…" The results of the interviews also revealed that the ability to secure farming land was an important priority for community members. "…*we do not have any land to offer for conservation purposes. Our forest is too small and we need to safeguard the future farming need for our children*…" noted a key informant in Bokwa community. Community members were observed to place more value on farming compared to the preservation of forest for wildlife conservation. One of the interviewees in Egbemoh community recounted that "…*we know that wildlife conservation is important, however the forest is also very important to us because it is where we earn our living. We do not have jobs here in the villages. Our job is to go to the farm every day and to make sure that our households have enough food to eat*…"

The interview results above revealed that farming in the study area was a threat to forest conservation and hence wildlife conservation. In an in-depth interview with one of the interviewees in Etoko community, he revealed that he was in the process of cultivating more than two hectares of land in the forest for a cocoa plantation. He noted that he did not need any formal permit from either the local authority (traditional council) or the local government. "…*the land and the forest belong to us and we are supposed to use it for our wellbeing..." "…I do not think the local authority or the administration should have any problem with us using our forest. If they prevent us from working in our own land, we will have nowhere to go to and we may be forced to engage in other illegal activities..."* noted the interviewee. He also recounted that he chose to cultivate in the forest because it is fertile compared to secondary forest. Secondly, he noted that the forest is considered to be reserved land for farming for local community members in his community. In addition, he also noted that secondary forest and other pieces of land have previously been occupied by other community members and most often they are considered as entitlement for previous owners except in a case where the previous owner has abandoned the land for several years without any active usage of the land. He also noted that he is aware it might be more costly to

establish a piece of land in the forest compared to a previously cultivated area, however, most youth will opt for primary forest to avoid conflict with previous owners. Furthermore, he also recounted that the primary forest is also suitable for the establishment of new farm land because no legal processes are required to access it apart from your identity as an indigene of the local community concerned. Moreover, help to establish this land is readily available at no extra cost in the form of labour from friends and family members.

4.4. THE DISTRIBUTION OF FOREST-BASED ACTIVITIES IN THE TMFC

Farming (97.8%) was revealed as the most practiced forest-based activity by the studied population (Table 2.2). Results from the recce survey and in-depth interviews as reported above also provided supporting evidence that farming was a forest-based activity. The recce survey revealed an encounter rate of 1.0 agriculture signs per kilometre in the forest area surveyed. Interviews and field observation also revealed that the farming system (bush fallow/slash and burn) promoted deforestation. Primary forest was cut down every farming season (annually), while the previous cultivated sites were allowed to lie fallow.

Table 2.2: The distribution of forest-based activities

Activity	**Number (n) of individuals involved in activity**	**% of individuals involved in activity**
Farming	267	97.8
Hunting/trapping	134	49.1
Non-timber forest products collection	67	24.5
Herbalist	5	1.8
Others	28	10.3

Income from hunting was revealed as the main source of income[2] from forest-based activities (26.7%; n=77). More than 80% of the harvest from hunting was sold for income. This was followed by income from farming (17.6%; n=48). Although income from farming was not listed as the main source of income for most interviewees, it was revealed to constitute an indispensable and important aspect of their livelihood. Apart from cash crops (cocoa and palms), interviewees reported that they consumed more than 90% of their farm produce at the household level. "*…the main reason why we practice farming is to provide food for our*

[2] Income as used in this study refers to monetary income.

households. You will hardly find a farmer who is farming mainly for income generation purpose except in the case of cash crops like cocoa and palm oil production …" "*…however, we sell excess of our farm produce at the local market mainly to support other household needs, which include other food items like rice and fish which we do not cultivate in our community. The sales also help us to purchase farming tools*…" noted an interviewee in Tafu community. It was also revealed that family members and friends who live and have jobs in the city and abroad play a major role in subsidizing local people's household income in applicable cases. "*…all the food that is harvested in the farm are consumed by the household. If we need money for other things my son who lives in the city will send it to us*…" noted an interviewee in Kendem community. Another interviewee also told us that she has a daughter abroad who sends money to her on a regular basis to support her entire household needs. She explained that the money is used to pay school fees for her younger children, support other family members in need, buy other household food needs, buy medication and support other social needs. Apart from forest-based activities, a minority of community members were also involved in small businesses, worked as civil servants, or were employed by the private sector.

4.5. HUNTING/TRAPPING (BUSHMEAT HARVESTING) PRACTICES IN THE TOFALA MONE FOREST CORRIDOR

In order to evaluate the impact of income from the forest on the livelihood of the studied population, a detailed analysis of hunting and trapping as a forest activity providing income to local community members was carried out. A follow-up interview was conducted with interviewees (n=73) whose demographic information revealed they were hunters or trappers. The interview was aimed at soliciting information on harvesting techniques, tools, types of animals harvested, reasons for harvesting and the returns they made from harvesting wildlife. The majority of the bushmeat harvesters were between the age range of 35-54 (Table 2.3). Bushmeat harvesters were revealed to use either gun only (hunters), trap only (trapper) or both guns and traps (hunters/trappers).

The interviewees (n=73) were exclusively male. None of them was reported to have a valid hunting permit. Six hunters declared that they once had hunting permits but never renewed them again because they did not see any relevance in renewing them. "*…I did not see any need to renew my hunting permit because others who did not bother to obtain their hunting permit could still carry on with their hunting activities without the permit. I therefore saw the process of obtaining a permit as needless*…" noted one of the interviewees in Ebangabi community. It was also revealed that although hunters and trappers were exclusively male, women played a key role in promoting bushmeat harvesting. Women acted as marketers or vendors of bushmeat. "*…my wife assists me in marketing the bushmeat. She*

knows the people who are interested in buying. When bushmeat is available she will make sure she contacts them for supplies. In some cases, I received the command from the customer before going to hunt…" recounted an interviewee Bakumba community.

Table 2.3: The distribution of bushmeat harvested and their age range in the TFMC

Variable	Distribution	Percentage (%)	Sample (n)
Category of bushmeat harvesters	Hunters	31.5	23
	Trappers	37	27
	Hunters/trappers	31.5	23
Age distribution of harvesters	15-34	27.4	20
	35-54	42.5	31
	>55	30.1	22

Harvesters between the age of 35-54 were recorded to represent most of the hunting (42.5%, n=31). Trappers were almost equally distributed across the three age groups. Hunters/trappers were more represented in age group 15-34 (27.4%, n=20). The majority of harvesters (80.8%, n=59) were indigenes of the study area, while the rest were migrants from nearby villages. Bushmeat harvesting was revealed to be mainly an individual effort (82.2%, n=60). However, a few individuals (17.8%, n=13) practiced group hunting with group sizes ranging between 3 and 4 individuals. Bushmeat harvesting was practiced throughout the year. Harvesting was revealed to be intensified in some months compared to others. Hunters attested that they harvested more between the months of October and February and trappers attested that they harvested more between the months of June and September.

4.5.1. BUSHMEAT HARVESTING TECHNIQUES

Bushmeat harvesting techniques (Figure 2.4) were identified to include tracking (using wildlife trails), active searching of animals, waiting (at feeding/drinking sites, tracks and sleeping spots of wildlife), calling, baiting, remote hunting, hunting with dogs, and trapping (line trapping and pit fall trapping). The harvesting techniques varied according to the harvester. Hunters mainly use the active search technique, most often with dogs, and waiting and calling. Trappers use mainly baits, trails and pits.

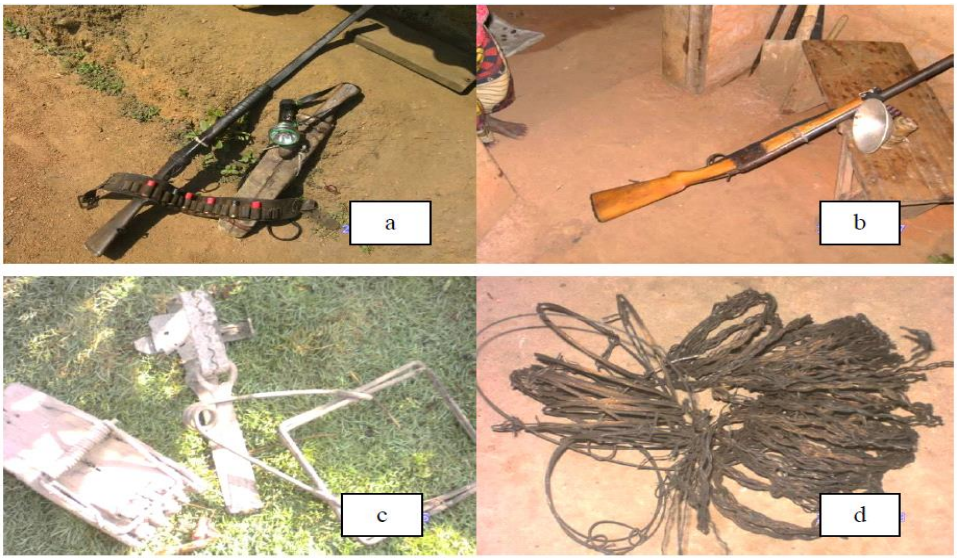

Figure 2.4: Distribution of harvesters across harvesting method

4.5.2. HARVESTING TOOLS

Harvesting tools included wire snares, metal traps, short guns (den guns and double barrels, most of which were locally made), flashlights (which ranged from normal torch lights to miners' lights), cutlasses, stones and sticks (Figure 2.5). Choice of a particular toola was strongly determined by affordability or cost (Table 2.3), availability, efficiency, ability to use the tool and efficiency of tool for self-defence or protection.

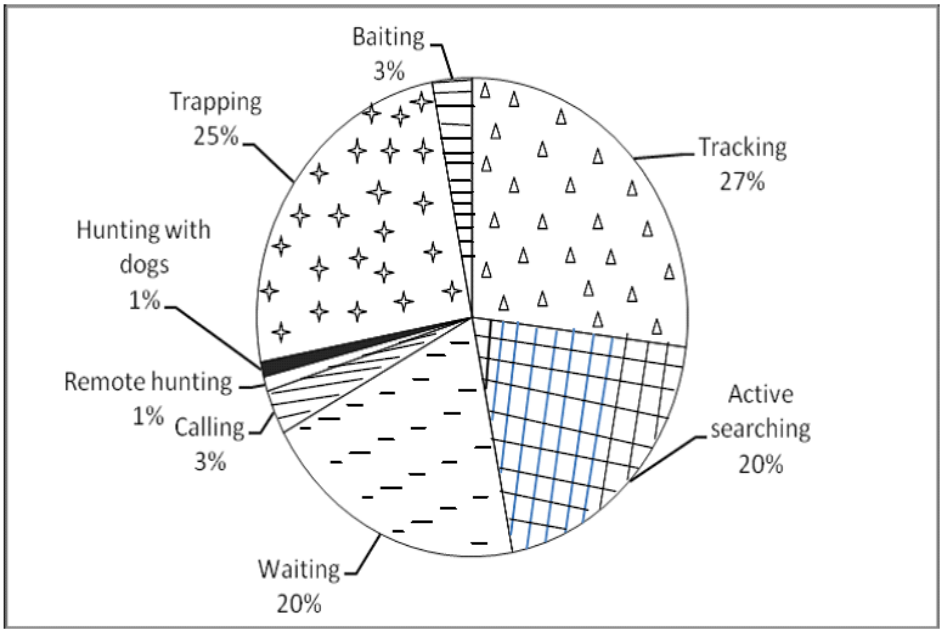

Figure 2.5: Bushmeat harvesting tool used in the TMFC

*a. Locally made gun, cartridge belt, cutlass and torch; *b. Hunting gun and flashlight (miner's light); *c. Metal and mouse traps; *d. Wire snares prepared for setting in the field

4.5.3. TYPE OF BUSHMEAT HARVESTED IN THE TOFALA MONE FOREST CORRIDOR

Bustmeat harvested included mammals, reptiles and birds. The top fifteen harvested species out of the 34 recorded are listed in descending order of frequency (Table 2.4). The most harvested species was reported to be the African brush-tailed porcupine as reported by 97.3% of interviewees. The least harvested species was reported to be the chimpanzee. Just one hunter admitted to have hunted a chimpanzee. No hunter admitted to have hunted a gorilla.

Table 2.4: Species and common names of bushmeat harvested by hunters and trappers

Species	Common name	Vernacular name
Atherurus africanus	African brush-tailed porcupine	Chucku-chucku beef
Cephalophus monticola	Blue duiker	Frutambo
Cephalophus dorsalis, C. ogilbyi	Bay duiker, Ogilby's duiker	Red deer
Potamochoerus porcus	Red river hog	Bush pig
Cricetomys emini	Giant pouched rat	Rat mole

Phataginus tricuspis	Tree pangolin	Catter beef
Thryonomys swinderianus	Cane rat	Cutting grass
Cercopithecus spp.	Guenons	Monkey
Varanus niloticus	Nile monitor	
Hyemoschus aquaticus	Water chevrotain	Water beef
Naja spp.	Cobra	Black snake
Mandrillus leucophaeus	Drill	Shumbo
Protoxerus stangeri, Anomalurus beecrofti	Giant forest squirrel, Beecroft-flying squirrel	Squirrel
Python sebae	Python	Mboma

The average number of animals caught per week was recorded to be 16.0 ± 2.0 per harvester. There was no significant difference amongst the average number of animals caught per week amongst hunters (16 .0 ± 3.0), trappers (15 .0 ± 3.0) and hunters/trappers (16.0 ± 3.0); Kruskal Wallis Test: P>0.775. Equally, there was no significant difference between the average number of animals caught per week per harvester in the interior and the periphery of the study area (Mann-Whitney U: P>0.838). This indicated that both categories had equal impact on wildlife harvesting and equal capabilities to explore wildlife.

4.5.4. FACTORS INFLUENCING BUSHMEAT EXPLOITATION

Bushmeat harvesting as a means for income (67.1%, n=49) was the most stated reason for harvesting wildlife. *"…it is my only source of money and it is a profitable business..."* stated one of the interviewees in Chinda community. Most of the harvesters (76.7%, n=56) sold about 80% of the harvest. The rest was consumed at the household level. This was followed by harvesting for food (for the household 57.5 %, n=42). "*…it is expensive to buy fish and meat from the market. By practicing trapping, I can easily have sufficient meat to support the diet of my household*…" noted an interviewee in Bokwa community. Harvesting to protect animals from destroying crops (9.6%, n=7) was stated as the third reason. "…*I set traps only around my farm to prevent animals from coming into my farm and eating my crops*…" noted an interviewee in Tafu community. In a follow-up question on how rewarding setting traps for this reason is to farmers, one of the interviewees in Tafu community noted that "…*it is rewarding to me because apart from preventing the animal from destroying my crops, I am also able to sell the catch and make money as well as provide meat for my household*…"

The mean income range generated per week from bushment sales was revealed to be 51,253 ± 7,914 XAF ($102 ±15) per harvester. There was no significant variation of income between harvesters in the interior and periphery of the study area (Mann Whitney U: P>0.133). Reasons reported by interviewees for hunting included to protect local inhabitants from wildlife (8.2%, n=6), unemployment (6.8%, n=5), inheritance/custom (4.1%, n=3) and hobby (2.7%, n=2). In addition, the low cost of harvesting tools and availability and vulnerability of species to fall prey to hunters and trappers were also noted as contributing factors to bushmeat harvesting.

4.5.5. EFFECTS OF BUSHMEAT HARVESTING ON WILDLIFE CONSERVATION IN TOFALA MONE FOREST CORRIDOR

The increase in the number of harvesters, demand for bushmeat, profit margin, population increase, harvester experience and protection of farmlands were considered by bushmeat harvesters to be the major causes of the reduction in wildlife population. The majority of the interviewees (86.3%; n=63) admitted that there has been a substantial reduction in the amount of bushmeat harvested per hunting trip. In support of this, 97.3% (n=71) admitted that some of the wildlife species that were being harvested were becoming increasingly scarce to find. Questionnaire and in-depth interview data revealed that the average catch time per prey has notably increased compared to five years back. "…*I can say that it is becoming very hard to find a prey in a trap compared to the past few years. Before, we could go to the forest daily to check if the traps put in place had caught preys. Now the average check time is about once in three days during the raining reason and about once in four days during the dry season*…" narrated an interviewee in Kendem community. It was established that the difference in the check period for traps in the dry and the rainy season was linked to the time the prey could stay in the trap within consumable limits.

In addition to the above factors, accessibility of the forest area was also revealed as a major contributing factor to wildlife exploitation. The majority of interviewees 72.6% (n=53) attested that one of the major reasons they consider hunting to be a promising livelihood activity is because it is easy to access the tools and the forest. "…*it does not take much to be a hunter. What you need is just little money and someone to volunteer to teach you on the techniques of hunting. Most of us learned it from our parents, so it is part of our custom*…" recounted an interviewee in Etoko community. Field observations through the recce survey revealed that the harvesting pressure was higher in the lower altitude forest area compared to the higher altitude area. This observation also corresponds with the claims of 58.9% (n=43) of interviewees that they mainly hunt in the lower altitude part due to accessibility. However, 32.9% (n=24) of the interviewees also harvested bushmeat in the high altitude part. There was no significant variation amongst categories of harvesters (χ^2=3.713; df=4; P=0.446) in

preferred altitude. Interview reports revealed that the reason why hunting pressures are higher in the lower altitude of the forest is mainly because of the easier accessibility. "…*most often we hunt during the night and because of the rocky nature of the forest area, especially in the high altitude, it is much easier to remain in the lower altitude. In addition, animals most often need to come to the low altitude area because of the abundance of water and food compared to the high altitude…"* noted a hunter in Bokwa community.

4.6. EFFECT OF AGRICULTURAL ACTIVITIES ON WILDLIFE CONSERVATION

Agriculture activities were revealed to have promoted wildlife exploitation: interviewees reported that although farming is the main livelihood activity, farmers claimed they are often forced to hunt in order to protect their crops from being destroyed by wildlife. During the recce survey, traps were recorded around most farmland, especially farmlands that were established in the interior part of the forest. Agricultural activities' data suggested a mean encounter rate of about 1.0 sign per km in the forest habitat. Most farmlands in the interior part of the forest were also observed to have huts and most of these huts showed evidence of hunting signs (gun shells and animal trophies). Seven areas of farmland were recorded in the interior of the forest during the recce survey.

In-depth interviews on the reasons why interviewees would prefer farming in the interior part of the forest given the threats from and competition for wildlife they might face revealed a couple of reasons:

- "…*I prefer to travel several kilometres to establish a farmland in the forest because of the numerous benefits involved. Firstly, it keeps me busy so that I do not have to loiter around the community doing less; secondly, when I am walking to my farm I have the possibility to harvest other forest products which I can use as food or as medicine. I also set traps along the path to my farm to harvest bushmeat, which is an important source of protein to us*…"

- "…*I spend most of my time in the forest because my main activity is hunting. It is easy for me to establish a farmland in the forest because is it my home. Hunting is mostly done in the night, so during the day, I have the opportunity to do some work in my farm*…"

- "…*The forest habitat is very fertile and the harvests I will get from setting up a piece of farmland in the forest exceeds what I will get by farming on a piece of land that has previously been used for farming*..."

- "… *I love the forest; it would be very difficult to accept that I can do anything that could make me happy out of the forest setting at this age*…"

4.7. ACTORS' PERCEPTIONS AND FRAMING OF CONSERVATION AND LOCAL LIVELIHOOD CHALLENGES

Using in-depth interviews, the opinions of different actors concerning the relationship between wildlife conservation and rural livelihood were sampled. Actors were then grouped into different categories (Table 2.5). Local government staff were interviewees who were working with the local government and involved in one way or the other in forest management in the THWS. This included staff from the Ministry of Forestry and Wildlife and staff from the Ministry of Territorial Administration. Staff from the local NGO were interviewees directly involved in forest management issues in the THWS. Chiefs were head of customary structures in the local communities. Meanwhile farmers, hunters and youths were interviewees involved in forest resource usage. The categories of interviewees were chosen to target individuals directly involved in decision making and those directly affected by the decision made. This categorisation also enabled the study to provide an appraisal of how the different actors holding different roles in forest resource management responded to wildlife conservation and livelihood challenges in the THWS. Keywords were selected from actors' opinions to reflect a common framing on conservation and livelihood issues. The summary of actors' narratives on conservation and livelihood challenges revealed that conflicts of interest existed among actors.

Table 2.5: Summary of actors' framing of conservation and local livelihood challenges[3]

Actors	Framing of conservation and local livelihood challenges
Local government staff	The livelihoods of the local community members need to be taken into account. We are always available to assist the NGO and the local community to find a common ground for cooperation.
NGO staff	The landscape is home to some of the last species of the great apes amongst other important wildlife. Creating a protected area across this landscape is very important for the survival of these great apes. We are aware that this might pose a major challenge to the livelihoods of the local community members. We are working with the local people and the government to sort out sustainable alternative livelihood options to forest activities.

[3] Although the different actors responded in different ways their lines of narration were found to cut across the key ideas summarised above.

Farmers	The forest is the only source of our livelihood. We have been depending on this forest for many years. Our rights and future livelihoods are threatened by the concept of conservation. We do not see the possibilities of the government or NGO providing us with alternative livelihoods that will equate to the benefits we get from the forest.
Hunters	There is no way we can stop hunting completely. The income we generate from hunting is used to support our household and to sponsor our children in school. We do not yet see any viable alternative that can replace our interests in the forest.
Youths	Many of us who do not have the opportunity to continue with school rely on the forest for our livelihood. We are aware that conservation is important but if the conservation goals are to take our forest away without providing alternatives, it will affect the entire community.
Chiefs	We have been working with the local government and the NGO to see how these wildlife conservation issues can work. As of now, there are no benefits that can encourage us to give our full support. We all rely on this forest for livelihoods and other cultural benefits which include ancestral worship and secret places. We need assurance beyond word of mouth to be able to give our full support to conservation.
Elites (As used in this study elites were outstanding and influential community members in terms of education, financial capacity or 'power')	The agenda of conservation as pursued by the NGOs and local government has less meaning to our people. In particular, NGOs receive a lot of money for conservation but the local community members are not benefiting from this money as well. We acknowledge the importance of wildlife conservation. However, we do not believe that wildlife conservation can succeed without adequate consideration of local livelihoods.

The local government was observed to take a more passive role in conflict management between livelihood and wildlife conservation in the study area. In an in depth interview with one of the local government officials; he noted that "…*we are often invited by the non-profit organization working with the local people to come in and intervene whenever there are*

challenges. We are aware that we ought to do more to preserve our environment and to give the local people a better living. However, due to the limited capability, it is difficult to achieve this…" On the other hand, the non-profit organization working in the field seems to be fully aware of the challenges involved in the conservation of wildlife in the study area (the habitat is an important asset for the livelihood of the local people). However, the non-profit organisation was observed to be more eco-centric. "…*it is very important that we save the last species of gorilla in the landscape even if this conflicts with local livelihood needs. If these gorillas are extinct, we can no longer find them and this is detrimental to the ecosystem*…" recounted a member of staff working for wildlife conservation in the project area.

On the other hand, local community members' (forest users) narrations suggested that they had very little hopes regarding the promises of conservation for their livelihoods and believed the forest should be bought off community members for conservation to be effective:

- "…*if they really want the forest, they should buy it from us*…"
- "… *It is not possible for me to leave the forest because of conservation. I can reduce the rate at which I depend on the forest if I am compensated for that. The forest is already part of me and I will feel sick if I do not go to the forest to hunt or for other reasons*…"
- "… *Our life is built on the forest. Our ancestors lived there for hundreds of years before we relocated to this place. Going to the forest is like reconnecting to the past and to our ancestors...*"

Chiefs and elites' narrations on wildlife and local livelihood needs were observed to be more technical in their nature.

- "*.. If conservation must work, then the NGOs and the government must look for ways to resolve the local people's livelihood challenges*…" (noted the chief of Tafu community).

- "… *There is a lot of money in wildlife conservation and I think a fair share should be invested in community development to enable the local people to support conservation initiatives*…" (noted an elite from Etoko community).

5. DISCUSSION

5.1. ANALYSING THE LINKS BETWEEN FOREST AND LIVELIHOOD

The results of the study revealed that the main forest-based human activities included agricultural activities and bushmeat harvesting. Farming was recorded as one of the main causes of continuous forest encroachments. This finding reaffirms the study of Dunn et al. (2014) which revealed that agricultural activities is one of the main causes of forest encroachment and fragmentation in the Cross River Gorilla Landscape in the Cameroon-Nigeria border. Similarly, agricultural activities have also been revealed to frequently cause changes in land-use which in turn affect habitat quality and availability for a range of wildlife species (Malawska et al. 2014). Bushmeat harvesting was also revealed as a threat to species diversity and abundance. The bushmeat market was a potential driver for hunting/trapping. Hunting signs had the highest encounter rate (1.9 signs per km) among the human activities evaluated. These results agreed with the finding that the bushmeat market in West and Central Africa contributes substantially to local people's household income (Willcox and Nambu 2007). In addition, this study also revealed that although hunting was practiced exclusively by men, women also assisted in the marketing of bushmeat. This finding was in conformity with another study in Lebialem division, which revealed that women constitute a significant labour force in the bushmeat trade industry (Wright and Priston 2010). This aligned with the arguments that efforts to address bushmeat harvesting should consider that it is a potential and in some cases the main source of food and income for many households living adjacent to forest areas (Duffy et al. 2016). In addition, the fact that farmers were also potential hunters contributes to the challenges of mapping the actors contributing to forest-based human activities.

The simplistic assumptions that inform the design of policy instruments addressing human-wildlife conflicts are argued to be linked to the stakeholders' ability to establish a detailed and complete analysis of the scenario; considering both the socio-cultural and economic dimensions of the challenges (Khumalo and Yung 2015). In line with the above argument, the results in the study suggested that the narrations of actors intervening in human-wildlife conflicts did not adequately capture the details in the socio-cultural dimensions of reconciling farming conflicts between human activities and wildlife conservation objectives. The narrations of actors focused on the provision of alternative livelihoods that might improve their standard of living as the solution to resolving the conflict between forest-based human activities and wildlife conservation. Interview results suggested that, apart from the forest serving as a source of livelihood, the local population had developed special connections, habits and a lifestyle relating to the forest over the years. This

makes it too complex for livelihood and forest conservation issues to be addressed by simply providing alternative livelihoods options to the local people.

Bushmeat harvesting was revealed to be an all year round activity with a peak period in the months of June, July and September for trapping and October – February for hunting. This conforms with the argument that vulnerability of wildlife to hunting increases when there is high availability of fruits (June to September) and when water and food availability shift to the low altitude area (Nasi et al. 2011). Hunting was revealed to have a strong impact on wildlife conservation: 86.3% (n=63) of interviewees admitted that there has been a drastic reduction in the amount of bushmeat harvested per hunting trip and that some of the wildlife species were becoming scarcer. Furthermore, no bushmeat harvesters were observed to practice strictly traditional hunting (sticks and stones). The use of modern arms in bushmeat harvesting was observed to increase catch and eventually has affected the wildlife abundance in the TMFC. This finding also corresponds with the study of Willcox and Nambu (2007), which argued that there has been an increase in the use of modern tools in hunting. This study argues that subsistence hunting is rapidly giving way to commercial hunting and measures need to be taken if biodiversity is to be preserved. Bushmeat exploitation was therefore observed as a severe threat to wildlife conservation.

5.2. ANALYSING WILDLIFE CONSERVATION AND LIVELIHOODS IN TOFALA MONE FOREST CORRIDOR

The dynamic and complex relationship between wildlife conservation and the livelihoods of the local people is revealed by the results of this study in different dimensions. The methods of harvesting bushmeat were observed to have evolved over time from the use of traditional tools to the use of modern tools. These results also revealed that wildlife conservation was observed by the local people as a threat to livelihoods. This implies that if conservation policies are designed to prohibit hunting or farming without appropriate assessment of alternatives they are unlikely to lead to sustainable forest management. On the other hand, development interventions that could improve the livelihoods of the local people and reduce forest encroachment presented both advantages and disadvantages. The livelihoods of the local people were mainly agriculture-based and forest-based. Supporting innovations that could improve livelihood should be geared toward increasing agricultural input and innovations. However, although this might lead to an increase in agricultural output and standard of living, it could also empower local people to acquire more income and 'power' in order to continue the expansion of farmland in the forest habitat. The results also revealed that forest-based activities were practiced at times not because of the reward from the activity but because of cultural attachment and the satisfaction derived by engaging in

the activity. This aligns with the argument that the workability of any development intervention should always be assessed in order to uncover the specific needs of the stakeholders prior to implementation (Leach et al. 2010). Notwithstanding, this study argues that stakeholders needs regularly change in relation to the challenges they are faced with. This also implies that the workability of development interventions is not fixed and should be regularly revisited as the implementation progresses.

5.3. ANALYSING THE SUSTAINABILITY OF LIVELIHOODS IN THE TOFALA MONE FOREST CORRIDOR

It is argued that due to the complex context of conservation and local livelihood interactions, a sustainable system would consist not only of measures to mitigate the immediate challenges presented by forest dwellers but also open up to respond adaptively to emergent challenges, resist shocks in a more responsive fashion (resilience) and at the same time, identify, track and respond to long-term shifts that may occur in the system (durability and robustness) (Ostrom and Cox 2010). In response to the latter argument this study argues that the goal of achieving sustainability in forest-based human activities and livelihoods should be driven by the ability to comprehensively map out both the visible and hidden impacts of human-wildlife conflicts. This requires adequately modelling the susceptibility of every impact and linking it to resilience ability of the intervention developed to address the impact.

In addition, it is equally important to consider the durability and robustness of interventions. It is argued that meaningful collaboration and participation by actors could minimize the implementation cost and at the same time lead to sustainability (Benson et al. 2013). However, it is also argued that meaningful collaboration should take into consideration the aspect of social justice, which is rooted in the concept of human rights and equality (Shoreman-Ouimet and Kopnina 2015). In line with these latter arguments this study argues that participatory planning and implementation of wildlife conservation projects could bring about meaningful collaboration between the local people and the wildlife conservation institutions. The results of this study suggested that collaboration between the local people and the wildlife conservation institutions was lost. "….*If conservation must work, the NGOs and the government must look for ways to resolve the local people's livelihood challenges*..." This revealed that the local people were not adequately considered in the conservation planning process. Thus, the local people had the notion that the conservation project was for the NGOs and the government and consequently expected them to be responsible for reconciling the conflicts between the local people's livelihood and wildlife conservation. This study argues that if the local people are adequately included in conservation planning, they

could be more supportive and proactive in contributing positively to conservation challenges. In the same way, the NGOs and the government also stand to benefit from customary practices that have promoted forest and wildlife conservation over time, and should empower the local people to sustain these practices while they continuously empower them with more management skills and build their capacity regarding sustainable forest practices. These practices could be an entry point in negotiating wildlife conservation strategies and pave the way for conservation practitioners to continuously empower local people with more management skills and build more capacity within sustainable forest practice.

6. CONCLUSIONS

This study reveals that there is increased scarcity of wildlife in the study area. This was supported by the views of the interviewees who consider that wildlife has become scarcer, and additionally the fact that the average time per catch has increased compared to the past. This was also attributed to an increase in human activities as hunting pressure was higher in the low land areas as a result of easy accessibility for humans. Agriculture activities also constituted a major threat to wildlife conservation. Local people preferred farming in the forest because of cultural attachments, the high fertility of the forest in relation to secondary forest and other benefits from forest resources.

The study also revealed that the intervention of stakeholders to regulate human-wildlife conflicts did not yield the require outcome. Local people believed that the value of the resources they harvest from the forest could not be compensated for by the available livelihood opportunities offered by the non-profit organisation. Adding to this, some local people also argued that forest-based activities play an important role in their lifestyle, making it difficult for them to completely turn their attention from the forest. In line with the latter results this study argues that human-wildlife conflicts are usually underlined by multiple factors that cannot immediately be resolved by the implementation of a single/simple strategy. Interventions aimed toward mitigating the effect of human activities on forest resources could benefit from a critical evaluation of possible solutions vis-à-vis their outcome in respect to the socioeconomic and sociocultural characteristics of the targeted community. In addition, this study also argues that if the local people are adequately included in conservation planning, they could be more supportive and proactive in supporting sustainable forest management. Conservation practitioners could benefit from customary practices that have promoted forest and wildlife conservation over time. These practices could be an entry point in negotiating wildlife conservation strategies and pave a way for conservation practitioners to continuously empower local people with more management skills and build more capacity within sustainable forest practice.

Notwithstanding, this study also acknowledged that although a mixed methodology was adopted for the study (combination of field observation and interviews) in order to allow a detailed empirical analysis of human activities and wildlife conservation and how they affected sustainable forest management, the duration for which the study was conducted is relatively short to support concrete conclusions for long term solutions to sustainable forest management. There is therefore a need to continuously evaluate and monitor the conflicts between human activities and wildlife conservation in the study area over a longer period in order to achieve sustainable forest management strategies.

REFERENCES

Ajabji, S., Tendem, P. & Nkembi, L., 2008. *A socio-economic report for the Bechati-Fossimondi-Besali forest adjacent villages. Buea, Cameroon*, Buea, Cameroon.

Arts, B. & de Koning, J., 2017. Community Forest Management: An Assessment and Explanation of its Performance Through QCA. *World Development*, 96, pp.315–325. Available at: http://dx.doi.org/10.1016/j.worlddev.2017.03.014.

Belcher, B., Achdiawan, R. & Dewi, S., 2015. Forest-Based Livelihoods Strategies Conditioned by Market Remoteness and Forest Proximity in Jharkhand, India. *World Development*, 66, pp.269–279. Available at: http://dx.doi.org/10.1016/j.worlddev.2014.08.023.

Benson, D. et al., 2013. Collaborative environmental governance: Are watershed partnerships swimming or are they sinking? *Land Use Policy*, 30(1), pp.748–757. Available at: http://dx.doi.org/10.1016/j.landusepol.2012.05.016.

Berkes, F., 2007. Community-based conservation in a globalized world. *Proceedings of the National Academy of Sciences of the United States of America*, 104(39), pp.15188–93. Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2000555&tool=pmcentrez&rendertype=abstract.

Berkes, F., 2009. Community conserved areas: policy issues in historic and contemporary context. *Conservation Letters*, 2(1), pp.20–25. Available at: http://doi.wiley.com/10.1111/j.1755-263X.2008.00040.x [Accessed April 24, 2012].

Berkes, F., Kofinas, G.P. & Chapin, F.S., 2009. Conservation, community, and livelihoods: sustaining, renewing, and adapting cultural connections to the land C. Folke, G. P. Kofinas, & F. S. Chapin, III, eds. *Principles of Ecosystem Stewardship*, 2, pp.129–147. Available at: http://www.springerlink.com/index/10.1007/978-0-387-73033-2 [Accessed June 21, 2011].

Bond, J., 2014. *A human security perspective on natural resource conflict and rural development*, Copenhagen. Available at: www.ifro.ku.dk.

Büscher, B., 2014. Selling Success: Constructing Value in Conservation and Development. *World Development*, 57, pp.79–90.

Butchart, S.H.M. et al., 2010. Global biodiversity: indicators of recent declines. *Science*, 328, pp.1164–8. Available at: http://www.ncbi.nlm.nih.gov/pubmed/20430971 [Accessed December 11, 2013].

Carney, D., 1999. *Approaches to Sustainable Livelihoods for the Rural Poor*, London, UK.

Chambers, R. & Conway, G.R., 1991. *Sustainable rural livelihoods: practical concepts for the 21st Century*,

Djeukam, R., 2007. *The Wildlife law as a tool for protecting threatened species in Cameroon*,

Dokken, T. & Angelsen, A., 2015. *Forest reliance across poverty groups in Tanzania Forest reliance across poverty groups in Tanzania*, Ås ,Norway.

Dressler, W. et al., 2010. From hope to crisis and back again? A critical history of the global CBNRM narrative. *Environmental Conservation*, 37(1), pp.5–15. Available at: http://www.journals.cambridge.org/abstract_S0376892910000044 [Accessed March 6, 2012].

Duffy, R. et al., 2016. Toward a new understanding of the links between poverty and illegal

wildlife hunting. *Conservation Biology*, 30(1), pp.14–22.
Dunn, A. et al., 2014. *Revised Regional Action Plan for the Conservation of the Cross River Gorilla (Gorilla gorilla diehli) 2014–2019*, New York, NY, USA.: 2014 IUCN/SSC Primate Specialist Group and Wildlife Conservation Society.
Fankhauser, S. et al., 2013. Who will win the green race? In search of environmental competitiveness and innovation. *Global Environmental Change*, 23(5), pp.902–913.
Farrington, J. et al., 1999. *Sustainable livelihoods in practice: early applications of concepts in rural areas*, London, UK.
Garcia, C. a et al., 2010. Biodiversity conservation in agricultural landscapes: challenges and opportunities of coffee agroforests in the Western Ghats, India. *Conservation biology : the journal of the Society for Conservation Biology*, 24(2), pp.479–88. Available at: http://www.ncbi.nlm.nih.gov/pubmed/20028413 [Accessed July 28, 2011].
Guariguata, M.R. et al., 2010. Compatibility of timber and non-timber forest product management in natural tropical forests: Perspectives, challenges, and opportunities. *Forest Ecology and Management*, 259(3), pp.237–245. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0378112709008342 [Accessed August 28, 2011].
de Haan, L. & Zoomers, A., 2005. Exploring the Frontier of Livelihoods Research. *Development and Change*, 36(1), pp.27–47. Available at: http://doi.wiley.com/10.1111/j.0012-155X.2005.00401.x.
Hilson, G. & Garforth, C., 2012. “Agricultural Poverty” and the Expansion of Artisanal Mining in Sub-Saharan Africa: Experiences from Southwest Mali and Southeast Ghana. *Population Research and Policy Review*, 31(3), pp.435–464.
Khumalo, K.E. & Yung, L.A., 2015. Women, human-wildlife conflict, and CBNRM: Hidden impacts and vulnerabilities in Kwandu Conservancy, Namibia. *Conservation and Society*, 13(3), pp.232–243. Available at: http://www.scopus.com/inward/record.url?eid=2-s2.0-84948770747&partnerID=tZOtx3y1.
Lambin, E.F. & Meyfroidt, P., 2010. Land use transitions: Socio-ecological feedback versus socio-economic change. *Land Use Policy*, 27(2), pp.108–118.
Leach, M., Scoones, I. & Stirling, A., 2010. *Dynamic Sustainabilities: Technology, Environment, Social Justice*, Oxon; New York: Earthscan. Available at: http://books.google.be/books/about/Dynamic_Sustainabilities.html?id=28mrualqeXkC&pgis=1 [Accessed June 4, 2014].
Lin, P. & Chang, C., 2011. Towards sustainable community-based natural resource management in the indigenous Meqmegi community in Taiwan : Rethinking impacts of local participation. *Natural Resource Forum*, 35, pp.134–144.
Lotz, A. & Allen, C.R., 2013. Social-Ecological Predictors of Global Invasions and Extinctions. , 18(3).
Macdicken, K.G., 2015. Global Forest Resources Assessment 2015: What, why and how? *Forest Ecology and Management*, 352, pp.3–8. Available at: http://dx.doi.org/10.1016/j.foreco.2015.02.006.
Malawska, A., Topping, C.J. & Nielsen, H. ??rsted, 2014. Why do we need to integrate farmer decision making and wildlife models for policy evaluation? *Land Use Policy*, 38, pp.732–740. Available at: http://dx.doi.org/10.1016/j.landusepol.2013.10.025.

McShane, T.O. et al., 2011. Hard choices: Making trade-offs between biodiversity conservation and human well-being. *Biological Conservation*, 144(3), pp.966–972. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0006320710001849 [Accessed March 7, 2012].

Mgawe, P. et al., 2012. Factors affecting bushmeat consumption in the Katavi-Rukwa ecosystem of Tanzania. *Tropical Conservation Science*, 5(4), pp.446–462.

Morse, S. & Mcnamara, N., 2012. Trade-offs in the exploration of Sustainable Livelihoods: experience from a micro-credit intervention in Nigeria. *The Geographical Journal*, 178(2), pp.162–174. Available at: http://doi.wiley.com/10.1111/j.1475-4959.2011.00419.x [Accessed August 11, 2012].

Naeem, S., 2002. ECOSYSTEM CONSEQUENCES OF BIODIVERSITY LOSS : THE EVOLUTION OF A PARADIGM. *Ecological Society of America*, 83(6), pp.1537–1552.

Nasi, R., Taber, A. & Van Vliet, N., 2011. Empty forests , empty stomachs ? Bushmeat and livelihoods in the Congo and Amazon Basins. *International Forestry Review*, 13(3), pp.355–368.

Nkembi, L. & Muh, B., 2012. *Consolidating the Conservation of Cross River Gorillas (gorilla gorilla diehli) and Nigeria-Cameroon chimpanzees (P t ellioti) in the Lebialem-Mone Forest Landscape, Western Cameroon*, Buea.

Nkemnyi, M.F. et al., 2013. Making hard choices: balancing indigenous communities livelihood and Cross River gorilla conservation in the Lebialem–Mone Forest landscape, Cameroon. *Environ Dev Sustain*, 15, pp.841–857.

Nkemnyi, M.F. et al., 2012. The Cross River gorilla and large mammals species diversity in the in the Lebialem-Mone Forest Landscape, Cameroon. *Biodiversity and Ecological Sciences*, 2(2), pp.73–79.

Nkemnyi, M.F. et al., 2016. The influence of institutions on access to forest resources in Cameroon: The case of Tofala Hill Wildlife Sanctuary. *Journal for Nature Conservation*, 34, pp.42–50. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1617138116300772.

Nkemnyi, M.F., Koedam, N. & De Vreese, R., 2011. *Livelihood and Conservation: Reconciling Communities' Livelihood needs and Conservation Strategies in the Bechati forest area, Western Cameroon*, Saarbrücken, Germany: LAMBERT Academic Publishing.

Ochola, W., Sanginga, P.C. & Bekalo, I., 2010. *Managing natural resources for development in Africa: A resource book*, Nairobi, Kenya: International Institute of Rural Reconstruction (IIRR).

Ostrom, E. & Cox, M., 2010. Moving Beyong panaceas: a multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation*, 37(4), pp.451–463.

Oyono, P.R., Samba, S.K. & Biyong, M.B., 2012. Beyond the decade of policy and community euphoria: The state of livelihoods under new local rights to forest in rural Cameroon. *Conservation and Society*, 10(2), p.173. Available at: http://www.conservationandsociety.org/text.asp?2012/10/2/173/97489 [Accessed August 20, 2012].

Rands, M.R.W. et al., 2010. Biodiversity conservation: challenges beyond 2010. *Science*, 329, pp.1298–303. Available at: http://www.ncbi.nlm.nih.gov/pubmed/20829476 [Accessed August 6, 2013].

Robinson, J.G. & Bennett, E.L., 2004. Having your wildlife and eating it too: an analysis of

hunting sustainability across tropical ecosystems. *Animal Conservation*, 7(4), pp.397–408. Available at: http://doi.wiley.com/10.1017/S1367943004001532 [Accessed August 18, 2013].

Romijn, E. et al., 2015. Assessing change in national forest monitoring capacities of 99 tropical countries. *Forest Ecology and Management*, 352, pp.109–123. Available at: http://dx.doi.org/10.1016/j.foreco.2015.06.003.

Schroth, G. & McNeely, J. a, 2011. Biodiversity conservation, ecosystem services and livelihoods in tropical landscapes: towards a common agenda. *Environmental management*, 48(2), pp.229–36. Available at: http://www.ncbi.nlm.nih.gov/pubmed/21706379 [Accessed August 1, 2011].

Scoones, I., 1998. *Sustainable rural livelihoods: a framework for analysis*,

Shoreman-Ouimet, E. & Kopnina, H., 2015. Reconciling ecological and social justice to promote biodiversity conservation. *Biological Conservation*, 184, pp.320–326. Available at: http://dx.doi.org/10.1016/j.biocon.2015.01.030.

Tongco, M.D.C., 2007. Purposive Sampling as a Tool for Informant Selection. *Ethnobotany Research & Applications*, 158, pp.147–158.

Willcox, a & Nambu, D., 2007. Wildlife hunting practices and bushmeat dynamics of the Banyangi and Mbo people of Southwestern Cameroon. *Biological Conservation*, 134(2), pp.251–261. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0006320706003296 [Accessed March 13, 2012].

Wright, J.H. & Priston, N.E.C., 2010. Hunting and trapping in Lebialem Division , Cameroon : bushmeat harvesting practices and human reliance. *Endangered Species Research*, 11, pp.1–12.

CHAPTER 3

CONTROL OF FOREST ACCESS AND ITS IMPLICATIONS ON WILDLIFE CONSERVATION IN THE TOFALA HILL WILDLIFE SANCTUARY

ABSTRACT

This study analysed how access to forest resources in the Tofala Hill Wildlife Sanctuary (THWS) is influenced by the ability of actors to benefit from forest resources. The main methods of data collection included focused interviews, semi-structured questionnaires and field observations. The results of this study revealed that the value given to and perceptions held by stakeholders about forest resources was closely linked to their previous experience and interactions with forest resources. The ability of stakeholders to benefit from forest resources was not only affected by customary laws and state laws but also revealed to be affected by individual interests. It was also revealed that individual roles and behaviour were greatly influenced by the institutional settings they situate themselves within. The ability of actors to access forest resources was beyond their legitimate power to benefit from forest resources. The pursuit of forest resources by actors was revealed to be motivated by their interests. Conflicting interests introduced new dimensions of forest management challenges. Bureaucratic actors were observed to rely more on the role of law in regulating access to forest resources rather than exploring opportunities for inclusive dialogues and management. The study argues that opportunities and situations that could instigate competition over authority and power in access control should be closely monitored and appropriate measures developed to mitigate them. Less emphasis should be placed on the role of law as a policy implementation tool.

Key words: Forest governance; institutions; wildlife conservation; local livelihoods; forest income

1. INTRODUCTION

Challenges in forest management are linked to the limitations of human agency to adjust behaviour in the face of dynamic and complex resource access and new information (Stone and Nyaupane 2014). Forest ecosystems are among the most biologically rich and genetically diverse ecosystems on earth and cover roughly one third of global land area (Köhl et al. 2015). Ecosystems are important sources of livelihoods to millions of people and contribute to the national economic development of many countries (Whiteman et al. 2015). Globally, about one quarter of forest area is designated for multiple use forestry (Köhl et al. 2015). Forest resources usage has led to a 3% decline in the total forest area, from 4128Mha in 1990 to 3999Mha in 2015 (Keenan et al. 2015). Tropical forests are most at risk of conversion. Estimates indicate however, that on a global level, loss of forest resources is likely to slow down in the next 15 years (D'Annunzio et al. 2015).

It is largely accepted that deforestation is mainly concentrated in the tropics and driven by conversion to agriculture (Schwartzman et al. 2000; Mayaux et al. 2005; Macqueen 2012). Humans are continuously changing land use to gain access to natural resources through clearing of forests for agricultural activities and urban expansion (Romijn et al. 2015). Forest product harvesting by forest-dwelling community members, including hunting, timber and non-timber harvesting, is believed to be a major threat to the biodiversity of tropical forests worldwide (Gray et al. 2015). In order to regulate and manage over-exploitation of natural resources, conservation of biodiversity has been a central environmental concern (Butchart et al. 2010; Rands et al. 2010; Duffy 2014). Conserving biodiversity is considered to be crucial for the long-term health and sustainable productivity of the world's forests (FAO 2015). However, conserving biodiversity has proven to be challenging in a rapidly changing world and requires more robust collaborative efforts to succeed (Ostrom and Cox 2010; Romanach et al. 2016). The quest to attain effectiveness in collaborative management efforts for natural resources has led to a shift in conservation approaches since the late 1990s (Dressler et al. 2010; Duffy 2014). This evolution has placed emphasis on the argument that natural resource governance should move beyond forest conservation as such and embed forest management into broader societal processes reflecting local practices, values and principles (Cleaver 2002; Koning 2011; Wiersum et al. 2013). However, despite the efforts and advocacy of natural resource management actors, the issue of equitable participation of local stakeholders in forestry policies is still a challenge (Scarlett and Boyd 2015).

It has been argued that the involvement of forest dwellers in forest management could go a long way to regulate access and bring about sustainable forest management (Parrotta et al. 2009; Khadka et al. 2013). If more rights are accorded to the local people to participate in decision-making in forest management, it might bring about a greater sense of and therefore motivate them to engage in sustainable forest practices (Oyono et al. 2012). It has also been argued that since the forest dwelling community interacts with forest resources on a daily basis,

they stand a better chance of sustainably managing these resources if given the opportunity (Lepper and Goebel 2010). Efforts to promote participation in forest management across Africa have been centred on decentralising forest management - the transfer of meaningful discretionary powers to local representative authorities (Ribot et al. 2010). Nonetheless, forestry decentralization is argued to have provided sustainable management with few direct benefits (Adam and Eltayeb 2016). In Cameroon for instance, decentralisation of forest management has been promoted by giving local community members the authority to create and manage forest concessions, known as community forests (Yufanyi Movuh 2013). However, it is argued that decentralization of forest management in Cameroon has contributed little to participatory forest management (Ezzine de Blas et al. 2011; Nkemnyi et al. 2014). Effective forest management policies should enable stakeholders to fit into broader objectives and anticipate the benefits of multi-agency arrangements and institutional planning (Romanach et al. 2016). Involving local stakeholders in forest management is argued to be rewarding if they are empowered to effectively participate in management planning, development and implementation (Achterkamp and Vos 2007). However, irrespective of the management approach, it is argued that the ability of local people to sustain forest management depends on how well programmes are embedded in sociocultural relations, local politics, resource needs and uses (Dressler et al. 2010). Indigenous knowledge on how forest dwelling communities interact with forest resources could provide more useful insight for sustainable forest management (Ribot and Peluso 2003; Oyono et al. 2012).

This study draws insights from the conceptual framework highlighting the theory of access in mediating resources (Ribot and Peluso 2003) and the role of institutions in mediating environmental-society relationships (Leach et al. 1999). The study argues that individuals' knowledge on resource-access could contribute to effective forest management (Ribot and Peluso 2003). The following specific objectives are considered in the study:

(i) To assess stakeholders' interest in accessing forest resources in the THWS,

(ii) To assess the mechanisms by which stakeholders access forest resources in the THWS; and

(iii) To analyse the implications of access to forest resources on wildlife conservation.

2 FOREST RESOURCES AND USAGE

2.1 FOREST RESOURCES

Forests are viewed, defined, assessed, and valued through different lenses (Chazdon et al. 2016). Most often definitions of the forest vary according to stakeholders' interests (Figure 3.1). Chazdon et al. (2016) elaborated that forests can be seen as an ecosystem composed of trees and forms of biological diversity, a home for indigenous people, a source of timber products, a source of multiple ecosystem services, a repository for carbon storage, and as social-ecological systems, or as all of the above depending on the stakeholder's interest. From the ''land cover'' perspective, forests could be viewed as ecosystems or vegetation types supporting unique assemblages of plants and animals. From the ''land use'' perspective, forests could be viewed as landholdings that are legally designated as forest, regardless of their current vegetation perspective.

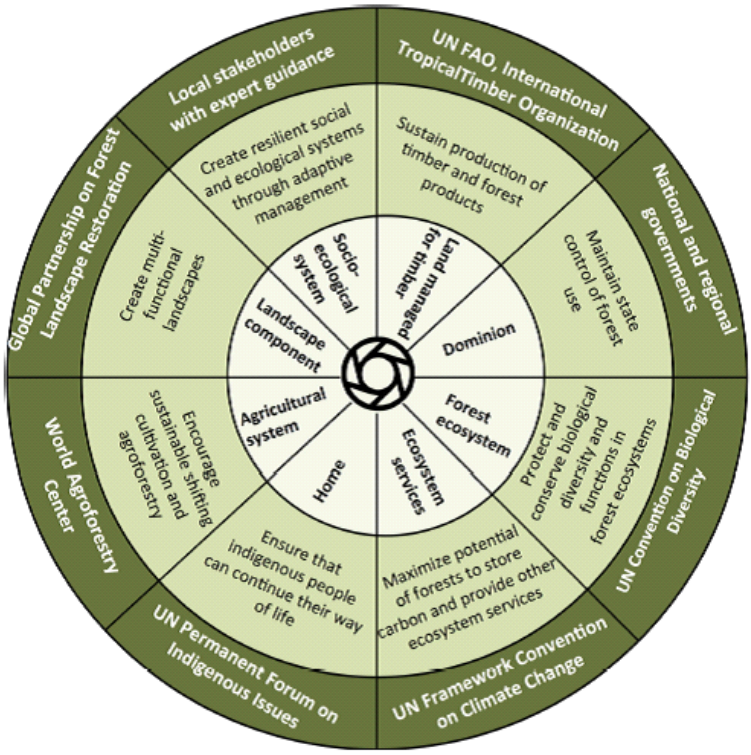

Fig. 3.1 Different management objectives form the basis from which a forest is conceptualized and definitions are created. The inner circle shows how a forest can be viewed through different lenses, emanating from the different management objectives shown in the middle circle. Each objective provides a perspective from which specific definitions are created. The outermost circle describes institutions whose mission is associated with each management objective and forest definition

Source: Chazdon et al. (2016)

The need to protect forest resources is linked to the different forest management objectives, which also reflect different institutional views and targets motivating access (Li 2007). Across the years, various international and national conventions have been held with the motive of crafting policy for better forest management (Larson and Ribot 2007). Among them is article 5 of the Paris Agreement produced by the 2015 United Nations Climate Change Conference, placing forest conservation, enhancement, and sustainable management at the forefront of climate mitigation policies, the Bonn Challenge to restore 150 million hectares of degraded and deforested land by 2020 and the New York Declaration on Forests, launched at the United Nations Climate Summit 2014 (Chazdon et al. 2016). The need to bring about forest resources conservation has driven advocacy as to why policy makers, governments, scientists, and agencies need to adopt dynamic and sustainable policies for forest resource management beyond stakeholder-driven interests (Ostrom and Cox 2010).

Based on the increasing need to ensure sustainable natural resource management, access to forest resources is continuously adapted to evolving needs and demands (Lin and Chang 2011; MacDicken et al. 2015b). Forest management dates back to the 1700s in Germany (Chazdon et al. 2016). It was introduced due to concern about shortages in forest products. This concept was scaled up over time and has mobilized individuals, and national and international organizations to conserve nature and mitigate environmental degradation, habitat and biodiversity loss (Lund et al. 2009; Chazdon et al. 2016). The search for sustainability in global forest management is constantly exploring new strategies to regulate access to forest resources (Agrawal et al. 2008; MacDicken et al. 2015b).

2.2. ACCESS TO FOREST RESOURCES

Forests provide important ecosystem services to people worldwide (Lele et al. 2013). Timber and non-timber forest products constitute an important aspect of livelihoods for forest dwelling communities (Newton et al. 2012). In addition to livelihood benefits, forests also have intangible cultural and spiritual values, which vary from one culture to another (Onel and Mukherjee 2013). Cultural services include the psychological and health benefits that people derive from forests. Managing forest ecosystems to maintain their multiple values requires anticipatory and adaptive forest governance strategies (Arts 2014). Unsustainable management strategies are liable to result in unequally distributed forest resource access over time, which might lead to forest-dependent poverty and environmental degradation (Daur et al. 2016). It is therefore relevant to monitor how local conditions and efforts to achieve forest access are forged through relations at multiple scales (Saunders 2014).

2.2 1. THE THEORY OF ACCESS

Ribot and Peluso (2003) defined access as the ability to derive benefits from things. This definition of access focuses more on power than on the notion of property rights. With regard to natural resources, the theory of access helps to explore this range of powers through the various mechanisms, processes, and social relations that affect people's ability to benefit from resources. Using the theory of access, Ribot and Peluso (2003) further elaborated that access retains an empirical focus on the issues of who benefits, in which ways, and in which circumstances. The power to benefit may reflect the material, cultural, political and economic aspects that interact to influence access to resources. This study focused on the political-economic aspect of the access concept, which divides social actions into access gain, control and access maintenance.

Gaining access to resources is considered a more general process and can be established through various means. Access control refers to the ability to mediate others' access. On the other hand maintenance of access requires coordination of resources or powers to keep a particular sort of resource access open. The means, processes, and relations through which individuals gain, maintain and control access are referred to as access mechanisms (Ribot and Peluso 2003). Thus the analysis of access involves the identification and mapping of the processes by which actors gain, control, and maintain access to resources.

Ribot and Peluso (2003) outlined a working set of categories and examples relevant to map the mechanisms that shape access processes. This includes rights-based, structural and relational access. Rights-based access is access sanctioned by law/custom and by convention or secured through theft, coercion and violence. Structural access refers to access to technology, capital, markets, labour, knowledge, authority and information. Relational access refers to access via the negotiation of social relations, identity, trust, reciprocity, patronage and clientele, dependence and obligations. Rights-based, structural and relational access mechanisms are complementary in shaping actors access to resources, not substitutes.

Making use of the theory of access as discussed by Ribot and Peluso (2003), this study elicited information through field study to identify the various mechanisms, processes and social relations that affect local people's access to forest resources in the THWS. In order to analyse actors' abilities to benefit from forest resources, this study relied on a set of factors (rights, social structure and relations, power and authority, identity) relevant in mapping access (Figure 3.2). Gaining and maintaining access to resources could also be affected by technology, capital, markets, labour, knowledge and identities among other factors.

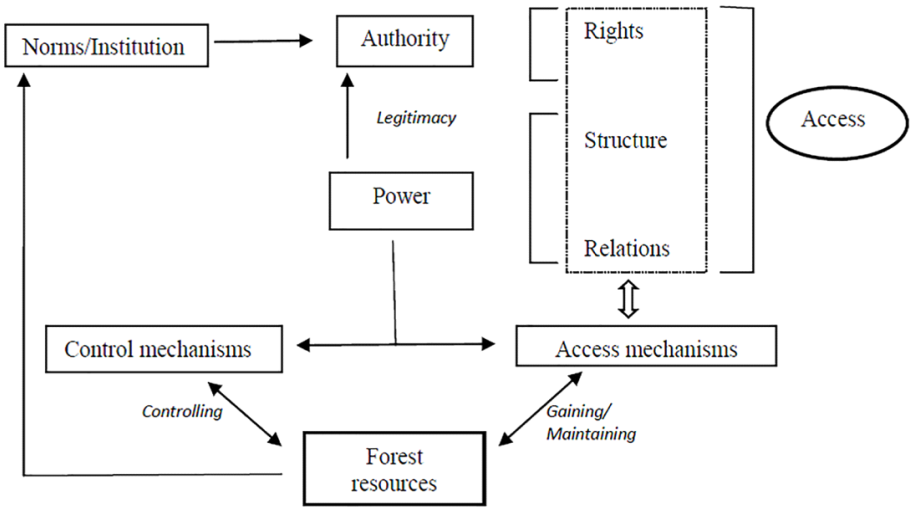

Figure 3.2: Schematic presentation of factors relevant in mapping access to forest resources

Source: Adapted from Geenen 2014:p66

2.2.2. THE RIGHT TO ACCESS FOREST RESOURCES

The right to access forest resources could be defined in different dimensions, which often reflect the actor's interests (Ostrom 2003). Purnomo et al. (2012) differentiated rights in accessing forest resources into three dimensions, which we found relevant to this study to contribute to mapping the mechanisms of access. These include 'component of right bundle', 'basis of right' and 'resource ownership'. 'Component of right bundle' addresses a number of subcategories of rights including access, use, manage, transfer and decide rules. Access right is defined as the right to enter a defined physical area and enjoy non-subtractive benefits like hiking, canoeing or sitting in the sun. Use right is defined as the right to obtain resource units including cutting fire wood or timber, harvesting non-timber forest products (NTFPs) and other products from the forest. Management right is defined as the right to regulate internal use patterns or to transform the resource by making improvements. Transfer right is defined as the right to sell or lease management rights and decide rules is defined as the right to determine who will have an access right and how that right may be transferred.

The second dimension of rights is known as 'basis of right'. 'Basis of right' is divided into three subcategories including de facto, 'customary' and de jure. De facto rights imply community members' access to land is not legitimated by the law/certificate of ownership. Customary right refers to the scenario where local community members have the right of ownership of the land, since it has been inherited from their ancestors, but it is still not legitimated by the law. The case where a local community's right of ownership of the land is legally admitted by the government through certificate of ownership, government

decree/decision is referred to as de jure. The third dimension of right is referred to as 'resource ownership', which is further categorised into individual, collective and state. Individual right is applicable when resources collected from the forest become the possession of the individual who collected them. Similarly, collective right is applicable to a scenario where the resources collected from the forest become the possession of the community in which the individuals are part of. State right is applicable in a scenario where the resources collected from the forest become the possession of the state/government. In this scenario, the community or individuals only maintain and harvest the resources and are incentivised by the work they do.

Correspondingly, formal property rights do not necessarily imply that the stakeholders holding them are able to derive material benefits from the natural resources to which those rights apply (Sikor and Lund 2009). Stakeholders constantly attempt to secure rights to natural resources by having their access claims recognized as legitimate property by a legal political institution. However, all the different forms of rights play key roles in establishing the relations, structures, authority and institutional interactions that define the ways forest users' respond to forest management objectives (Purnomo et al. 2012). In addition, it is argued that a human-rights-based approach increases the role of local communities in forest management and the potential for democratic governance of forest resources (Bawa et al. 2011) .

2.2.3. THE AUTHORITY AND POWER TO ACCESS FOREST RESOURCES

Access and property regarding natural resources are intimately bound up with the exercise of power and authority (Sikor and Lund 2009). Herein, power refers to the temporary and contingent ability to influence social interactions to one's own benefit (Ojha et al. 2014)). Power is thus already present in all social interactions and is the means through which subjects can act (Faye 2015). On the other hand, authority refers to an instance of power that is associated with at least a minimum of voluntary submission, making it likely 'that a command with a specific content will be obeyed by a given group of persons' (Sikor and Lund 2009). Authority characterizes the capacity of political legal institutions, including the state and its constituent institutions such as village communities and other organizations, to influence other social actors. The exercise of authority is intimately linked to the claims of legitimacy of the particular institution (ibid). This often involves a general, historically-based claim as well as a specific claim to legitimacy. However, what is perceived as legal or as illegal may change over time without any change in legislation (Purnomo et al. 2012).

When authority and power relations are contested, political legal institutions struggle to acquire power to influence others, by whatever means (Sikor and Lund 2009). In the case of forest management, an institution will have power over forests when it can determine the conditions of access to forest resources, thereby controlling other actors' interventions in the

forests (Ojha et al. 2014). Institutions often seek to turn power into authority by gaining and sustaining legitimacy in the eyes of their community. This implies that claimants seek out socio-political institutions to authorize their claims and socio-political institutions look for claims to authorize (Sikor and Lund 2009). However, shifts in authority may even have an effect on the form of property in question and at the same time shape an individual's ability to benefit from resources (Ribot and Peluso 2003; Sikor and Lund 2009).

Privileged access to resources can be acquired through legal channels, as in making an application for a permit or lobbying through official channels to the individuals or institutions with the authority to make and implement laws (Ribot and Peluso 2003). Privileged access can strongly influence who benefits from the resource in question. In Cameroon for instance, privileged access to forest resources is documented in cases of protected area creation and management (Dewi et al. 2013; Nkemnyi et al. 2016). Privileged access often presents the issue of conflicts in terms of overlapping jurisdictions of authority between legal, customary and conventional authorities (Ribot and Peluso 2003). Such overlaps allow individuals to take advantage of different social identities to acquire or accumulate resources using different notions of legitimate or authoritative access. However, access to authority and power play relevant roles in controlling access to resources.

2.2.4. INSTITUTIONS AND ACCESS TO FOREST RESOURCES

Understanding the concept of institution and how institutions can be designed to benefit natural resource management is relevant in designing its use and applicability (Dessie et al. 2013). Here, we define institutions as human-constructed constraints or opportunities within which individual choices take place and which shape the consequences of their choices (McGinnis 2011). These institutional perspectives emphasise the social, normative, or rational character of institutions rather than their formal political aspects. Institutional participation in forest resource management is often considered in developing countries as a promising way of managing forest resources (Koning and Cleaver 2012). Local actors have various institutional options to choose from when making decisions about their forest practices. This could result in processes in which actors, consciously or unconsciously, adhere to local, appropriate, or traditional institutions rather than official forest regulations (Cleaver et al. 2013). Thus, the rule of informal and formal institutions in forest management is considered important as they play a key role in enforcing mechanisms that shape access to forest resources (Koning and Cleaver 2012). Institutions are mediated by power relations and this also influences access to resources, which might result in particular livelihood strategies and patterns of ecological change (Leach et al. 1999).

3. MATERIALS AND METHODS

3.1. DATA COLLECTION

Based on the conceptual framework (Fig. 2.2), the mechanisms by which local people access forest resources in the THWS were assessed. Data collection paid attention to how relations, rights, structures of institutions, and power and authority of individuals influenced access mechanisms. On the other hand, the norms and institutions governing forest resources were also assessed in relation to the factors shaping access mechanisms.

Data were collected between January 2013 and June 2015. The main method of data collection included focused interviews, semi-structured questionnaires and field observations. Actors' interests and ability to access forest resources were explored using semi-structured questionnaires (Annex I – section C). Questionnaire administration targeted households and was designed to elicit information that could facilitate the mapping of forest resources and the interest of the various actors in the identified forest resources. Questionnaires also paid attention to how access to forest resources was maintained and controlled. The assessment of how the ability of individuals to gain, maintain and control access interfered with various rights was also evaluated. In addition, the implications of access to forest resources on wildlife conservation was also evaluated. A total of 245 households were sampled randomly in six communities (approximately 10% of households per community). The selection of the sampled communities followed the guidelines outlined by Tongco (2007). The sampled communities were selected to represent the structural setting and cultural diversity of the study areas. A total of 46 households were sampled in Bechati, 30 in Banti, 48 in Besali, 39 in Folepi, 42 in M'mockmbin and 40 in Fossimondi community.

In-depth interviews (Kvale and Brinkmann 2009) were used to explore the power relations that shaped access to forest resources (Annex I – section D). The interview guidelines were directed to elicit information that could enable an understanding of how power and authority were distributed amongst actors, and how the distribution of power and authority affected access to forest resources. Interviews also questioned conflicting interests in forest resource usage and their implications for forest management. Data obtained on the various access mechanisms to forest resources and on conflicting interests in forest resource usage provided information for SWOT analysis on the implications of forest access for conservation. A total of 128 in-depth interviews were administered (119 to actors in the local communities and nine to actors in the wildlife conservation institutions). On average, 10 actors were interviewed per community. Key informants were selected in collaboration with local field guides and the community head (chief). The key informants included local council members (30), men (38), women (29) and youngsters (22).

Field observations were used mainly to witness the forest practices and community structuring. Participant and non-participant observations were used as described by Kumar (2014). Field observations were employed during interviews to gain in-depth perspectives of community members by matching interview responses with other observable environmental communication. Field observations also contributed by generating further questions in the field that could add value to the study results. More importantly, field observation contributed to an improved understanding of the case study.

3.2. DATA ANALYSIS

The conceptual framework (Fig. 3.2) and the study objectives helped to organise the analysis, shape the process of data collection and identify the important cause-effect relationships. The conceptual framework guided the categorisation of access into gain, maintenance and control. In the same way the objectives of the study directed the study to collect information that enabled an understanding of how the different access mechanisms play out in forest resources management in the THWS. Three different perspectives were employed in data analysis: literal; interpretative; and, reflexive (Mason 2002). Literal analysis enabled the interpretation of data in their literal form. By using interpretative analyses, the data collected were interpreted based on the demography of the study area, and the researchers' experience and expertise. Finally, reflexive analysis drew from interpretative and literal analysis to compare the results obtained with other studies in order to provide a more robust contextualised analysis.

Information collected during the in-depth interviews was processed first by coding (Crang and Cook 2007). Coding during fieldwork was used to review the field notes and to dissect information meaningfully while keeping the relations between the parts intact. The different answers were classified according to the main themes linked to the research objectives and the theoretical framework. The information obtained was processed in order to describe the different mechanisms governing access to forest resources in the THWS. Data collected from the questionnaire survey were cross-checked for consistency and completeness in the field. Administered questionnaires were reviewed constantly in the field and questionnaires that missed out relevant information for data analysis were rejected and the household replaced in the field by another randomly selected household. SPSS version 20 was used for descriptive analysis. The Shapiro Wilks W test was used for normality testing. The Pearson correlation test was used to analyse relationships among actors and their ability to access forest resources. The Chi-Square test ($\chi 2$) was used to analyse the extent to which significant differences occurred in forest activities across the studied communities. This helped in explaining the effects that might occur if new management policies are introduced. SWOT

analysis was used to evaluate the implications of access to forest resources on wildlife conservation. The combination of qualitative and quantitative data provided in-depth analysis of actors' ability to benefit from forest resources, the mechanisms governing access and the implications for wildlife conservation.

4. RESULTS

4.1. FOREST RESOURCES IN THE THWS

The different forest resources in the THWS were evaluated by asking the question "What resources do you have in your forest/THWS?" to different stakeholders. Based on the interview extracts reported, the study established that forest resources play an important role in the life of the local people and to the external population at large. In an interview session in the Bechati community with an elderly lady, she narrated "…*we have a lot of things in our forest. When I grew up as a kid, my father's house used to be in the forest. Back then we did not have so many people in our village as today. All what we needed came from the forest: meat, food, medicine, firewood, wild-fruits and many other things. My father had a small palm plantation in our backyard, which still exists until now. The palm plantation was our only source of income. The money my father made from the sales of palm oil produced from the plantation was used to purchase dresses for the household and also to buy farm tools. We did not have to pay hospital bills or school fees like today because hospitals and schools were not there. All medicines could be obtained from the forest. I think many things have changed today especially in the way the people in our community use the forest. The number of people living in our village has increased. Our village is developing because we now have school and hospitals. Cars can now come right into the village on market days to buy food. This has affected the way people use the forest: everyone, especially the young people, are struggling to acquire land so that they can grow crops. The money they raise from farming enables them to get married and to send their children to school. Many people also need the forest to plant cocoa and palms because they will do well in the forest compared to other places. The forest is fertile because the nutrients have not been used like in other areas where farming has previously been going on…"* Her narration revealed that the local people have built intimate connections with the forest. To the local people, the forest is not only perceived as a place that provides resources for livelihood but also as a home. The interview revealed a deep and rich communication of what value the local people placed on the forest and it resources.

The results of the field interviews also revealed that the forest is an equally important resource for the younger generation of the local community. In an interview session a youth in the Egumbu community noted that "…*the forest is our only source of employment. Almost all the youth in this village have their farmland in the forest or are in the process of establishing it. We also go to the forest to hunt and to harvest non-timber forest products. If you are a hard worker you can make a lot of money from the forest. There are seasons when non-timber forest products like 'njangsa' is available and you can go to the forest to pick them. The season for picking non-timber forest products is also the peak season for hunting as animals usually come*

to eat the fruits. During the dry season when the forest is less busy with hunting and non-timber forest products, we spend most of the time in harvesting palm nuts for palm oil. People who have cocoa farms are also busy harvesting cocoa during the dry season. The forest is very important for us because it will provide farmland in future for our children. Through it they will be able to support their own families. We have a lot of things in our forest that can support us to have a better living…" The above interview revealed that the forest is an important asset for the youth. The narration also revealed total dependence on forest resources with the confident belief that it is a reliable and sustainable source of livelihood and way of life.

On the other hand the interview session with an employee of an NGO revealed another dimension of how stakeholders perceived forest resources and their importance "…*the THWS is an important biodiversity hotspot that supports important wildlife species like the Cross River gorilla and the Chimpanzee. These are very scarce animals that need to be protected because of their value. There are also many plants species in the forest that are threatened due to human activities. It is also an important bird area. It is a treasure in terms of its biodiversity potential and its touristic potentials. The landscape is also an important watershed supplying water to the Manyu River that runs to the Cross River in the Nigeria boarder. To the local people, it is an important source of livelihood. They practice hunting and also farm in the forest area. There are also non-timber forest products in the forest area that play a key role in the income of households. In addition, traditional medicine is still valued by many local people in the THWS and the forest supplies all the herbs and products they need for this purpose…"* The latter narration revealed that the interviewee perceived forest resources to go beyond a source of livelihood for the local people and also brings in the biodiversity importance of the forest, which was ignored in the narration of the first two interviews presented above.

Furthermore, the narration of a local government employee interviewed revealed that the interviewee was less connected to forest resources and could only narrate abstractly about the importance of forest resources to the different actors "…*the forests in Cameroon are very rich; the THWS is not an exception. The forest has a lot of timber species which are used by the local people to build houses and in craft work which is very important in the culture of Cameroon. The THWS is also reported to have animal species that can attract a lot of tourists and bring about community development. To the villagers, it plays an important role in food production as agriculture is the main activity in all rural communities in Cameroon…"* The interview extract was more a portrayal of state interests: the interviewee constantly directed his responses toward the general situation of the state.

The interview with the community head reflected the value of the forest visa-vis the cultural value of the community. It can be established from the interview with the community head that he placed importance on the wellbeing of the community and focused less on the individual benefits "…*first of all our ancestor dwells in the forest. It is part of this community and cannot be separated from the community. There are important traditional rights that must*

be made in some secret places in the forest at particular season of the year for the prosperity of our village. The life of our community is in the forest. We cannot do without the forest: the food we eat and the money we make are all linked to the forest…"

The interview extracts also revealed that the value of the forest is reflected by different stakeholders in diverse ways. The levels of interaction stakeholders have with the forest also shaped the way they narrated the value of the forest in terms of resources. While the wildlife conservation staff reiterated more the conservation value of the forest compared to the interest of the local community members, these local community members focused more on the livelihood values and ignored conservation values of the forest. Generally, the interview extracts revealed that the forest resources are regarded by different stakeholders in different ways. In all cases, the stakeholders portray their own interests more in the narrations. In addition, the experience of the stakeholder in interacting with forest resources also affected the way they viewed the forest.

4.2. STAKEHOLDERS AND INTERESTS IN THE THWS

To the local community members, the forest is a source of livelihood, a home and cultural heritage. To the wildlife conservationists, the forest is a valuable biodiversity hotspot that needs conservation attention while considering the livelihoods of the local people. To the local government officials the forest is important to the state because of its wildlife, touristic and timber potential. It is also important to the local people as a source of livelihood. Based on the observation of the different stakeholders, we can establish that forest resources played a very important role not only for the local people but the general public at large. However, for the sake of this study, the focus on forest resources is limited to access to forest resources for livelihood and access to forest resources for wildlife conservation. Livelihoods and wildlife conservation were selected for analysis because it suited the reflection of the characteristics of access (gain, control and maintenance) outlined in the conceptual framework of this study.

Two stakeholders were identified as primary stakeholders who played important roles in the accessing of forest resources in the THWS. These were the wildlife conservation organisations promoting wildlife conservation in the THWS and the local community members (LCMs). For the LCMs, access to forest resources is valued for livelihood, lifestyle and its sacred values. "….*our ancestors live in that forest*…" stated an interviewee from the Bechati community. The main livelihood activities practiced by the local people include farming, hunting and harvesting of Non-Timber Forest Products (NTFPs). An in-depth interview session with a local community member in Fossimondi revealed the following information: "…*I started going to the farm with my mother as young as I can remember. We did not have the option whether to go to the farm or not because that was all we depended on for food. Going to the*

farm was a daily activity and is still a daily activity. I now have my own children and they assist me with farm work after school hours, on weekends and during holidays. All my children need to learn how to work on the farm because they will also be independent and establish their own farms when they grow up. Especially when we do not have enough money to send all of them to high school…"

Farming represents an important activity for local community members and the majority of interviewees (84.1%) relied on farming as a source of livelihood. Follow-up interviews revealed that farming was dependent on forest resources .The main method of farming was slash and burn agriculture requiring fallowing. This method of farming required that a piece of land used for farming should be allowed to lie fallow for a couple of years before it can be used for farming again. Given that farming is the main livelihood activity, new patches of forest are cleared as needed for farming activities. "…*the forest belongs to us and it is intended to support us to have a better living. We try not to cut down all the forest at once for farm work. Some sections of the forest are assigned for farming by the village traditional council while we wait for fallowed farmland to regenerate…"* noted an interviewee in Folepi community.

Hunting was also practiced in the studied community. It was revealed as the main source of protein and income for households that practiced it. "… *I started hunting when I was ten years old. I used to go and spend the night in the forest with my father during his hunting trips. During the night, when he goes out to hunt, I will stay back in the camp. In the morning, I will help him to prepare the catch and smoke it while he is resting. Hunting to me is a passion because I grew up with it. It also supports my household with the money to pay for school fees and other needs. I think hunting is rewarding because you can easily sell the proceeds. Many people like bushmeat because of it special taste and flavour. People are always ready to buy. Some people will even give you their money for the type of animal they want you to hunt before you go to the forest to hunt. Many buyers also travel from far into our village to buy on appointment. Besides, my household does not need to spend money to buy fish or meat for food because I always supply them with bushmeat…"* recounted an interviewee in the Fossimondi community.

The forest was also accessed for herbs and bark harvesting, used for traditional medicine. "… *I go to the forest regularly to harvest herbs for traditional medicine. There are some herbs that you can only find in the deepest part of the forest. Many patients come to me for treatment and most of the cases require me to go to the forest regularly to harvest herbs needed for their treatment*…" narrated an interviewee in the Bechati community. Non-timber forest products (NTFPs) harvesting also constituted a minor but important forest activity for the local people. The most harvested NTFPs according to the LCMs were *Gnetum africanum* (eru) and *Cola acuminata* (red cola). "…*Most often, on the eve of the market day, we will go to the forest to harvest eru to sell on our local market day. We also go to the forest most often to*

harvest for customers that approach us asking to buy; like the women who have restaurants in our village…" reported an interviewee in the Bechati community.

The forest also attracted the attention of wildlife conservationists. Wildlife conservationists were particularly interested in the Cross River gorilla (*Gorilla gorilla diehli*) and the Ellioti chimpanzee (*Pan troglodytes ellioti*), which are critically endangered and endangered respectively. Notwithstanding, the forest was also noted to be a home of other wildlife species, most of which were hunted for bushmeat. In addition to the great apes (the gorilla and chimpanzee) the forest was also valued by the wildlife conservationists for its flora and the fact that it was a catchment area for important rivers and streams in the landscape.

"… *There are less than 300 Cross River gorilla left in the wild across 14 fragmented area including the THWS. It is very important that we commit every effort to protect this important wildlife. The chimpanzee is also endangered and needs immediate protection attention. We are working in collaboration with the government and the local community to find the best ways possible to protect these important species. The forest area has been gazetted as a wildlife sanctuary, but we are aware that it is not enough effort to save these threatened species. We need to do more in terms of providing the local people with alternative livelihoods so that they can reduce their access to the forest activities like farming and hunting, which are currently major threats to the wildlife*…" reported an interviewee (wildlife conservation staff).

4.3. FACTORS SHAPING ACCESS TO FOREST RESOURCES IN THWS

In order to analyse actors' abilities to benefit from forest resources, this study relied on a set of factors (rights, power and authority, social structure and relations, knowledge, and identity).

4.3.1. RIGHTS

The aspect of rights was observed to be very relevant in individuals' ability to access forest resources. Local community members' ability to access forest resources was backed by customary rights. However, according to state laws, they were not the legitimate owners of the land given that the state had the legal right to transfer the land (forest) to any third party through certification. Notwithstanding, data collected from this study showed that local community members had access rights, use rights, management rights and transfer rights (Table 3.1).

Table 3.1: Means by which local community members first acquire farmland

	Frequency	Percent	Cumulative Percent
Inherited	199	81.2	81.2
Cleared virgin forest	28	11.4	92.7
Bought	14	5.7	98.4
Hired/borrowed	4	1.6	100.0
Total	245	100.0	

An analysis of how the local people acquire farmland revealed the dimension of rights possessed by the local community members. The majority of the local people (81.2%) inherited their farmland from their parent or family relative. This revealed that local people possess use, management and transfer rights of a piece of land assigned to them. The most common scenario of acquiring land was by effective occupation. The first occupant in most cases subsequently becomes the owner of the land. "*…our fore father did not buy land for farming or building. Land was inherited by the ability of the individual to effectively occupy it. The first occupant in most cases becomes the leader of the community and may welcome subsequent occupants based on their willingness to share the land they occupied. In most cases they will accumulate the occupied land for their future household members. This was one of the reasons why you will see some rural families owned large hectares of land…"* recounted an interviewee in Bangang community. Interview results also revealed that some interviewees (11.4%) acquired their piece of land by clearing virgin forest (first occupancy). This also reflects the aspect of individual rights to access forest resources. Cases were also recorded where individuals transferred their piece of land by selling it to other individuals or by renting it out for a period of time.

On the other hand, it was also revealed that the rights of the wildlife conservation organisation to access forest resources (wildlife conservation) was backed by 'de jure rights' (legally admitted by the government through certificate of ownership, government decree/decision) as defined by Purnomo et al. (2012). *"…we have the legal right to promote wildlife conservation in the THWS. The forest area has been gazetted as a protected area. This implies that all activities that would promote forest degradation are prohibited from the forest area by law. It is our duty to work with local people and appropriate authorities to ensure that these laws are respected…"* recounted an interviewee (wildlife conservation staff).

The local people and the wildlife conservationists are observed to pursue their agenda by selectively using norms, power and relations that best give them assurance to access forest resources. The local people were observed to place more emphasis on their rights as custodians of the land, who have full access to the forest and manage it for their wellbeing regardless of wildlife conservation activities in the project area. "*…we cannot be talking about wildlife*

conservation when our livelihoods are at stake. If we must support wildlife conservation, we need to have reliable assurance that our livelihoods will not be compromised…" noted an interviewee in the Banti community. On the other hand the wildlife conservationists were also observed to emphasise more their right to conserve the THWS. Notwithstanding, they also acknowledged that they were willing to work with the local people to find sustainable options for their livelihoods. "…*we are aware of the livelihood challenges that arise as a result of wildlife conservation. However, we are constantly assuring the local community members to work with us so that we can both find a better way to collaborate…"* reported an interviewee (wildlife conservation staff).

4.3.2. IDENTITY

The identity of stakeholders played a key role in their ability to access forest resources. Interviewees were noted to place emphasis on the identity of the community where they live and on their ability to access the resources in the community. "…*As a son from this village, I have the right to hunt and farm within my village territory without permission from the local traditional council. I may only need permission if the land has been marked as reserved or assigned for other community needs. It is also my duty to prevent outsiders from intruding into our territory without permission to hunt or carry out any farming activity…"* reported an interviewee in Igumbo community.

The wildlife conservation organisation was also granted legal access to the THWS because of its identity as a wildlife conservation organisation. "…*we are a wildlife conservation organisation and our duty is to support the government in implementing initiatives that would improve the environmental sustainability of the country. That is why the government has granted us the authority to manage the THWS for conservation purposes…"* noted an interviewee (wildlife conservation staff).

4.3.3. SOCIAL STRUCTURES AND RELATIONS

Social structures and relations were revealed as important factors shaping access to forest resources in the THWS. The rights to access forest resources were observed to be managed through social structure and relations. The most recognised social structures in the local communities were known as the local traditional councils. The local traditional councils were the custodians of tradition in each village. They played relevant roles in upholding the tradition and culture of the village and in decision making on forest resources. They were revealed as key mediators in forest resource management, local development and governance issues. Each village was headed by a paramount chief locally called 'fon'. Customarily,

community members owed loyalty to the fon. The fon was assisted in leadership by the chiefs and notables ('bekem') appointed by the fon. "…*It is my duty to ensure that any activity taking place in this community is safe because I am accountable to my community members and their wellbeing*…" recounted an interviewee (village head). Field observation also revealed that all non-community members interested in conducting any activity in any of the studied villages had to report to the fon and present the activity to the fon and other members of the village traditional council prior to the activity.

The results also revealed that farm lands were transferrable from one individual to another on the basis of family relations. "…*I inherited all of my farmlands from my father. Before I got married my father gave me one of his farmlands as support to my household. When he died, I had to inherit the rest of his property including his farmland because I am the first son…"* reported an interviewee in the Bamumbu community.

4.3.4. KNOWLEDGE

The knowledge[4] held by stakeholders was observed to play a relevant role in the way they access forest resources. Stakeholders were observed to promote mainly the knowledge that protects their interests and rights in accessing forest resources. The local community members capitalised on customary rights to gain access to forest resources. "…*our ancestors have been using the forest for a very long time before handing it over to us. It is our custom to ensure that we continue to manage the forest for our livelihood in a way that our children can also inherit it from us…*" recounted an interviewee in the Bangang community. "…*Every member of this community has the right to go into the forest and carry out activities that can better their lives so long as the activities are not prohibited by our customs or laws put in place by the village traditional council. We do not need the government or other people to come and instruct us on how to manage our forest because we have succeeded to manage it for many years now without their intervention*…" recounted another interviewee in the Fossimondi community.

On the other hand, knowledge on state legislation concerning land use and the management of important biodiversity areas through the creation of protected areas was revealed to be promoted by the wildlife conservation organisation in order to gain access to the THWS. "…*All land in Cameroon is owned by the state and not by the local communities. The local communities are only the custodians of the land. With appropriate procedures and permission from the state the management rights accorded to the local communities as custodians of the land can be transferred back to the government. We are helping the*

[4] Knowledge, as used in this study generally refers to the perception held by the actor on forest resource access.

government to facilitate the management of this important biodiversity area through the creation of the protected area. The protected area status is legalised by the state and not by us…" narrated an interviewee (wildlife conservation staff).

4.3.5. POWER AND AUTHORITY

The power and authority of the stakeholders was revealed to influence their ability to gain, maintain and control access to forest resources in the THWS. Power and authority were backed by customary rights and legal rights and were used as claims to access forest resources. Local community members claimed they had legitimate rights to access forest resources based on customary rights. "…*We are the custodians of this land. We are aware that the government has a higher authority than us. However, we are also aware that it is the duty of the government to ensure the wellbeing of its citizens. All local traditional administrators are recognised by the government. So the government cannot tell us that we do not have rights over the same forest that has been in our custody for decades*…" recounted an interviewee (community head) in Bangang community. On the other hand the wildlife conservation organisation claimed that they had the legal rights through state laws to access forest resources. "…*We did not just decide to come in and interfere with the affairs of the local community members over forest activities. We are operating in accordance with the state laws. We have followed the right procedure to acquire a protected area status which will enable the government to regulate human activities in the THWS for the benefit of both the local people and wildlife*…"

Contestation of power and authority over access to forest resources by community members was revealed to be manifested through various strategies:

- **Abstaining from conservation education planning meetings**: "…*the wildlife conservation people have come here several times to educate us on the importance of conserving the forest. However, we are no longer interested and hardly attend such meetings again because there are no practical commitments available to guarantee our livelihood if we keep supporting them*…" recounted an interviewee in the Bechati community. Some interviewees had the feeling that abstaining from conservation education meeting was the best way to prove that they were not interested in the conservation project and are not willing to support the action. They believed that attending conservation education meetings implied they were giving their consent to the wildlife conservation organisation to take over the management of their forest. "…*we do not want the conservation organisation to take over the management of our forest. That is why we are not interested in what they want to say any longer. We have heard enough*

to enable us make our own decisions…" recounted another interviewee in the Bamumbu community.

- **Refusing the wildlife conservation team access to the forest landscape**: "… *we have told the wildlife conservation organisation that we do not want to see them in our forest area. If they come they will be responsible for what will happen to them. The government might have given them the authority to come and do their wildlife conservation activities, however, we still remain the rightful owner of the forest*…" recounted an interviewee in the Fossimondi community. As revealed by field interviews, some of the local communities including Fossimondi and M'mockmbien have refused the wildlife conservation staff access to the forest to conduct bio-monitoring activities on several occasions. "…*We were in the Fossimondi village for more than three days trying to convince the community members to allow us have access to the forest area in order to carry out land use mapping activities but they did not. They told us that if we insist and continue to the forest, we will be responsible for what will happen to us in the forest. We did not want to go against their threat in fear of the repercussion that may occur when you go against cultural norms*…" reported an interviewee (wildlife conservation). Further probing on why the wildlife conservation organisation was denied access to forest area revealed that they did not yet meet the demands of the local community members with respect to the implementation of the conservation project. One of the demands of the local community members was that the wildlife conservation organisation should start to support development projects that will provide alternative livelihood support to the local communities before proceeding with other conservation activities.
- **Converting forest to farmland**: "…*We have started clearing the forest in our community for farming activities. If we use all of the forest for farming activities, there will be no forest left for conservation and the wildlife conservation organisation will go away*…" recounted an interviewee in the Fossimondi community. Some community members, particularly in Fossimondi, started converting forest land into farmland as a strategy to prevent conservation activities. Community members believe they have customary rights over the forest and therefore could use their forest land for their benefit as required by the customary law. "... *Our community reserved some land for future use but since the conservation organisation wants to take the land from us, the traditional council has given community members the right to start farming on the land*…" recounted an interviewee in the Fossimondi community. Field observation also verified that more than four hectares of forest was being converted to farmland during the period of data collection.
- **Using elites to contest wildlife conservation**: another strategy through which local community members expressed their authority and power was through the use of elites (powerful political actors from the local communities). Interview results revealed that

local community members holding important political positions wrote petitions against the creation of a protected area as an approach to wildlife conservation in the project area. "…*Some politicians from the local community wrote petitions against the conservation project to the government. They claim that we are using the conservation project as a means to collect money from the international community and not for the good of the local community members*…" recounted an interviewee (wildlife conservation staff). Interviews with community members also revealed that elites played an important role in decision making with regards to the wildlife conservation project. "…*We do not take decisions about the wildlife conservation project without consulting our elites. We believe they are in the best position to advise us on what to do in certain situations. We are aware that we are dealing with the government and it is difficult to fight the government and win*…" recounted a community head. "… *Most of the time when we have meetings with the wildlife conservation organisation, we will not give them our opinion immediately. We always tell them that the traditional council will sit back and deliberate on the issues and get back to them. This gives us ample time to communicate with our elites and get feedback from them as well*…" recounted anther interviewee from the Folepi community.

On the other hand, the wildlife conservation organisation was said to have the right to access forest resources in the THWS in accordance with the 1994 forestry and wildlife law of Cameroon (Djeukam 2007). The power and authority of the wildlife conservation organisation over access to forest resources in the THWS was observed to be executed through different scenarios:

- **Creation and legalisation of forest management committees:** One of the dimensions through which the wildlife conservation organisation exercised authority and power over the THWS was revealed to be through the creation and the legalisation of forest management committees. Forest management committees were created in all the villages adjacent to the THWS with the main objective that the committees promote the involvement of the local people in decision making regarding forest management issues. It was also revealed through field interview that it was one of the first and main strategies for the wildlife conservation organisation to negotiate access to the forest resources. "…*When this conservation issue started we were happy because of the promises they offered. We understood that it will bring development to our community. The forest management committee was created to facilitate the management process between the wildlife conservation people and the local people. Today we are not seeing any benefits. It appears that more privilege is given to the wildlife in the forest compared to the wellbeing of the community members*…" recounted an interviewee in the M'mockmbin community. It was observed during field study that the forest committee members were chosen to reflect the diversity of different interest groups in the local community. During a meeting

with the forest management committee of Bechati the president expressed some challenges he has been facing in dealing with his community members: "…*my community members feel I am taking a lot of money from the wildlife conservation organisation as the president of the forest management committee but this is not true. I work mainly on a voluntary basis and for the interest of my community. If my community members say they do not want conservation, I cannot go against their will because I am also facing the same challenges as them*…." Interviews with forest management committee members also revealed that there have been conflicting interests in forest management decisions between the forest committee and the village traditional council. "…*we are not finding it easy collaborating with the village traditional council because they feel they should be the one making all the decisions for forest management. When staff from the wildlife organisation normally comes to the community for forest activities, we are obliged to send them to the village traditional council first. They only come back to us if they have been authorised by the village traditional council to do so…*"

Interview results also revealed that the idea of a forest management committee was quickly welcomed by the local community members because of the benefits or added valued they thought the creation of the committees could bring to the local communities. "…*We created the forest management committee to act as a liaison between us and community members. The created committees were also legalised as common initiative groups at the level of the local government to enable them to access other benefits including funding for development projects from the government and international organisations*…" recounted an interviewee (wildlife conservation staff). The results of the interview also revealed that the relationship between the forest management committees and the wildlife conservation organisation has been strained because the reality of the expectations in terms of the development potential was not yet as promising as initially thought. "…*we were very happy because of the development promises that were presented to them when the conservation initiative began back in 2007. Now, I think we do not longer believe any promises from the wildlife conservation organisation because they have not done anything to meet any of their promises*…" recounted an interviewee from the Besali community.

- **Negotiations via local authorities and the local government:** The legal position of the wildlife conservation organisation was revealed as a strength in negotiating access to forest resources. At the community level, local authority members including community heads and key informants like youth leaders, women's leaders' and social group leaders were the main target for negotiations. Meetings were reported to have been held with members of local authorities outside of the community on several occasions in order to negotiate access for the wildlife conservation organisation to the THWS. "…*the wildlife conservation organisation has held several meetings with us at their office and in the city*

to talk about the importance of conservation and to convince us to talk to our community members to collaborate with the conservation project…" recounted an interviewee (community head). "…*the 'king of youth' is the youth representative in our community and he has been attending the meetings that the wildlife conservation organisation has been organising with community leaders outside the community*…" recounted an interviewee (community member). The wildlife conservation organisation believed that one of the ways to win the collaboration of the local community member was to reach them through their leaders. "…*We are doing our best to involve the local community members, we have invited community leaders on several occasions to our headquarters for dialogue. We believe that the local community leaders have a big role to play in the negotiation of conservation processes in their community…*" recounted an interviewee (wildlife conservation staff). Interview results further revealed that the local government has also been actively involved in the negotiation of the wildlife conservation process. This has been above all in situations of conflict resolution. "…*We refused the wildlife conservation organisation access into our forest areas because they have not met our demands. They invited the division officers and the forest officers to come and intimidate us so that we could allow them to go into the forest but we stood our ground that we do not need them in our forest. If the government prefers the animal in the forest to us then it will have to kill all of us first before accessing what they want from the forest*…" recounted an interviewee (key informant in the community). "…*the divisional delegate of forestry and wildlife and her team have been in the field to negotiate with community leaders and to assure them that their conflicts will be adequately resolved*…" recounted an interviewee (wildlife conservation staff).

- **Emphasis on state laws:** The wildlife conservation organisation also placed emphasis on state laws as a means to demonstrate their power and authority to access the THWS. "…*We have stopped the wildlife conservation organisation from coming to our forest because they keep saying that the government has given them the right to go into our forest. The government does not live here, so we have asked them to go and bring the government to take them to the forest*…" recounted an interviewee (community member). "…*we are working in accordance with the forestry and wildlife law and when the management plan of the protected area is developed, law enforcement will be strengthened to prevent illegal activities in the forest area*…" recounted an interviewee (wildlife conservation staff).

Implementation of wildlife conservation laws was revealed to be the responsibility of the Ministry of Forestry and Wildlife. Their enforcement is through the support of eco-guards (forest officers). Forest officers, according to state laws, are assigned to monitor the management of forest resources in the areas under legal (state) protection. The status of the THWS at the time of data collection permitted it to benefit from resource

management via forest officer. However, based on field observation and interview results, forest officers had not yet been assigned to the forest unit. Notwithstanding, it was revealed by field interviews that forest officers have visited the local communities to emphasise the role of government in regulating forest management in a protected area. "*… I have paid a number of visits to the communities in the THWS to sensitize the local people on the roles governing the creation and management of protected areas. They are finding it hard to accept the new changes in the way they should access the forest given the new status of the forest but I am sure with time they will get everything right*…" recounted a forest officer interviewed.

- **Livelihood support:** Another dimension through which the wildlife conservation organisation used its authority and power to negotiate access to forest resources was via livelihood support through alternative forest activities. The support for alternative livelihoods was to reduce the over-dependence of local community members on forest resources with a focus on hunters and farmers. **"…***We have implemented a number of livelihoods activities in some of the communities adjacent to the THWS in order to reduce pressure on the forest. Some of the activities we have supported include beekeeping, pig farming and establishment of oil mills to facilitate palm oil production* …" recounted a wildlife conservation staff member.

This study also established that 23.7% (n=58) of the interviewees have benefitted from alternative livelihood support from the wildlife conservation organisation. Out of the individuals who benefited from the project, 11.8% (n=27) successfully implemented the project. Interview results also revealed that local people viewed alternative livelihood support as an approach to buy them off the forest. Although they accepted the offer for alternative livelihood support they considered it as a gift. They argued that the alternative livelihood support could not compensate for the benefits they access from the forest resources. "…*The forest will never fail to provide us with the resources we need for our daily bread in our community but the support the conservation organisation has given is only temporal and may not support the needs of our household*…." noted an interviewee from the local community. The challenges in meeting the livelihood needs of the local people was also reported to be a major challenge in achieving wildlife conservation objectives in the THWS, as recounted by one of the wildlife conservation employees. "…*It is quite challenging to meet the livelihood needs of the local people. We only have limited resources that can only meet the need of specific individuals in a given time*…"

Both in-depth interviews and field observations revealed human and financial resources to affect the way forest resources were accessed in the THWS. Some of the main challenges limiting resource management and thus access to forest resources included the lack of a legalised management plan for the forest area and limited capacity of local actors with the right to manage forest resources. For instance, forest officers (eco-guards), who were supposed to

regulate the access of forest resources in the THWS given its legal status (wildlife sanctuary), were not yet installed on site to perform management roles. The absence of forest officers was also linked to the fact that there was not yet a legalised management plan to guide the management of resources in the THWS.

Furthermore, field study revealed that the legal transfer of management rights from the local community members to the wildlife conservation organisation through the creation of the protected area did not necessarily reflect the practical situation in the field. Despite the protected status of the forest, which should, in theory, regulate human activities in the gazetted area, these activities were observed to still be uncontrolled within the gazetted area. Field survey through recce walk revealed an encounter rate of 1.05 signs of human activities in the gazetted area. This suggests that the wildlife conservation organisation probably did not have adequate capacity to regulate access to forest resources as presumed, or probably that the mechanisms underlying access to forest resources exhibited dynamic and complex scenarios that needed more long term efforts to tackle them.

4.4 THE ROLE OF STAKEHOLDERS/ACTORS AS MEDIATORS OF ACCESS TO FOREST RESOURCES

The table below (Table 3.2) revealed that actors/stakeholders were the main mediators in forest access processes. Their interests and the legal backing to access forest resources were pursued through different access mechanisms. Interview results revealed that actors' interests were influenced by both institutional settings and individual pursuits. For instance, the local community members were bound by the norms of customary institutions governing forest resources management. Thus, their ability to access forest resources was revealed to be motivated by the local customs, which were also the legal backing used in claiming rights to access forest resources. Similarly, the wildlife conservation institutions were revealed to tie their operations within forest resources access to state laws. Data from this study also revealed that actors placed emphasis on the institution backing their claim to access forest resources in the THWS. It was also revealed that by identifying themselves within an institutional framework, actors were able to identify with the legal backing their access claims were based on. For instance donors may not necessarily identify with customary or state laws governing forest resources in a locality but are still motivated to pursue their interests (biodiversity/forest protection) in a locality. This goes to support the argument that the institutional identity of actors could play a key role in shaping their access to forest resources. Thus, knowledge on institutional setting of actors is indispensable in negotiating access to forest resources.

Table 3.2: Actors, services, and factors shaping access to forest resources and the sources of power underlying access in the THWS

Stakeholders/Actors	Services provided by the THWS	Factors shaping access processes			Legal backing underlying the mechanisms of forest access
		Gain Access	Control Access	Maintain Access	
Local community Members (LCM)	• Source of livelihood (income and employment) • Cultural value (home for ancestors and gods) • Recreation and landscape value	Authority, identity, labour, capital, knowledge	Authority, information	Labour, markets, information	Customary law
Wildlife Conservation Institutions (WCI)	• Biodiversity conservation, landscape, recreation, carbon sequestration • Employment (research/conservation activities)	Identity, negotiation of social relations, knowledge, capital	Negotiation of social relations	Identity, negotiation of social relations, technology, capital, knowledge	State law
Local Government	• Forest resources, biodiversity and landscape	Identity, authority	Authority, identity	Identity, authority	State law
Donors	• Biodiversity, landscape, recreation, carbon sequestration	Identity, capital	Capital	Identity, capital	Convention
Business groups	• Source of goods and raw material (farm produce and NTFPs)	Identity, capital	Capital	Capital, negotiation of social relations	Custom/state law
Tourists	• Recreation	Identity, capital	Negotiation of social relations	Identity, capital	Custom/state law
Researchers	• Research	Identity, capital, knowledge	Negotiation of social relations	Negotiation of social relations, identity, capital	State law, convention

4.5 THE IMPLICATION OF ACCESS MECHANISMS TO FOREST RESOURCE MANAGEMENT IN THE THWS

The way forest resources were accessed in the THWS in relation to the different mechanisms of access was revealed to have multiple implications on forest management. Firstly the contestation over the right to manage forest resources revealed conflict of interests. While local people placed emphasis on customary rights to access forest resources, the wildlife conservation organisation did so on legal rights obtained through state laws. Field interviews revealed that the use of customary and legal rights in negotiating access to forest resources were not yet aligned to ensure sustainable forest management. It was revealed that the local people continued to access forest resources for livelihoods despite the prohibition of human activities in the area gazetted (THWS) by state laws. On the other hand, it was revealed that the state law authorising the transfer of forest management power from the local community members to the wildlife conservation organisation did not provide adequate resources for the implementation of the law. This was observed to have created a loop-hole in forest management processes. Local community members were aware that they would be losing some access rights over forest resources if state laws were to be fully implemented. However, since state laws were not yet fully implemented in the forest area, they took advantage to increase their access to forest resources prior to the full implementation. This scenario was reflected in the case of the Fossimondi community, where community members were given access rights by the village traditional council to access forest land for agricultural activity as a strategy to fight against the conservation activities in the forest area.

The study also revealed that the knowledge and identity of actors played a key role in shaping the way actors could access forest resources. To the local community members, the customary rights were enough to enable them to continue accessing forest resources without fear of being restricted by state legislation on wildlife conservation. The knowledge and identity of the local community members were therefore observed to empower their access to forest resources despite state laws prohibiting access for human activities in protected areas. On the other hand the identity of the wildlife conservation organisation and its knowledge in negotiating forest access empowered it to use strategies in maintaining and controlling access to forest resources. Some of these strategies included livelihood support, creation and legalisation of forest management committees and putting emphasis on the laws regulating access to resources in a protected area.

Using SWOT analysis (strengths, opportunities, weaknesses and threats), the implications for wildlife conservation of access mechanisms to forest resources was assessed (Table 3.3). The implementation of access gain, maintenance and control by the wildlife conservation organisation in the THWS could improve resource availability, planning and management. However, the livelihood needs of the local people come as a potential threat to resources management. The SWOT analysis also suggested that actors' collaboration,

livelihood diversification and building of local capacity in livelihood and forest management could create opportunities for the reconciliation of wildlife conservation and local livelihoods needs. The SWOT analysis also suggested that wildlife conservation could threaten the livelihood needs and cultural values of local community members, create room for marginalisation and could also introduce new dimensions of livelihood challenges to the local people. This could aggravate illegal exploitation and bring about deforestation.

Table 3.3: SWOT analysis of the implications of access mechanisms for forest resources in the THWS

	Implications of access to forest resources for wildlife conservation
Strengths	- Improve forest resource availability - Improve forest management and environmental sustainability - Improve ecological services - Improve biodiversity - Improve land use planning
Weaknesses	- Forest encroachment - Over exploitation - Lack of equity and social justice
Opportunities	- Conserve biodiversity - Encourage livelihood diversification - Manage collaboratively - Build local capacity - Improve local livelihoods
Threats	- Limit livelihood options for local community members - Threaten cultural values - Create room for marginalisation - Encroach on forest and exploit illegally - Aggravate deforestation - Marginalise local community members

5. DISCUSSION

5.1 LINKING FOREST RESOURCES AND STAKEHOLDERS' NEEDS IN THE THWS

The results of this study revealed that stakeholders' connections to and perceptions about the forest were closely linked to their previous experience and interactions with forest resources. this is linked to the argument that forests are viewed, defined, assessed, and valued through different lenses and more often than not stakeholders' interests play an important role in defining the forest (Chazdon et al. 2016). To most local community members, the forest does not only provide resources to sustain livelihood but it is also an integral part of their daily lives. The results revealed a historical connection to forest as a home, the role of forest in culture, forest as wealth and forest as way of life, among other functions. On the other hand, the results revealed that forest managers who were not living in the local community missed out the reality of forest as a home to the local people and a form of lifestyle. Their narration of forest resources focused more on the livelihoods and biodiversity needs, or forest resources. The results also revealed that external stakeholders saw the connection between forest and the local people as having possible substitutes. For instance, the Wildlife Conservation Institution revealed that the main reason they introduced the concept of alternative forest livelihood was to shift the attention of local people from forest resources to other livelihood options that were not forest dependent. However, the response from the local people to alternative livelihood revealed that it could not substitute their needs from forest resources. This implies there is a need to explore further opportunities to improve sustainable forest management other than the creation of alternative forest resources. This finding agrees with the argument that the search for sustainability in global forest management is constantly exploring new strategies to regulate access to forest resources (Chhatre and Agrawal 2008; MacDicken et al. 2015a).

The results of this study also revealed that wildlife conservation through the creation of protected areas was the main approach to regulating access to forest resources in the THWS. However, it is argued that the conservation of forest resources by restricting the access of local people who depend on the forest for livelihoods has proven to be challenging because the forest provides not only ecosystem services to people worldwide but also timber and non-timber forest products that constitute important aspects of livelihood to forest dwelling communities (Newton et al. 2012; Lele et al. 2013). In addition to livelihood benefits, forests also have intangible cultural and spiritual values, which vary from one culture to another (Onel and Mukherjee 2013). The results in this study revealed that the local people attached a lot of cultural importance to the forest. They refer to it as the home of their ancestors and 'a place to offer sacrifices to their ancestors'. They believed that connection with the forest is very important to the wellbeing and success of their community. The different values attached to the forest by stakeholders make it difficult to suggest a simple fix for conservation and wildlife challenges.

5.2 MECHANISMS OF ACCESS TO FOREST RESOURCES IN THE TOFALA HILL WILDLIFE SANCTUARY

This study revealed that access to forest resources was established mainly through an identity that was nested within institutions. However, the power to benefit from forest resources was not only dependent on individual identity but also other factors including knowledge, capital, authority and the negotiation of social identity. This fits with the argument that the power to benefit may be constituted by the material, cultural, political and economic aspects that interact to influence access gain, control and access maintenance in resource (Ribot and Peluso 2003). This study also revealed that stakeholders' ability to mediate others' access was dependent on how they situate themselves within the web of the various factors shaping access to forest resources. The results of this study revealed also that the right to use, manage, transfer and decide rules was sanctioned by customary laws and state laws differently. According to customary laws, the most common scenario of acquiring land was by effective occupation. On the other hand, the right of the wildlife conservation organisation to access forest resources was mainly based on its negotiating ability in accordance with state laws. The local people and the wildlife conservationists were observed to pursue their agenda in the best way that gave them assurance to access forest resources. However, the results of this study also revealed that the rights accorded to the different stakeholders did not necessary equate with their ability to benefit from forest resources. Although the wildlife conservation organisation had the authority to control access to forest resources in the THWS, the execution of this authority was limited by many factors including institutional and power issues within resource management. This finding agrees with the argument that formal property rights do not necessarily imply that the stakeholders holding them are able to derive material benefits from the resources to which those rights apply (Sikor and Lund 2009).

5.3 THE IMPLICATIONS OF POWER AND AUTHORITY IN FOREST MANAGEMENT IN THE TOFALA HILL WILDLIFE SANCTUARY

This study revealed rivalry over authority and power to access forest resources between local community members and the wildlife conservation organisation. The wildlife conservation institution attempted to acquire power by creating sub-institutions (Forest Management Committee) within the local community and by using local authorities to negotiate access to forest resources in their favour .The latter finding agreed with the study of Sikor and Lund (2009) which argued that when authority and power relations are contested, political legal institutions struggle to acquire the power to influence others, by whatever means. The results also revealed that although the wildlife conservation organisation was empowered with legal authority and rights over forest management, in the end it did not have total control over forest resources. Local community members employed

several strategies to continuing sustaining their access to forest resources despite legitimacy transfer in management power to the wildlife conservation organisation. Thus, in reality, they did not actually have the power to control resource access. This aligned with the argument that in the case of forest management, an institution is considered to have power over forest resources only when it can determine the conditions of access to forest resources, thereby controlling other actors' interventions in the forest (Ojha et al. 2014).

In addition, this study also revealed that the rule of institutions in the mediation of access to forest resources to be inevitable. For actors to pursue their claim to access forest resources they needed to align themselves with an institution that held some level of authority to access resources in the THWS. Thus, individual choices to access forest resources were observed to be nested within the framework of institutional settings. Institutional perspectives were revealed to emphasise the social, normative, or rational character rather than focusing on the formal political aspects. The conservation practices of the wildlife conservation organisation were revealed not only to focus on legal documents guiding the management of forest resources in a protected area. It went beyond this to negotiate social relations and other rational characteristics like engaging the local people in livelihood support in order to strengthen it access to forest resources. This included the creation of Forest Management Committees and Forest Protection Funds. The above finding reflected the processes in which actors, consciously or unconsciously, mediated power relations to regulate their access to forest resources (Leach et al. 1999; Koning and Cleaver 2012).

5.4 THE EFFECT OF RESTRICTION OF ACCESS TO FOREST RESOURCES ON LIVELIHOOD AND WILDLIFE CONSERVATION IN THE TOFALA HILL WILDLIFE SANCTUARY

The results of this study revealed that 88.2% of the studied population relied mainly on forest resources for their livelihoods, with limited alternatives available to them. In addition, the connection between the local people and the forest was not only limited to livelihood. The forest was also a home and a place to look to for community wellbeing (culture). As expected, the human needs and wildlife needs of the forest were in conflict: forest activities were revealed to have negative impacts on forest resources. The competitive nature of the relationship between wildlife conservation and local livelihoods was also revealed to complicate forest resource management. While local people emphasise access to forest resources based on customary rights, the wildlife conservation organisation emphasised restricted access. This contestation resulted in different claims which need to be monitored and addressed through space and time in order to facilitate the sustainable use of forest resources in the THWS. The latter results align with the argument that in the majority of tropical countries, human activities are continuously changing the land use in order to gain access to natural resources through clearance of forests for agricultural activities and urban expansion (Romijn et al. 2015). Deforestation through agriculture in the tropics has

also been argued to be one of the main threats to wildlife conservation (Dunn et al. 2014; D'Annunzio et al. 2015). Furthermore, it is also argued that conflicting interests in forest resource usage have been a result of uneven distribution of power between actors in the processes leading to the negotiation of management and implementation policies (Nkemnyi et al. 2016). The latter arguments agree with the findings of this study, which revealed that local community members were revealed to have the perception that they were losing their authority and power over resource management and thus formulated strategies which were considered inconsistent with the agenda of the wildlife conservation organisation, as a means to restore their access control of forest resources.

The findings in this study suggested that the introduction of formal structures (legal institutions) through laws and policies as a strategy to regulate access to forest resources and promote biodiversity conservation in the studied area did not yield the intended outcomes. The efforts of legalised institutions that have been assigned power and authority within forest management were revealed to focus more on the role of the law and on the negotiation of opportunities that could give them more authority and power over forest resources. The nature of conflicts in the contestation of access to forest resources also suggested that the institution assigned with the legitimate power to manage forest resources paid less attention in the negotiation of management arrangements that could work both for forest conservation and for the local people competing for access to forest resources. This was observed to introduce tension into the issues of forest access and forest management. The latter finding also agreed with the argument that in most scenarios, conservation of biodiversity is likely to introduce new livelihood challenges which may result in management challenges (Sunderlin et al. 2005; Wunder et al. 2014) and that in most cases, the implementation of human-wildlife conflict policies does not take systems complexity into account (Malawska et al. 2014). The results of this study also aligned with the latter argument as it suggests that external stakeholders had a narrow view of wildlife conservation conflicts.. Their analysis of the challenges around this were limited to livelihood needs and paid less attention to the psychological and cultural connections established by local people with the forest.

The findings in this study also suggested that for both livelihoods and wildlife conservation to sustainably benefit from access to forest resources in the THWS, there could be less emphasis on the roles of legal laws and more focus on negotiation that would benefit both interests. There is an urgent need to strengthen and create new opportunities and space that could enable local community members to better participate in management and policy discourses. In addition, opportunities and situations that could instigate competition over authority and power in access control should be closely monitored and appropriate measures developed to mitigate them. In general, there is also the need to further reconsider the type of policy tools and institutional arrangements that could work best in the mitigation of forest resource contestation between forest dwelling communities and those legal institutions sanctioned to control access to forest resources.

6. CONCLUSION

The results of this study revealed that stakeholders' connections to and perceptions of forest resources were closely linked to their previous experience and interactions with forest resources. To most local community members, the forest does not only provide resources to sustain livelihood but is also an integral part of their daily lives. To external stakeholders' forest resources are more a concern of livelihoods and biodiversity needs. These findings clearly point out that the relationships and meaning derived by stakeholders in relation to forest access is shaped by their interests and previous encounters. This also supports the rationale behind the dynamic nature of environment and development challenges. However, this study also revealed that the power to benefit from forest resources went far beyond the relationship established by individuals with the forest. For instance, although the local people were the main actors interacting with forest resources on a daily basis, the creation of the THWS in principle has prohibited them from accessing certain resources from the forest without adequate authority from the legalised management institution. On the other hand, although the wildlife conservation organisation was equipped with the legal power to manage forest resources in the gazetted area of the forest, in practice they could not effectively implement this because of inadequate capacity. The results also revealed that the right to use, manage, transfer and decide rules over forest resources was sanctioned by customary laws and state laws differently. Through these laws the local people and the wildlife conservationists were observed to pursue their agenda in the best way that gave them assured access to forest resources. Thus, this study established that the collaboration between livelihoods and wildlife conservation does not work when based solely on principles laid out by legislation but should in practice create opportunities that could bring forth meaningful collaboration based on field realities.

This study also revealed that the role of institutions in mediating access to resources is crucial in sustainable forest management. Local community members and the wildlife conservation organisation were revealed to constantly construct opportunities that could facilitate their access to forest resources in relation to the institutional settings they identified themselves with. These opportunities included the negotiation of social relations and the creation of other institutions that could facilitate access opportunities. This implied that institutional settings have a key role to play in the negotiation of access to forest resources and should be duly considered when negotiating access gain, control and maintenance. The nature of conflicts in forest resources in the THWS also suggested that the institution assigned with the legitimate power to manage forest resources paid less attention in the negotiation of management arrangements that could work both for forest conservation and for the local people's livelihoods. This was observed to introduce tensions into forest usage and in forest management. The challenges faced by the legal institution in regulating access to forest resources is suggested by this study to be a result of their narrow interpretation of the relationship between wildlife conservation and local livelihood. They actually thought that providing alternative livelihoods to local people could limit their

interests in the forest resources and win support for wildlife conservation. However, the local people did not perceive it in the same light as the wildlife conservationists. Thus, this study argues that there is an urgent need to strengthen existing opportunities and create new opportunities and spaces that could enable local community members to better participate in management and policy discourses. This would strengthen the ability of internal and external actors to understand each other and to better design effective collaboration strategies. These new opportunities could be made possible by revisiting the planning phase of the conservation project and empowering key local people to take more lead roles in management. In addition, opportunities and situations that could instigate competition over authority and power in access control should be closely monitored and appropriate measures developed to mitigate them. This includes less emphasis on the role of law as a policy implementation tool in forest conservation and the creation of spaces for open dialogue which could generate new knowledge and management scenarios.

REFERENCE

Achterkamp, M.C. & Vos, J.F.J., 2007. Critically Identifying Stakeholders Evaluating boundary critique as a vehicle for stakeholder identification. *Systems Research and Behavioral Science*, 14(September 2005), pp.3–14.

Adam, Y.O. & Eltayeb, A.M., 2016. Forestry decentralization and poverty alleviation: A review. *Forest Policy and Economics*. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934116300971.

Agrawal, A., Chhatre, A. & Hardin, R., 2008. Changing governance of the world's forests. *Science*, 320(5882), pp.1460–2. Available at: http://www.ncbi.nlm.nih.gov/pubmed/18556552 [Accessed March 1, 2012].

Arts, B., 2014. Assessing forest governance from a " Triple G " perspective : Government , governance , governmentality. *Forest Policy and Economics*, 49, pp.17–22. Available at: http://dx.doi.org/10.1016/j.forpol.2014.05.008.

Bawa, K.S., Rai, N.D. & Sodhi, N.S., 2011. Rights, Governance, and Conservation of Biological Diversity. *Conservation Biology*, 25(3), pp.639–641.

Butchart, S.H.M. et al., 2010. Global biodiversity: indicators of recent declines. *Science*, 328, pp.1164–8. Available at: http://www.ncbi.nlm.nih.gov/pubmed/20430971 [Accessed December 11, 2013].

Chazdon, R.L. et al., 2016. When is a forest a forest? Forest concepts and definitions in the era of forest and landscape restoration. *Ambio*, 45(5), pp.538–550.

Chhatre, A. & Agrawal, A., 2008. Forest commons and local enforcement. *Proceedings of the National Academy of Sciences of the United States of America*, 105(36), pp.13286–91. Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2533182&tool=pmcentrez&rendertype=abstract.

Cleaver, F. et al., 2013. Beyond negotiation?: Real governance, hybrid institutions and pastoralism in the Usangu Plains, Tanzania. *Environment, Politics and Development Working Paper Series*, 61.

Cleaver, F., 2002. Reinventing Institutions : Bricolage and the Social Embeddedness of Natural Resource management. *The European Journal of Development Reinventing Institutions*, 14(2), pp.11–30.

Crang, M. & Cook, I., 2007. Analyzing field methods. In *Doing Ethnographies*. London, California, New Delhi, Singapore: Sage Publications, p. 244.

D'Annunzio, R. et al., 2015. Projecting global forest area towards 2030. *Forest Ecology and Management*, 352, pp.124–133. Available at: http://dx.doi.org/10.1016/j.foreco.2015.03.014.

Daur, N., Adam, Y.O. & Pretzsch, J., 2016. Land Use Policy A historical political ecology of forest access and use in Sudan : Implications for sustainable rural livelihoods. *Land Use Policy*, 58, pp.95–101. Available at: http://dx.doi.org/10.1016/j.landusepol.2016.06.016.

Dessie, Y. et al., 2013. The role of institutions and social learning in soil conservation innovations: Implications for policy and practice. *Environmental Science & Policy*, 27(2006), pp.21–31. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1462901112001918.

Dewi, S. et al., 2013. Protected areas within multifunctional landscapes: Squeezing out intermediate land use intensities in the tropics? *Land Use Policy*, 30(1), pp.38–56. Available at: http://dx.doi.org/10.1016/j.landusepol.2012.02.006.

Djeukam, R., 2007. *The Wildlife law as a tool for protecting threatened species in Cameroon*,
Dressler, W. et al., 2010. From hope to crisis and back again? A critical history of the global CBNRM narrative. *Environmental Conservation*, 37(1), pp.5–15. Available at: http://www.journals.cambridge.org/abstract_S0376892910000044 [Accessed March 6, 2012].
Duffy, R., 2014. Waging a war to save biodiversity : the rise of militarized conservation. *International Affairs 90:*, 90(4), pp.819–834.
Dunn, A. et al., 2014. *Revised Regional Action Plan for the Conservation of the Cross River Gorilla (Gorilla gorilla diehli) 2014–2019*, New York, NY, USA.: 2014 IUCN/SSC Primate Specialist Group and Wildlife Conservation Society.
Ezzine de Blas, D., Ruiz-Pérez, M. & Vermeulen, C., 2011. Management Conflicts in Cameroonian Community Forests. *Ecology And Society*, 16(1).
FAO, 2015. *Global Forest Resources Assessment 2015: How are the world's forest changing?*, Rome: FOA. Available at: http://www.fao.org/forestry/fra2005/en/.
Faye, P., 2015. Forest Policy and Economics Choice and power : Resistance to technical domination in Senegal â€™ s forest decentralization. *Forest Policy and Economics*, 60, pp.19–26. Available at: http://dx.doi.org/10.1016/j.forpol.2014.10.004.
Gray, C.L., Bozigar, M. & Bilsborrow, R.E., 2015. Declining use of wild resources by indigenous peoples of the Ecuadorian Amazon. *Biological Conservation*, 182, pp.270–277. Available at: http://dx.doi.org/10.1016/j.biocon.2014.12.022.
Keenan, R.J. et al., 2015. Dynamics of global forest area: Results from the FAO Global Forest Resources Assessment 2015. *Forest Ecology and Management*, 352, pp.9–20. Available at: http://dx.doi.org/10.1016/j.foreco.2015.06.014.
Khadka, C. et al., 2013. Problem structuring in participatory forest planning. *Forest Policy and Economics*, 26(January 2013), pp.1–11.
Köhl, M. et al., 2015. Forest Ecology and Management Changes in forest production , biomass and carbon : Results from the 2015 UN FAO Global Forest Resource Assessment q. *Forest Ecology and Management*, 352, pp.21–34. Available at: http://dx.doi.org/10.1016/j.foreco.2015.05.036.
Koning, J. de, 2011. *Reshaping Institutions: Bricolage Processes in Smallholder Forestry in the Amazon*. Wageningen University.
Koning, J. de & Cleaver, F., 2012. Institutional bricolage in community forestry: an agenda for future research. In B. Arts et al., eds. *Forest-people Interfaces: Understanding Community Forestry and Bio-cultural Diversity*. Wageningen, The Netherlands: Wageningen Academic Publishers, p. 292.
Kvale, S. & Brinkmann, S., 2009. *Interviews: Learning the craft of qualitative research interviewing* 2nd ed., Los Angeles, London, New Delhi, Singapore: Sage Publications.
Larson, A.M. & Ribot, J.C., 2007. The poverty of forestry policy: Double standards on an uneven playing field. *Sustainability Science*, 2(2), pp.189–204.
Leach, M., Mearns, R. & Scoones, I., 1999. Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management. *World Development*, 27(2), pp.225–247. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0305750X98001417.
Lele, S. et al., 2013. Ecosystem Services: Origins, Contributions, Pitfalls, and Alternatives. *Conservation and Society*, 11(4), p.343. Available at: http://www.conservationandsociety.org/text.asp?2013/11/4/343/125752 [Accessed June 5, 2014].

Lepper, C.M. & Goebel, S.J., 2010. Community-based natural resource management, poverty alleviation and livelihood diversification: A case study from northern Botswana. *Development Southern Africa*, 27(5), pp.725–739. Available at: http://www.tandfonline.com/doi/abs/10.1080/0376835X.2010.522834 [Accessed May 7, 2012].

Li, T.M., 2007. Practices of assemblage and community forest management. *Economy and Society*, 36(2), pp.263–293. Available at: http://www.informaworld.com/10.1080/03085140701254308.

Lin, P. & Chang, C., 2011. Towards sustainable community-based natural resource management in the indigenous Meqmegi community in Taiwan : Rethinking impacts of local participation. *Natural Resource Forum*, 35, pp.134–144.

Lund, J.F., Balooni, K. & Casse, T., 2009. Change We can Believe in? Reviewing Studies on the Conservation Impact of Popular Participation in Forest Management. *Conservation and Society*, 7(2), p.71. Available at: http://www.conservationandsociety.org/text.asp?2009/7/2/71/58640 [Accessed August 20, 2012].

MacDicken, K. et al., 2015. Introduction to the Changes in Global Forest Resources from 1990 to 2015. *Forest Ecology and Management*, 352, pp.1–2. Available at: http://dx.doi.org/10.1016/j.foreco.2015.06.018.

MacDicken, K.G. et al., 2015. Global progress toward sustainable forest management. *Forest Ecology and Management*, 352, pp.47–56. Available at: http://dx.doi.org/10.1016/j.foreco.2015.02.005.

Macqueen, P., 2012. Last chance to see : the role of phylogeography in the preservation of tropical biodiversity. *Tropical Conservation Science*, 5(4), pp.417–425.

Malawska, A., Topping, C.J. & Nielsen, H. ??rsted, 2014. Why do we need to integrate farmer decision making and wildlife models for policy evaluation? *Land Use Policy*, 38, pp.732–740. Available at: http://dx.doi.org/10.1016/j.landusepol.2013.10.025.

Mason, J., 2002. *Qualitative Researching* 2nd ed., London, Thousand Oaks, New Delhi: SAGE Publications.

Mayaux, P. et al., 2005. Tropical forest cover change in the 1990s and options for future monitoring. *Phil. Trans. R. Soc. B*, 360, pp.373–84. Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1569459&tool=pmcentrez&rendertype=abstract [Accessed December 13, 2013].

McGinnis, M.D., 2011. An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework. *Policy Studies Journal*, 39(1), pp.169–183. Available at: http://doi.wiley.com/10.1111/j.1541-0072.2010.00401.x.

Newton, P. et al., 2012. Consequences of actor level livelihood heterogeneity for additionality in a tropical forest payment for environmental services programme with an undifferentiated reward structure. *Global Environmental Change*, 22(1), pp.127–136. Available at: http://dx.doi.org/10.1016/j.gloenvcha.2011.10.006.

Nkemnyi, M.F. et al., 2014. Boosting Knowledge Through Awareness Raising: An Underexploited Opportunity for Community Forestry in South West Cameroon. *Environment and Natural Resources Research*, 4(3), pp.39–50.

Nkemnyi, M.F. et al., 2016. The influence of institutions on access to forest resources in Cameroon: The case of Tofala Hill Wildlife Sanctuary. *Journal for Nature Conservation*, 34, pp.42–50. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1617138116300772.

Ojha, H.R. et al., 2014. Can authority change through deliberative politics?. Lessons from the four decades of participatory forest policy reform in Nepal. *Forest Policy and Economics*, 46, pp.1–9. Available at: http://dx.doi.org/10.1016/j.forpol.2014.04.005.

Onel, N. & Mukherjee, A., 2013. The effects of national culture and human development on environmental health. *Environment, Development and Sustainability*, 16(1), pp.79–101. Available at: http://link.springer.com/10.1007/s10668-013-9464-y [Accessed March 24, 2014].

Ostrom, E., 2003. How types of goods and property rights joingly affect collective action. *Journal of Theoretical Politics*, 15(3), pp.239–270.

Ostrom, E. & Cox, M., 2010. Moving Beyong panaceas: a multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation*, 37(4), pp.451–463.

Oyono, P.R., Samba, S.K. & Biyong, M.B., 2012. Beyond the decade of policy and community euphoria: The state of livelihoods under new local rights to forest in rural Cameroon. *Conservation and Society*, 10(2), p.173. Available at: http://www.conservationandsociety.org/text.asp?2012/10/2/173/97489 [Accessed August 20, 2012].

Parrotta, J. a. et al., 2009. Traditional forest-related knowledge and sustainable forest management in Asia. *Forest Ecology and Management*, 257(10), pp.1987–1988. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0378112709002217 [Accessed December 13, 2013].

Purnomo, H. et al., 2012. Rights and Wellbeing: An Analytical Approach to Global Case Comparison of Community Forestry. *Journal of Sustainable Development*, 5(6), pp.35–48. Available at: http://www.ccsenet.org/journal/index.php/jsd/article/view/17298 [Accessed August 20, 2013].

Rands, M.R.W. et al., 2010. Biodiversity conservation: challenges beyond 2010. *Science*, 329, pp.1298–303. Available at: http://www.ncbi.nlm.nih.gov/pubmed/20829476 [Accessed August 6, 2013].

Ribot, J.C., Lund, J.F. & Treue, T., 2010. Democratic decentralization in sub-Saharan Africa: its contribution to forest management, livelihoods, and enfranchisement. *Environmental Conservation*, 37(1), pp.35–44. Available at: http://www.journals.cambridge.org/abstract_S0376892910000329 [Accessed August 27, 2014].

Ribot, J.C. & Peluso, N.L., 2003. A Theory of Access. *Rural Sociology*, 68(2), pp.153–181. Available at: http://doi.wiley.com/10.1111/j.1549-0831.2003.tb00133.x.

Romanach, S.S., Benscoter, A.M. & Brandt, L.A., 2016. Value-focused framework for defining landscape-scale conservation targets. *Nature Conservation*, 32, pp.53–61.

Romijn, E. et al., 2015. Assessing change in national forest monitoring capacities of 99 tropical countries. *Forest Ecology and Management*, 352, pp.109–123. Available at: http://dx.doi.org/10.1016/j.foreco.2015.06.003.

Saunders, F.P., 2014. The promise of common pool resource theory and the reality of commons projects. *International Journal of the Commons*, 8(2), pp.636–656.

Scarlett, L. & Boyd, J., 2015. Ecosystem services and resource management: Institutional issues, challenges, and opportunities in the public sector. *Ecological Economics*, 115, pp.3–10. Available at: http://dx.doi.org/10.1016/j.ecolecon.2013.09.013.

Schwartzman, S., Moreira, A. & Nepstad, D., 2000. Arguing Tropical Forest Conservation : People versus Parks. *Conservation Biology*, 14(5), pp.1370–1374.

Sikor, T. & Lund, C., 2009. Access and property: A question of power and authority. Chapter

1 of Property, Authority and Access to Natural Resources. *Development and Change*, 40(1), pp.1–22.

Stone, M.T. & Nyaupane, G., 2014. Rethinking community in community-based natural resource management. *Community Development*, 45(1), pp.17–31. Available at: http://www.tandfonline.com/doi/abs/10.1080/15575330.2013.844192 [Accessed May 6, 2014].

Sunderlin, W.D. et al., 2005. Livelihoods, forests, and conservation in developing countries: An Overview. *World Development*, 33(9), pp.1383–1402. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0305750X05000926 [Accessed July 1, 2011].

Whiteman, A., Wickramasinghe, A. & Piña, L., 2015. Global trends in forest ownership, public income and expenditure on forestry and forestry employment. *Forest Ecology and Management*, 352, pp.99–108. Available at: http://dx.doi.org/10.1016/j.foreco.2015.04.011.

Wiersum, K.F., Ingram, V.J. & Ros-Tonen, M. a. F., 2013. Governing access to resources and markets in non-timber forest product chains. *Forests, Trees and Livelihoods*, 23(1–2), pp.6–18. Available at: http://www.tandfonline.com/doi/abs/10.1080/14728028.2013.868676.

Wunder, S., Angelsen, A. & Belcher, B., 2014. Forests, Livelihoods, and Conservation: Broadening the Empirical Base. *World Development*, 64(1–11).

Yufanyi Movuh, M.C., 2013. Analyzing the Establishment of Community Forestry (CF) and Its Processes Examples from the South West Region of Cameroon. *Journal of Sustainable Development*, 6(1), pp.76–89. Available at: http://www.ccsenet.org/journal/index.php/jsd/article/view/23398 [Accessed August 20, 2013].

CHAPTER 4

RECONSTITUTING THE ROLE OF CUSTOMARY STRUCTURES IN PROTECTED FOREST MANAGEMENT IN CAMEROON

ABSTRACT

This chapter illustrates how institutional transition processes influence sustainability outcomes in protected forest management in Cameroon, using the case of the Tofala Hill Wildlife Sanctuary (THWS). The study reveals that the major obstacle to t attaining sustainable forest management does not necessarily only lie in the conflicting interests of actors, but also in the social processes that guide the negotiation of these conflicting interests. Processes initiated by bureaucratic institutions did not appreciate sufficiently the efforts of the existing customary structures as previous custodians of forest resources. This was revealed to be one of the main sources of conflict between the different institutions competing for authority over forest resources. This study argues that customary structures should not only be regarded as caretakers in the processes of forest management. They are part of complex power configurations that can impede or enhance sustainable forest management processes. There is therefore a need to carefully explore and understand the various contexts in which these complex configurations influence sustainable forest management.

Key words: Institutional bricolage; local tradition; forest management politics; customary laws; wildlife conservation policy; Cameroon

1. INTRODUCTION

Natural resource management in developing countries is increasingly mimicking western models, while the contribution of customary institutions is often overlooked (Fairhead and Leach 1995; Awono et al. 2014). However, it is argued that before colonization took firm roots in Africa, indigenous rulers occupied a unique position in the management of natural resources (Appiah-Opoku 1999). Indigenous peoples inhabit nearly 20% of the planet, mainly in areas where they have lived for thousands of years (WWF International 2008). They are among the earth's most important stewards, as evidenced by their high degree of interaction with natural resources including in high-biodiversity regions of the world. Today, the rights of indigenous people in the management of community resources have been compromised (Yufanyi Movuh 2012). Commonly, indigenous resource management structures are not recognised and this may lead to management deficits in terms of the organisation of collective action needed for effective outcomes (Cleaver 2002; Awono et al. 2014). Therefore, it has been argued that a collaborative planning approach to natural resource management may be more effective, particularly in situations where there are multiple actors with conflicting interests (Raitio 2012; Wodschow et al. 2016). This is linked to the notion that reconciling conflicting interests will improve collaboration (Tieguhong et al. 2015). Notwithstanding, it is also noted that reconciling conflicting interests in natural resource management leads to hard choices (McShane et al. 2011; Nkemnyi et al. 2013). Forest users often hold diverse values and have diverse interests relating to forest resources. Aligning these interests and values with sustainable forest management objectives may require complex settings and arrangements that capture the interests of the majority of actors (Ostrom and Cox 2010).

Institutional and policy factors are argued to be important underlying causes which need to be understood to effectively combat degradation and deforestation in the long-term (Somorin et al. 2014; Tegegne et al. 2016). Institutional and policy factors guide interventions designed to affect environmentally-related incentives, knowledge and institutions, decision making and behaviour in forest governance (Agrawal et al. 2008). Despite the emergence of different forest governance regimes, less is known about the effectiveness and efficiency of institutions in terms of forest conservation and local development (Koning 2011). Yet institutions play a significant role in shaping access to forest resources and in contributing to poverty alleviation (Bastiaensen et al. 2005; Agarwal 2009). Institutional challenges are argued to be among the main causes of failure in forest governance in Cameroon (Alemagi 2011). Other causes of poor forest management have been argued to include inadequate local participation, inequity and lack of social justice concerning forest users (Mbatu 2015; Nkemnyi 2016).

Failure to achieve the intended policy objectives in forest management could be explained by the social characteristics of the context in which policy is implemented (Koning 2011). It is important to understand the extent to which different actors participating in

policy implementation are actually institutionalised (Meagher et al. 2014). This is because, most often, formalised (bureaucratic) structures reflect a consensual model of society, suggesting that the new arrangements work for everyone, instead of a conflictual model questioning for whom these practices work and why and who pays the price for them. It is also argued that bureaucratic institutional arrangements to access forest resources are disproportionately advantageous for powerful actors who can have their access claims recognized as legitimate property by a legal political institution (Yufanyi Movuh and Schusser 2012; Purnomo et al. 2012).

The participation of local institutions in forest governance offers an improved context for local decision-making on environmental problems and access to resources (Leach et al. 1997; Forsyth et al. 1998; Sanginga et al. 2010). A corrective analysis of the roles of local community members in forest management (expressed through norms, beliefs, local regulations and practices) indicates the impact of new forest management institutions (Koning 2011). The analysis of shifts in roles could enable an understanding of how new knowledge is introduced into socio-cultural life and how networks and local knowledge influence the functioning of an increasingly complex governance system (Cleaver 2001; Cleaver 2002). Understanding the concept of institution and how institutions can be designed to benefit natural resource management is relevant in designing its use and applicability (Dessie et al. 2013).

The theory of institutional bricolage presents relevant argumentation on how institutions interact and how interests and roles influence the intended and unintended outcomes in natural resource governance (Cleaver 2001). Institutional bricolage refers to the construction and borrowing of disparate institutional elements in order to create frameworks for practices and decision making (Cleaver 2002). In addition, institutional bricolage also emphasises the active roles of actors; iterating that actors are not just linked to appropriate ways of doing and being, but also to beliefs or traditions. Local actors have various institutional options to choose from when making decisions about their forest practices. This could result in processes in which actors, consciously or unconsciously, adhere to local, appropriate, or traditional institutions instead of the forest regulations (Cleaver et al. 2013). 2013). Thus, the rule of informal and formal institutions in forest management is considered important as both play a key role in enforcing mechanisms that shape access to forest resources (Koning and Cleaver 2012). Institutions are mediated by power relations and this also influences access to resources, which might result in particular livelihood strategies and, eventually, shape ecological change (Leach et al. 1999).

This study examines the role of customary structures[5] in forest management in the Tofala Hill Wildlife Sanctuary (THWS). It evaluates how the role of these structures in forest governance has changed as a result of the introduction of bureaucratic structures and how the shift in forest management leadership has affected forest management.

[5] Customary structures are responsible for the implementation of practices associated at the local community level.

2. THEORETICAL FRAMEWORK

2.1. SITUATING CUSTOMARY STRUCTURES IN FOREST MANAGEMENT IN CAMEROON

Prior to Cameroon's colonisation by Germany, forest management was mainly 'clanic ownership' (Brown and Lassoie 2010; Yufanyi Movuh 2012). The system of accountability for forest resources was with those with traditional historical authority, in the form of lineage heads or the village chief (Brown and Lassoie 2010). Ownership and management of forest units by clans and ethnic groups was a result of first occupancy. Forest resources were managed as common property by the lineage, clan or ethnic groups with the leadership of the village chief (Oyono 2004a; Oyono 2004b). In 1884, when Germany colonised Cameroon, forest management shifted from "clanic ownership'' to state ownership (Brown and Lassoie 2010). The Germans stopped further migrations that were the custom of clans and lineage and forced the people to resettle along the roads in newly created villages consisting mostly of clans and lineages. Forest land was claimed by the state because they considered it as land without masters (Yufanyi Movuh 2012). When colonisation changed hands after the First World War and power was transferred from the Germans to the French and British, they continued with the same management approach.

After Cameroon gained independence in 1960, the colonial legacy of the state in forest management and the marginalisation of the customary structure was continued through the passing of the forest legislation of 1973 (Ordinance no. 73/18 and its instruments of application) and 1981 (Law no. 81/13) respectively. Although these laws granted local people some user rights on national lands to meet domestic needs, these rights could be overruled by the state for reasons of public interest (Djeumo 2001; Oyono 2005).

The 1994 Forestry Policy in Cameroon is argued to have been developed as a result of the recognition that an inclusive management approach could enhance sustainable forest management (Djeumo 2001; Jum et al. 2007). The 1994 Forestry Law (Law no. 94/01 of 20 January 1994 and its Decree of Application no. 94/436 of 23 August 1995) classifies forests in Cameroon into two main categories: the permanent forest estate or classified forest and the non-permanent forest estate (Cheo 2010; Alemagi 2011). The permanent forest can only be used for forestry purposes or as wildlife habitat while the non-permanent forest estate consists of forested land which can be converted to non-forest use (Geschiere 2011). This new legislation also addressed several aspects of the sharing of responsibilities and benefits in forest management.

2.2. ACTORS AND INSTITUTIONS

This study adopts the definition of institutions by McGinnis (2011), who defines institutions as human-constructed constraints or opportunities within which individual choices take place and which shape the consequences of their choices. In order to better understand the functioning of institutions, different schools of thought on institutional approaches should be considered. There exist two main schools of thought, namely mainstream institutionalism and critical institutionalism. Mainstream institutionalism holds that "the role of institutions is to provide information and assurance about the behaviour of others, to offer incentives to behaviour in accordance with collective goods and to monitor opportunistic behaviour" (Aligica and Boettke 2011). Critical institutionalism draws on evidence from mainstream institutionalism and brings in new perspectives. In addition to exploring complexity, critical institutionalism scrutinises the uneven costs and benefits of public participation and the ways in which power works through local institutions (Koning and Cleaver 2012). This has advanced the scope of mainstream institutionalism (Table 4.1). Critical institutionalism holds that institutions for natural resource management are not necessarily designed for a specific purpose given that the purpose of an institution can change. In other words institutions are constituted on the basis of elements borrowed or adapted from other, previous arrangements and institutions (Cleaver 2001).

Table 4.1: Key features of mainstream and critical institutionalism thinking

Mainstream institutionalism	**Critical institutionalism**
Formal/public institution in nested layers	Networks of arrangement, blurred boundaries, intersecting domains/scales
Institutions formed through design and crafting	Institutions pieced together through processes of bricolage
Decision-making and negotiations conducted in public fora	Decision-making and negotiation embedded in everyday life, formal and informal institutions
'Bounded rationality' models of agency – individuals as strategic resource appropriators	Agency shaped consciously and non-consciously; individuals with complex identities
Behaviour is shaped by incentives, rules, sanctions	Behaviour shaped by blended social rationalities
Efficiency of resource management through crafted institutions	Social inclusion/exclusion reproduced through institutions

Source: De Koning and Cleaver (2012)

It is argued that both schools of thought face a number of challenges which include the need to balance policy legibility with the recognition of complexity as well as the need to avoid too much abstraction (Koning and Cleaver 2012). Thus, institutions must be understood in local and non-local contexts (Ostrom 2005). Institutions are animated by

people, and analyses should offer explanations of how and why this occurs and with what effects (Koning 2011; Dondeyne et al. 2012).

2.3. INSTITUTIONAL BRICOLAGE

To better explain the process of institutional change in forest management practices in the THWS with a focus on the role of customary structure, the concept of institutional bricolage has been introduced. Institutional bricolage refers to "the construction and borrowing of disparate institutional elements in order to create frameworks for practices and decision making" (Cleaver 2002). Institutional bricolage has evolved from questioning the faith placed on designing robust institutions to fight resource degradation, as well as the assumptions about the direct relationship between policy and local practices (Koning and Cleaver 2012). Bricolage is more than an articulation of the dynamic relationship between social structure and individual agency. While institutions are the key mechanisms which channel societal resources into outcomes by refurbishing and re-arranging existing relationships and classifications (Cleaver 2001; Cleaver 2002), the complexity and historically layered character of the institutional context causes the relationship between policy and changes in practices to be difficult to predict and indirect at best. Institutional processes are dynamically played out through different forms and in varying contexts (Koning and Cleaver 2012).

As elaborated by Cleaver (2002), in the process of bricolage a set of actors (bricoleurs) participate and apply their knowledge in different ways, resulting in a rich diversity of institutional arrangements. The role of different actors, as well as all the different social and anthropological characteristics that shape institutions, is considered very relevant in institutional bricolage. Bricolage provides a way to see culture, norms, and rules in an institutional arrangement. Institutional bricolage iterates that institutional norms are dynamic, evolving over time. Therefore, institutional norms are continuously being shaped and reshaped over time. The terms 'bureaucratic' and 'socially embedded' are used in institutional bricolage to differentiate between formal and informal institutions. Bureaucratic institutions are often introduced by governments or agencies. They are characterized by organizational structures, contracts and legal rights. On the other hand, socially embedded institutions are distinguished by culture, social organization and daily practice.

When new bureaucratic institutions or policies are introduced, this can trigger three different types of processes or a combination thereof: aggregation, alteration, and articulation (Koning 2011; Koning and Cleaver 2012). These processes describe the way in which bureaucratic institutions or policies become socially embedded (Table 4.2). *Aggregation* is defined as the recombination of various institutional elements (both bureaucratic and socially embedded institutions) (Koning 2011). The aggregation of institutional elements refers to the processes of mediation of various rules, norms, and beliefs (Cleaver 2002). Another characteristic of aggregation is the creation of multipurpose

institutions. *Alteration* refers to the adaptation or reshaping of both bureaucratic and socially embedded institutions (Koning 2011). This process happens in order to adapt the institutions to the specific local context or because of disagreement with certain institutions. This process evolves differently in socially embedded institutions and bureaucratic institutions. In socially embedded institutions the process of alteration contains more unconscious motivations which most often can become so deeply embedded that almost invisible. In bureaucratic institutions, the process is more consciously motivated and more visible. *Articulation* refers to the resistance to merge of socially embedded institutions because of their misalignment with bureaucratic institutions. Articulation is mostly visible in discursive practices and happens when the introduced institutions are directly in conflict with local identities (Koning 2011). All these processes occur in a given period; hence the time aspect is considered to be important in institutional change (Díaz 2013).

Table 4.2: Processes of institutional bricolage

Processes	**Description**
Articulation	Accentuation of local institutions • Claims on tradition and culture • Rejection of bureaucratic institutions • Leakage of meaning

Alteration	Adaptation or reshaping of both types of institutions
	• Alteration of socially embedded institutions:
	  • Less conscious, more gradual
	  • Reshaping and re-interpretation
	• Alteration of bureaucratic institutions
	• Conscious
	• Renegotiation, rule bending
	• Ignoring or negation of bureaucratic institutions

Aggregation	Recombination of various elements • Mediation between different rules, norms, and beliefs • Creation of multipurpose institutions

Source: (Díaz 2013)

Institutions are not static structures (Duymedjian and Ruling 2010). They are in continuous change which needs to be continuously transformed and reaffirmed (Cleaver et al. 2013). Therefore, institutional analysis in natural resource management should take into consideration the aspects of culture, routines, traditions, social norms, and state regulations amongst others, that could influence the rules in use over time (Díaz 2013). The active role of the actors is therefore very relevant in institutional bricolage. Institutional bricolage theorises actors as conscious and unconscious social agents who are deeply embedded in social life, but still able to analyse and react to a diverse set of situations that confront them

(Cleaver 2002). Actors' agency is then influenced by their authority, legitimacy and identity (Fig. 4.1). The 'institutional bricolage' approach helps explain the interactions between actors and structures with a focus on the dynamics of institutional arrangements surrounding forest management. It challenges the view of institutions as formal structures with defined boundaries (mainstreamed institutionalism) and views the institutional landscape rather as a network of arrangements with blurred boundaries and intersecting domains and scales.

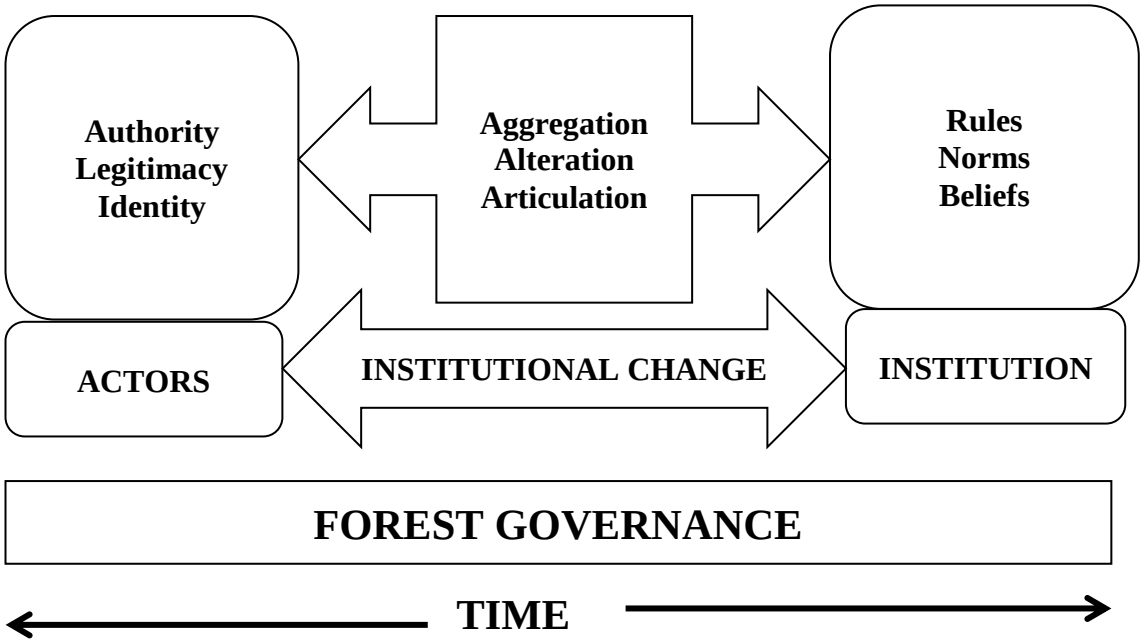

Figure 4.1: Institutional Bricolage and forest management
Source: Adapted from Koning (2011)

3. METHODS OF STUDY

3.1. DATA COLLECTION METHODS

Data for this study were collected from January 2013 through August 2015. The units of analysis were ten villages (communities) situated adjacent to the THWS. In each village a number of actors (community members) were selected based on their knowledge of the functioning of customary institutions. The actors included community leaders (quarter heads or chiefs), members of the village traditional council, members of village development committees, leaders of women's and youth groups, members of the forest management committee, representatives of the Forest Agency (Ministry of Forestry and Wildlife - MINFOF), the local administrators (Ministry of Territorial Administration and Decentralisation - MINATD) and the local non-profit organisation (NGO) promoting wildlife conservation (Environment and Rural Development Foundation - ERuDeF). The main method of data collection included in-depth interviews, focus-group discussions and field observations.

In-depth interviews (Kvale and Brinkmann 2009) were used to explore the roles of indigenous structures in forest management. The interviewing process enabled the understanding of indigenous structures, their roles in forest management and the variations between structures and roles across villages. It also helped to explore the changes that have occurred in forest management. The shift in management roles and their influence on forest management was also explored. Specifically, interview questions explored how the forest activities of the households have changed due to the change in forest management structures and how this affected forest governance. A total of 128 interviews were conducted: 119 with actors in the ten villages and nine with local government officials and local NGO (wildlife conservation organisation) staff. On average, 10 actors were interviewed per village.

Field observations were used principally to witness the forest practices community organisation. Participant and non-participant observation were used as described by Kumar (2014). This helped to achieve an in-depth perspective on the case study. In addition, secondary data such as forest management policies, plans and other relevant literature on the case study were also collected and reviewed.

3.2. DATA ANALYSIS

The theoretical framework (institutional bricolage) and the study objectives helped to organise the analysis, shape the process of data collection and identify the important cause-effect relationships. Three different perspectives were employed in data analysis: literal, interpretative and reflexive (Mason 2002). Literal analysis enabled the interpretation of data in their literal form. By using interpretative analyses, the data collected were interpreted based on the demographics of the study area, and the researchers experience

and expertise. Finally, reflexive analyses drew from interpretative and literal analyses to compare the results obtained with other studies in order to provide a more robust contextualised analysis.

Information collected during the interviews was processed first by coding (Crang and Cook 2007). Coding during field work was used to review the field notes and to dissect information meaningfully while keeping the relations between the parts intact. The different answers were classified according to the main themes linked to the research questions and the theoretical framework. The information obtained was processed to describe the different processes of institutional bricolage in the THWS. This helped in explaining the effects of changes in management policies.

4. RESULTS

Customary structures, historically, are responsible for governance at the local community level (village) in Cameroon (Brain 1967). Their roles were revealed to be clearly visible above all in local communities with low visibility of state representatives. Customary structures were accorded customary rights to manage land, forest and natural resources in their local communities. They were responsible for setting rules and norms to be followed by community members and ensured that the beliefs of the community were protected.

4.1. STRUCTURE AND ROLE OF CUSTOMARY STRUCTURES IN THE TOFALA HILL WILDLIFE SANCTUARY

"*…You need to go to the chief's palace and present yourself and what you have come to do in our community. The 'fon' will then assign someone from the community to work with you if he approves your mission in our community…*" recounted a community member in Bechati. This statement supported the fact that there were structures and roles that guided socio-economic operations in the village. Further probing of the structure governing socio-economic operations in the study area revealed that customary structures are constituted by different organs possessing varying levels of power and roles in community governance (Fig. 4.2).

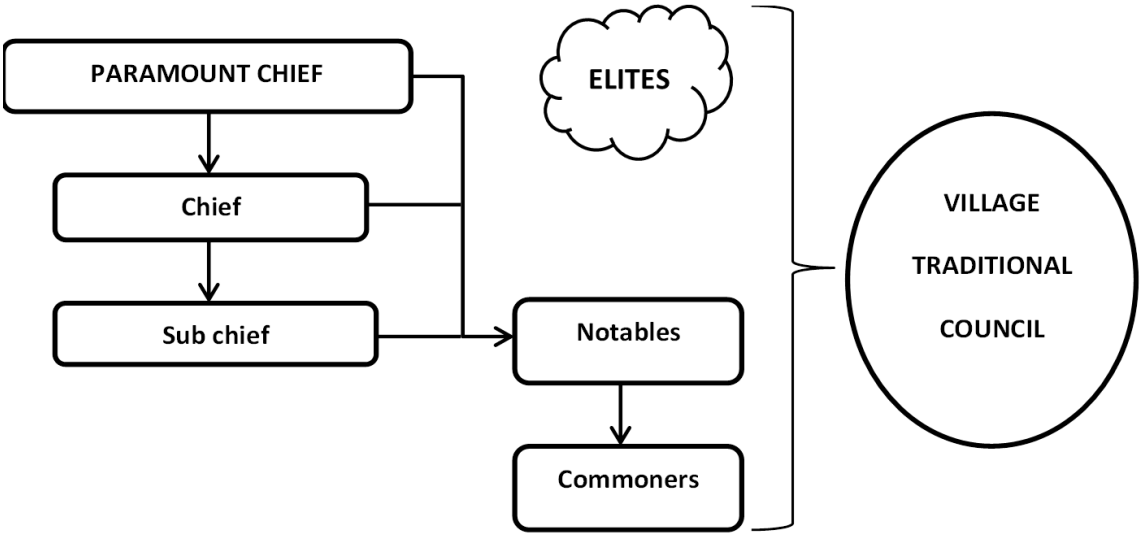

Figure 4.2: Indigenous system structures in the THWS

Despite the slight cultural differences that existed among the ten studied villages, they had similar indigenous structures. Each village was headed by a paramount chief, locally called 'fon'. The fon was the focal point and strength of the indigenous system. "*…We have a powerful fon, which is why we are the strongest village in Wabane …*" noted an interviewee from the Bamubou Village. The strength of a fon was revealed to be measured in terms of the cultural value of the village, the wealth of the village, achievements of the fon and the

number of people under his leadership. The Bamubou village was reported to be one of the most renowned villages in the study area because of its cultural values, high population in relation to other villages and based on the achievements of it fon in term of wealth, political power and level of education.

Customarily, community members owe loyalty to the fon. He has sacred attributes and performs important rites for the well-being of his subjects (community members). The fon is assisted in leadership by the chiefs and notables ('bekem') appointed by him. Generally, chiefs are assigned as custodians of the law in their neighbourhoods ('quarters') and are accountable to the fon. They are also referred to locally as quarter heads. Notables are appointed by either the fon or the chief to assist in decision making at different levels in the village. It was also revealed that the local custom does not permit women to hold key leadership positions like village heads or quarter heads. However, women from rural families could be accorded with a special title ('mafua' or 'mofor') through merit or succession. This title could give them access to participate in certain aspects of decision making in their village. "… *I am a title holder because my father was a chief in this village. I can participate in village traditional council meetings. However, there are certain traditional aspects that women are not allowed to participate in like entering the 'secret forest' during sacrifice to the ancestors*…" recounted one of the female interviewee in Bamumbu.

The village traditional council was revealed to be responsible for carrying out deliberations on matters concerning village governance. The village traditional council was made up of individuals with leadership authority in the village (fon, chiefs, notables) and other elected members representing other social groups recognised in the communities (mainly youth, women and elites). Elites were reported as community members who have the potential to influence both development and decision making processes in the local community. The elites appeared to be invisible in the indigenous structures but were observed to play key roles in influencing decisions both at the household and community level. "…*we always need to seek advice from our elites before taking any major decision in the village because they are the ones exposed to 'development', they know better what is best for us and the community*"… noted an interviewee in the Besali village. The commoners were community members with no leadership authority. However, they were revealed to have a strong voice either directly or indirectly in the functioning of the villages, especially in the management of forest resources. They were composed mostly of youth and women.

4.2. CUSTOMARY STRUCTURES AND FOREST PRINCIPLES BEFORE THE CREATION OF THE TOFALA HILL WILDLIFE SANCTUARY

Before the creation of the THWS, forests were managed mainly through customary structures overseen by the fon. Customary structures enjoyed benefits in exchange for making decisions about the use of communal land and forest and in settling disputes over forest access. These benefits included fees paid by members of the village presenting land

dispute cases before the village traditional council. The fee was paid in kind and the specifications varied from one community to another. "…*If you have a query with someone over a piece of land, you can report the case to your quarter head (chief). The quarter head will then call members of his cabinet to judge the case. When a case is being judged, both parties involved must pay a judgment fee, which most often involve buying the number of bottles of beer demanded by the quarter head. The number of bottles of beer demanded varies from one case to another and depends on the gravity of your case. If the case cannot be resolved at the level of the quarter head, it is sent to the village tradition council where a higher fee is demanded, often in terms of beer* …" recounted a community member in Bechati.

Forest management principles were revealed to focus on regulating the way local community members could use the forest resources for their livelihood needs (Table 4.3). Management principles guided the ways in which community members could acquire, use and transfer land. Land management for community livelihood was revealed to be synonymous with forest management because the nature of the main livelihood activities including farming, hunting and harvesting of non-timber forest product were mainly forest-based. "… *The life of the Bechati man depends on the forest, so we take cases that concern the usage of our forest very serious*…" recounted an interviewee from the Bechati Community.

Table 4.3: Forest management principles before the advent of the THWS

Right	Specification	Restriction and sanctions
Acquisition	Inheritance/first occupancy	Cannot sell to outsiders without consultations with paramount chief
Access	All community members have access to communal land (forest)	Access restricted for non-members of the community
Transfer	Allocation of family plots for agriculture production/inheritance. Restricted sale permitted in some communities	Transfer of individual rights to non-members of the community restricted
Wood	Restricted for family consumption and local construction purposes	Authorisation needed in some cases for extracting wood for construction purposes
Hunting	All community members have access	Some cultures restrict hunting of gorillas and chimpanzees
Non-timber forest products	All community members have access	Harvesting is strictly during the day/no restriction for some communities

Land acquisition was observed to be by inheritance and first occupancy in most villages. "…*our fore-father did not buy land for farming or building. Land was inherited by the ability of the individual to effectively occupy it. The first occupants in most cases became the leaders of the community and may welcome subsequent occupants based on their*

willingness to share the land they inherited. In most cases they will accumulate the inherited land for their future household members. That is why you will see some rural families having large hectares of land…" recounted an interviewee from the Egumbo village. "…*I inherited all of my farmlands from my father. Before I got married my father gave me one of his farmlands as support to my household. When he died, I had to inherit the rest of his property including his farmland because I am the first son…"* reported an interviewee from the Banti village. "… *I have a cocoa farm in the forest; I did not inherit the land, I have the right as a son from this village to use the forest for my wellbeing. So long as I have started farming on that piece of land, I have become the owner*…" noted an interviewee from the Fossimondi community.

It was also revealed that all community members including women and youth could have access to forest resources. "…*As a son from this village, I have the right to practice hunting and farming within our village territory without permission from the local traditional council. I may only need permission if the land has been marked as reserved or assigned for other community needs. It is also my duty to prevent outsiders from intruding into our territory without permission to hunt or carry out any farming activity…"* reported an interviewee. However, only men could acquire land by inheriting or first occupancy. Inherited land could be transferred, sold or rented to other community members needing more land for agricultural purposes or construction, provided the process respects traditional norms. "… *So long as my farmland is active and not abandoned, it is my property; I have the right to transfer it to my children or any other community member of my choice. If I need to transfer my farmland to someone who is not a member of this community, I have to duly introduce the person to the village authority so that they are not considered as intruders*…" recounted a community member in M'mock Mbien village.

4.3. TRADITIONAL STRUCTURES AND FOREST PRACTICES AFTER THE CREATION OF THE THWS

The creation of the THWS in September 2014 by the Prime Ministerial Decree Number 20145212 of September 29, 2014 introduced changes in forest management principles (Table 4.2). The Prime Ministerial Decree Number 20145212 of September 29, 2014 states that "*a Sanctuary called Tofala Hill Wildlife Sanctuary in Wabane and Alou Subdivisions in the Lebialem Division, SW Region covering a surface area of 8087 (Eight thousand and eighty seven) hectares is created and the Administrative Headquarter of the Sanctuary will be in Bechati, in Wabane Sub-division was published."*

In accordance with the 1994 forestry and wildlife law of Cameroon and its 1995 decree of implementation (Geschiere 2011), livelihood activities should be restricted from all land and resources within state forests like the THWS. Management, as specified by the law, is to be supervised by the conservator, appointed by the state. The conservator is supposed to work in collaboration with other recognised agencies to prepare a new management plan

for the gazetted area. The results from interviews with local government staff and the wildlife conservation institutions revealed that the creation of the THWS also opened up opportunities to introduce new stakeholders interested in the development of resources within the gazetted area. "…*The creation of the THWS offers opportunities for agencies with interests to participate in the development of natural resources in accordance with state law guiding state forest management to tender in their application for collaboration through the Ministry of Forestry and Wildlife*…" noted an interviewee from the wildlife conservation institution. The creation of the THWS was revealed to have caused a shift in forest management principles (Table 4.4). Customary structures that previously had customary rights to manage the forest were revealed, in theory, to have lost most of their rights to the new management institution (bureaucratic institutions). All community members that had farmlands and other investment within the gazetted area were revealed to have lost these rights according to the state laws. All decisions regarding forest resource management within the area allocated for the wildlife sanctuary were revealed to be the responsibility of the conservator. "…*A conservator has already been appointed by the government to supervise the management of the wildlife sanctuary in accordance with state laws*…" noted an interviewee from the state agency in charge of forestry and wildlife. Notwithstanding, customary structures were still recognised as actors in the management process by the state agency (Figure 4.4 below). However, their rights as the main managers of forest resources were revealed to be limited after the creation of the wildlife sanctuary. "…*They said we can no longer go to the forest to practice farming again because the government has taken the forest to protect gorilla and chimpanzees inside*…" recounted a community member in Bechati village.

Table 4.4: Forest management principles after the creation of the THWS

Right	Specification	Restriction and sanctions
Acquisition	-All communal rights within the gazetted area lost -Acquisition of property by community members not possible with the gazetted area	All violations punished by public law governing protected areas
Access	Access to resources within the gazetted area was supervised by the conservator	Access restricted for all activities that do not support the sanctuary conservation objectives
Transfer	Transfer of resources management was supervised by the conservator	All violations sanctioned by public law governing protected areas
Wood	Supervised collection for fuel wood was to be instituted in the gazetted area	No exploitation for non-fuel wood purposes
Hunting	Hunting strictly restricted in the gazetted area	All violations sanctioned by public law governing protected areas
Non-timber forest products	Access for non-timber product was to be strictly supervised by the new management institution	Unauthorised access sanctioned by public law governing protected areas

4.4. FOREST MANAGEMENT BEFORE THE CREATION OF THE TOFALA HILL WILDLIFE SANCTUARY

Before the creation of the THWS, forest management could be modelled as a linear process (Figure 4.3). The paramount chief (Fon) was at the head of decision making in forest management processes. Through a hierarchical process, information and decisions on forest management were processed according to traditional norms.

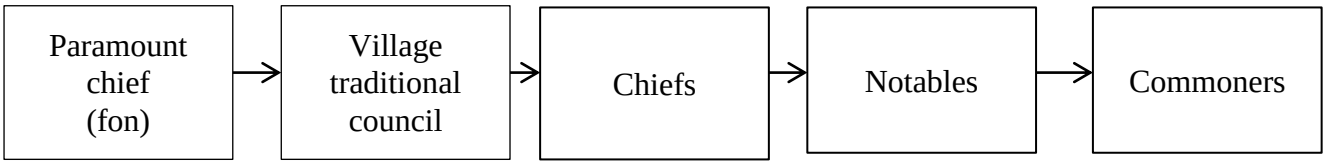

Figure 4.3: Structure of forest governance before the creation of the THWS

The paramount chief was revealed to be the highest power in all management decisions and had veto power over certain management decisions. "…*The fon has the right to make certain decisions independently on forest management issues or behaviour of the community members. However, when it involves external parties like the case of the Wildlife Conservation Organisation he is compelled to summon all the traditional council members to meet and deliberate on the issue*…" noted a community head in Besali. The village traditional council was chaired by the paramount chief. The chiefs and notables were revealed to be mediators between the commoners and the village traditional council and/or the paramount chief. "…*When you have any issue that requires the attention of the village traditional council or the Fon, you are compelled to table the issue to the chief in charge of your quarter and if he cannot address it he will then take it to the Fon or the village traditional council*…" noted a community member during an interview in Folepi community.

Further probing on the role of the customary structures in forest management revealed that although the management structures and processes appeared to be linear in theory, the actual processes appear to be more dynamic and complex than they appear. For instance, in the Fossimondi community, some notables were revealed to have more authority in decision making compared to the chiefs (the higher rank). These community members were reported to have acquired this power in decision making because of the wealth they have acquired compared to their co-leaders. In an interview session with one of the notables who was revealed to have more authority in decision making in his community compared to other leaders of higher status, he recounted: "…*I am respected in my community because of my contribution to the development of the community and also because I work hard to earn what I have. There are only two notables in my villages including myself who have been assigned the authority as quarter heads by the paramount chief. There are chiefs that are not assigned as quarter heads because they do not have the ability to rule a people. Ability to govern is not only about the title but also the ability to make your voice heard and be respected by others. For example, compared to other members of the*

community, nobody can question my access to the forest except the paramount chief because of my status and ability in community development…" The narration of the latter interviewee revealed that the process and hierarchy concerning decision making in resource management does not always follow the outlined procedure (Fig. 4.3). The latter narration also revealed that power played a key role in defining to what extent local people could benefit from forest resources.

The results of the interviews also revealed that community members may be sanctioned differently if they violate customary rights in forest management. "…*Everyone is not treated equally when it comes to decision-making according to the village customs. For instance, if a respected personality in the village violates forest management rights, he will not be judged by the village councils like other commoners. The paramount chief will normally handle such cases in order to protect the reputation of the person and that of the entire village*…" recounted a member of the village traditional council. In addition, field interviews also revealed that although the elites were among the powerful actors in terms of their influence in decision making at both communal and household levels, their actions/influence were hidden. "…*the eyes of the community members and the government are on us regarding our stake on sensitive issues like this. We prefer to keep our contributions anonymous from others to protect our reputation…"*

The hidden role of the elites in forest management in particular was revealed in many scenarios as reported by interviewees: "…*There was a day we received information from one of our elites about a meeting that was organised in the city by the wildlife conservation organisation to bring forestry officers to our community so that they could start mapping our forest for conservation. Based on this information, all members of the village traditional councils were notified immediately of the actions and words were sent to other elites out of the community. By the next day, a strategy to stop the forestry officers from going to the forest to start the mapping was devised. They were surprised when they got to the community and we were already prepared to prevent them from starting the mapping process until they received further notice from the village traditional council. They spent three days in the community trying to convince the local community members about the importance of mapping the forest but it was not possible for them to proceed with the action because we had already received instructions from our elites not to allow them have access into the forest unless they also hold another meeting with the elites to further agree on the action*…" reported a key informant in the Fossimondi community. In another interview session with a member of the village traditional council in Besali, he reported that "…*We do not often take decisions about the conservation of our forest without consulting our elites. The wildlife conservation institution knows more than we do. They can easily trick us to accept things their way. We always make sure that we do appropriate consultation with our elites before proceeding with any engagement with them*…" Another scenario indicating the role of elites in forest management was also reported during the interview session with an interviewee from the wildlife conservation institution: "…*The elites of the various communities involved have contributed in making the process of dealing with the local*

people in the project area very complicated. They keep on feeding the local people with false information about our motives in the conservation of the THWS. We have received several query letters from the government concerning allegations that we are using the process of wildlife conservation in the THWS to lobby for money from the international community for our personal benefits. After attending to these queries, we noticed that all of them were as a result of petitions filed against us by elites…" Furthermore, one of the elites recounted during an interview session that "… *there is a lot of money in conservation and the conservation organisation is using it to their own advantage rather than putting it into community development activities. We will see to it that the conservation agenda does not hold except if the conservation organisation agrees to meet all the development needs of the local people because they are depriving them of their forest because of wildlife conservation*…" Further analysis of interview transcripts revealed that most elites limited the development needs of the local people to alternative livelihoods and did not consider the wider and long term benefits wildlife conservation may bring to the local people. It was also revealed that although most elites understood the long term benefits of wildlife conservation they were bound to analyse conservation-development challenges in the way the local people perceive them, in order to win the favour of the local people. For instance, some elites that gave a balanced opinion on conservation-development challenges asked to remain anonymous in fear of pressure from the local community members. Also, some of the elites we encountered during our field study, who were visiting their local community, refused to be interviewed in the community and instead asked the research staff to meet them in their office in the city if they needed their opinion.

4.5. FOREST MANAGEMENT STRUCTURE AFTER THE CREATION OF THE THWS

Although the creation of the THWS was officially validated in September 2014, the process that led to its creation was revealed to have begun in 2004. "…*The process of creating the THWS did not just start today; we have been working on the process since 2004*..." reported a staff member of the wildlife conservation institution during an interview session. The creation process of the sanctuary introduced a new bureaucratic institutional structure into forest governance (Fig. 4.4).

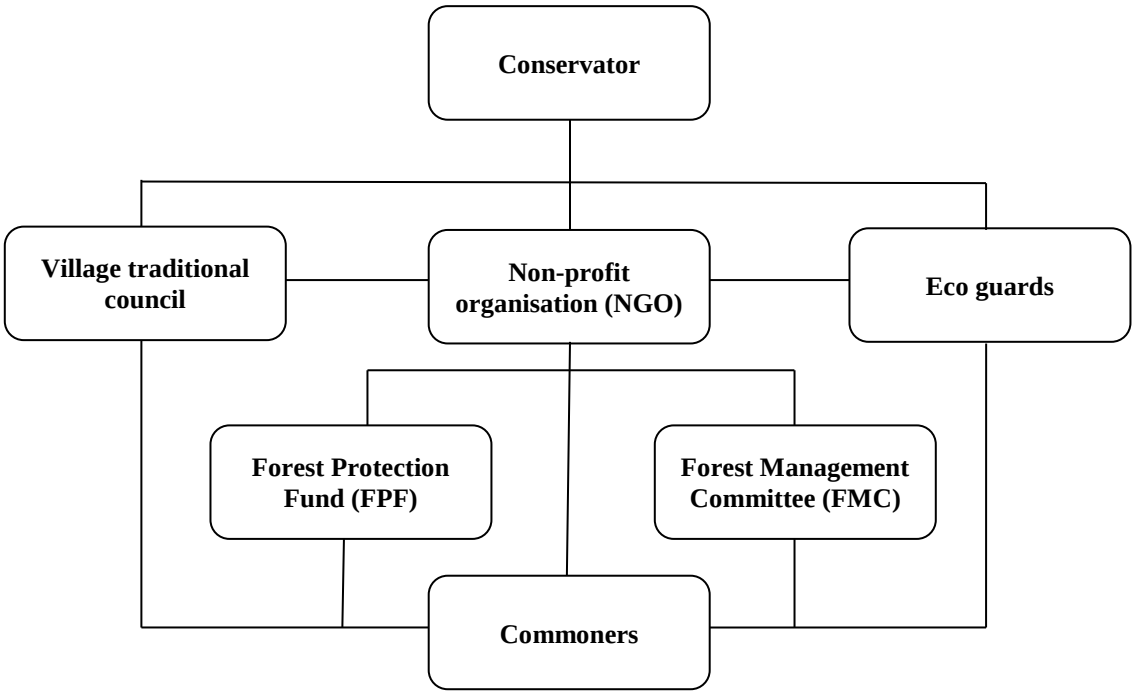

Figure 4.4: Structure of forest management after the creation of the THWS

The process of the creation of the THWS was revealed to introduce new management structures in forest management, including the Forest Management Committee (FMC), the Forest Protection Fund Committee (FPFC), the NGO (Wildlife Conservation Institution - WCI), the Conservator and the Eco-guards. The FMC was created by the WCI with the main objective to facilitate mediation between the local community members and the WCI in the development of forest resources for livelihood and wildlife conservation purposes. The FPFC was created by the WCI with the main objective for it to function as the institution that channels technical and financial support to the local community members, for off-forest income-generating livelihood activities. It was believed that supporting local community members to engage in off-forest activities could improve their engagement in forest conservation. Members of the FMC and FPFC were elected community members. However, it was revealed by field interviews that the committees did not displace the role of the customary structures in forest management. Field data also revealed constant conflicts between the newly created structures (FMC and FPFC) and the traditional structures over the rights to manage decisions pertaining to forest issues. "…*We are not finding it easy collaborating with the village traditional council because they feel they should be the one making all the decisions on forest management. When staff from the wildlife organisation come to the community for forest activities, we are obliged to send them first to the village traditional council. They only come back to us if they have been authorised by the village traditional council …*" reported a member of the FMC.

The legalisation of the THWS by the state in 2014 was also revealed to have introduced other bureaucratic institutions into forest management, including the

conservator and the eco guards. The conservator is appointed by the state and represents the interests of the state in forest management in accordance with the forestry and wildlife laws. The eco guards were revealed to be in charge of enforcing laws and regulations in the site assigned as the protected area. They were revealed to have key roles to play in terms of controlling access to resources.

4.6. THE PROCESSES OF INSTITUTIONAL BRICOLAGE IN CREATION OF THE TOFALA HILL WILDLIFE SANCTUARY

4.6.1. THE PROCESS OF AGGREGATION

The process of aggregation was visible in the creation of the THWS: the FMC and the FPFC were created by borrowing members from different socially embedded institutions already existing in the local community. An assessment of the composition of the FMC members of the Bechati community revealed them to be individuals who were also members of other recognised socially embedded institutions in the community including the women's group, youth, and village traditional council, as well as other minority social groups. The FPFC was also composed of members from the wildlife conservation organisation (bureaucratic institution). This revealed the reconciliation of different rules, norms, and beliefs for the purpose of forest management interventions. Interview results also revealed that the FMC were created and later legalised in order to enable them to directly access other benefits from the state and international donor agencies without necessarily passing through the WCI. The aggregation of members from different interest groups presented both opportunities and weaknesses within forest management. Firstly, the integration of different strategic groups could mean the reconciliation of different interests. On the other hand it could also mean that the different interest groups saw the FMC as a medium through which their different interests could be better expressed. Interview results also revealed that the different interest groups were excited to become members of the FMC and FPFC. However, this excitement faded during the process of the implementation of the wildlife conservation project as the members of the groups felt they were not receiving the benefits they had foreseen.

4.6.2. THE PROCESS OF ALTERATION

The results also revealed the adaptation and reshaping of both socially embedded and bureaucratic institutions. The role of customary structures represented as the main managers of forest resources was revealed to be altered by the management process. The role of customary structures shifted from main forest managers to sub-actors, which limited their rights in decision-making processes around forest resources. The creation of the THWS

also revealed a shift in the role of the WCI and Forestry and Wildlife Institution (FWI). The role of the WCI and FWI as the main mediators between the state and the local community was transferred to the conservator after the legalisation of the THWS. Interview results from the field revealed that the involvement of elites in the process of forest management played an important role in shaping the way the local people responded to wildlife conservation strategies put in place by the WCI and the FWI. Information received by local people on conservation strategies was passed onto specific elites, who then processed it and advised the local people on possible response actions. Elites therefore played key roles in reinforcing the power gap between the local people and the institutions implementing the wildlife strategies. The alteration of bureaucratic institutions involved the renegotiation of roles to work to their advantage in the process of implementing wildlife conservation strategies. For instance, the results revealed that the motive of the FMC and the FPFC was created to weaken the management power of the village traditional council over forest resources. The creation of the FMC and the FPFC destabilised the monopoly of power over forest resources formally enjoyed by the village traditional council. The weakening of the previous forest management system was revealed to have worked to the advantage of the WCI and FWI in renegotiating new forest management roles. Field data also revealed the conscious introduction of a new management structure into the management process of the forest (conservator and eco guard) in order to affect forest management roles and processes. Furthermore, the results from the field also revealed instances where the socially embedded institutions, most especially the elites, tried to ridicule the bureaucratic institutions by writing petitions against their actions. On the other hand, some community members simply ignored the bureaucratic institutions and went ahead with prohibited activities in the gazetted area.

4.6.3. THE PROCESS OF ARTICULATION

Field data also revealed that, as the process of the creation of the THWS became evident, the local people began to emphasise their customary rights as the main custodian of the forest. "…*We are the custodians of this land. We are aware that the government has a higher authority than us. However, we are also aware that it is the duty of the government to ensure the wellbeing of it citizens. All local traditional administrators are recognised by the government. So they cannot tell us that we do not have rights over the same forest that has been in our custody for decades*…" recounted an interviewee (community head). "…*our ancestors have been using the forest for a very long time before passing it to us. It is our custom to ensure that we continue to manage the forest for our livelihood so that our children can also inherit it from us…*" recounted another interviewee. Field data also revealed scenarios where the socially embedded institutions tried to stress their rights to access forest resources by rejecting the legitimacy of the bureaucratic institutions. "… *We do not need the WCI or the government to assist us in managing our forest. We have been*

managing the forest for decades and we still have the wildlife inside the forest. So we do not see their importance in our forest affairs…" recounted an interviewee from the Bamubou community.

4.7. THE EFFECTS OF THE SHIFT IN THE MANAGEMENT STRUCTURE OF THE THWS

The structure of forest management before and after the creation of the THWS (Figure 4.3 and 4.4 respectively) revealed, in principle, a transition from a socially embedded institution to a bureaucratic institution. Although the management structure of the socially embedded institution appeared superficially to be simpler, in reality it exhibited dynamic and complex characteristics, as previously illustrated. Additionally, the functioning of the bureaucratic institutions tends to exhibit more complex and dynamic characteristics in reality compared to the publicly expressed structure. Interview results and field observations revealed that, in practice, some of the bureaucratic institutions were not yet operationalised in the field. The eco guards were not yet engaged in the forest management process. In addition, it was also revealed that the conservator, although already assigned to the site, could not effectively influence management decisions because a management plan for the site was still in development. "…*Although the forest has been legalised as a wildlife sanctuary, there is still a lot of work to be done in order to enable the effective implementation of the legislation. Firstly, the operational management plan for the site has not been developed; we are still working with the conservator to develop the management plan. Secondly, there are limited financial resources to support the implementation of the legislation. For instance, we do not yet have enough money to mobilise all the resources needed for developing the management plan of the site. The lack of a legalised management plan for the site is also retarding the recruitment of eco guards to regulate resource access...*" reported a staff member from the WCI. Despite the transfer of management rights, the new management structures that were supposed to implement the legislation were not yet established in practice. Thus, forest management was revealed to still be an affair of the socially embedded structures (indigenous structures) and the WCI.

Taking advantage of the fact that the new forest legislation was not effective, the local community members were revealed to be continuing their livelihood activities in the gazetted area, even when they were aware that the activities were prohibited. "…*We are ready to fight for our forest*…" noted an interviewee in the Fossimondi community. "…*We need the forest because it is the only place where we get income to educate our children; our ancestors also live there, so if the government is talking about conservation it should be ready to resolve all of these issues*…" noted an interviewee in the Bechati Community. Our field interviews also revealed that some members of the FMC and FPFC (who were supposed to protect the interests of the wildlife conservation structures) argued against the new management structure. "…*I am not happy at this point because none of our interests are protected. I was hoping to benefit a lot from this position but I have not seen any benefits so*

far…' noted a FMC member in the Bangang community. Most of the interviewees had negative attitudes toward the new management structures and declared they were not willing to collaborate with them. *"…We have started cutting down the forest to cultivate our crops; when the forest finally disappears, the NGO will go away because there will be no more forest left for conservation…"* noted an interviewee in the Fossimondi community.

Interview results and field observations revealed that the shift in management rights from the socially embedded structures to the institutional structures triggered further misappropriation of forest resources. Local community members were conscious of the fact that their livelihoods and rights would be severely threatened by the effective implementation of the new legislation. This triggered them to engage in activities that could enable them to acquire as much resources as possible from the forest prior to the enforcement of the new legislation.

5. DISCUSSION

The results of this study revealed that in the process of change of leadership in forest resources management in the THWS, the role of customary structures were not adequately appreciated. This resulted in conflicts around management roles between the customary structure and the bureaucratic structure. Competing interests were revealed in the dimension of authority and power over the rights to manage forest resources. The rivalry around authority and power over the rights to manage forest resources was observed to be a major challenge for organising the collective efforts needed for sustainable management as argued by Cleaver (2002). For sustainability to be achieved in forest management, there is a need for effective collaboration between all key actors regardless of the institutional setting they situate themselves in. In the THWS, the transition of management rights between forest management institutions was revealed to involve different actors, who introduced different knowledge and interests into the process, resulting in dynamic and complex outcomes over time. For instance, the interventions of the elites were observed to influence the decision of local people on whether or not to engage with wildlife conservation strategies. The response of the local people to conservation strategies was also revealed to affect the way the FWI and the WCI further responded to their management strategies. This finding is in line with the argument that in the process of institutional transition, a set of actors (bricoleurs) participate and apply their knowledge in different ways, resulting in a rich diversity of institutional arrangements (Cleaver 2002).

Institutional arrangements evolved through three processes namely; aggregation, alteration and articulation. This study revealed how members of different institutions (FMC and FPFC) merged to form a new institution with multiple functions. This reflected the process of aggregation. The role of customary structures as the main manager of forest resources was also affected and altered in the transition process. The paramount chief as the head of the forest management institution in the THWS was replaced by the conservator, who became the head of the new management structure. This revealed the process of alteration. The results also revealed that the indigenous structure continued to reiterate their rights as the main manager of the forest based on local customs and norms. In addition, local people also sought to claim legitimacy of their rights while discrediting the effectiveness of the new bureaucratic institutions in forest management. This revealed the process of articulation. The later phase of the wildlife conservation project revealed a strong case of articulation. Local people continuously seek both customary claims and legal opportunities to back up their rights within forest management.

The elites played a key role in filling the power gap between the bureaucratic institutions and the socially embedded institutions. The results revealed a strong power-relation between the local people and the elites in times of need. This resulted in a new type of arrangement different from aggregation, alteration and articulation. We call this new institutional arrangement the ‘mash-up’ process. This is the collaboration of disparate elements of institutions in times of need, to respond to perceived threats and develop urgent intervention mechanisms. The process of mash-up as revealed in this study involves

different institutions with different strengths and values, which when merged together complement each other's efforts. Although the local people were the primary users of forest resources, they lacked the power and capacity to negotiate their interests in wildlife conservation. On the other hand the elites compensated for this weakness by bringing in their power and capacity to assist the local people in the negotiation process. In exchange for these services, the elites gain recognition (respect) from the local people and the local people benefit from the power and negotiating ability of the elites. In other words, "the external bureaucratic intervention" does not just "articulate" (as defined by Koning) with socially embedded institutions, local elites also strengthen their authority by organising this resistance. On the other hand, it remains to be seen to what extent the negotiation between the bureaucratic apparatus and the local elites would benefit the local population itself. The process of mash-up happens unintentionally and is mostly targeted toward the response to a specific challenge.

The results also revealed that identity, norms and beliefs played a key role in actors' behaviours. It was established that although the members of the FMC were commissioned by the WCI to mediate in forest management processes, they did not forget their identity as indigenous community members and they still acted in accordance with the local norms and beliefs. This revealed a typical characteristic of institutional bricolage whereby different elements are borrowed from different institutions to create completely new realities (Cleaver 2001; Koning and Cleaver 2012). This study also revealed how the introduction of the FMC and FPFC in the forest management structure resulted in a new dimension of conflict between the newly created institutions (FMC and FPFC) and village traditional council (socially embedded institution accorded with the customary rights to manage forest resources).

The results of this study also agreed with the argument that most often, formalised (bureaucratic) structures reflect a consensual model of society, suggesting that the new arrangements work for everyone, instead of a conflictual model questioning for whom these practices work and why and who pay the price for them (Meagher et al. 2014). This study showed that the creation of the THWS has introduced new actors (working in bureaucratic structures) in forest management. The new actors had different views of forest governance (promoting wildlife conservation) as compared with the formal agenda (of livelihoods) pursued and regulated by the socially-embedded traditional structures. The shift in institutional and leadership structures in forest management led to the suppression of the previous forest managers (in the customary structures). Their newly marginalised role in forest management taught them that they were largely unrecognised; so they developed negative attitudes toward the new management structures. A management deficit developed with respect to the organisation of effective collective action (Cleaver 2002; Rishi 2007).

In addition, the fact that the new structures were not yet equipped for implementation mean that the newly crafted policies had a deleterious impact on conservation outcomes. The case of the Fossimondi community, where local community

members mobilised and physically reserved a large portion of the forest for agricultural purposes, illustrates their hostility to conservation policy. Their agency constituted a conscious reaction that might hinder sustainable forest management (Koning and Cleaver 2012). Local community members justified their encroachment on forest resources as a means to safeguard their rights in forest management. This is in line with the argument that safeguarding the rights of local community members in forest management is still a major challenge (Awono et al. 2014). It is also argued that processes to enable local people to access forest resources are often too expensive and complex, leaving them with no choice but to engage in illegal practices (Foundjem-Tita et al. 2014b). Moreover, the majority of local people are unaware of laws governing forest access (Foundjem-Tita et al. 2014a).

This study also revealed that the shift in responsibilities in forest management did not adequately consider the capacity and the resources needed for effective governance. While inciting the systematic hostility of victims of livelihood threats, this gap in the management system also gives opportunistic actors the means to extort resources from the system. For instance, given the fact that the forest was already validated as a protected area, it implied in principle that the customary structures have lost autonomous management over forest resources. On the other hand, the capacity needed by the new management institutions was not yet available. This management gap could be taken advantage of by powerful actors within the institutional system to extort resources from the forest area within the transition period of loose governance. The above finding is in line with the argument that the introduction of bureaucratic institutions in forest governance has posed major challenges for sustainable forest management worldwide (Bond 2014). In the same line of thought, it is argued that failures in forest governance in Cameroon have been attributed to institutional challenges (Wodschow et al. 2016).

This study argues here that both the customary and bureaucratic structures in forest governance have management deficits. On the one hand, while the customary system of management appears to be simple and convenient in implementation, in practice, the processes were not as simple as they appeared. On the other hand, the bureaucratic structures appear to bring in a wide range of expertise, which could benefit forest resource management. Yet the results showed that the processes leading to the transfer of power to the exogenous structures did not adequately value the roles of the previous managers (customary structures). The lack of efficiency in the transition in governing structures generated conflicts and negative perceptions toward the bureaucratic structures. This implied that conflicts in forest management might not only result from diverse actors' interests but could be introduced in the process of institutional transition. The fact that agents of /actors in customary structures felt they were ignored in the transitional processes limited the opportunities for effective collaborative forest management. Customary structures were not just mediators in forest governance processes. Their participation was influenced by powerful actors (elites). Thus, they were situated within complex configurations that can constrain sustainable forest management. Therefore, there is a need to carefully explore how traditional management institutions operate and how they could

better influence forest policy and practices in order to foster sustainable collaborative management.

6. CONCLUSION

This study revealed that one of the main challenges in sustainable forest management is the (poorly) planned process of institutional transitions. The transition process as revealed by the results of the study presents a situation whereby the previous customary structure managing forest resources felt disempowered. The feeling of being disempowered pushed the local community members to resort to those options within their power that could enable them to secure forest resources even when they were aware that their actions were not actually sustainable. The introduction of bureaucratic structures in forest management in this case threatened the identity and role of customary structures. The new bureaucratic forest management structure (Figure 4.4) is revealed to have streamlined the services and roles which had earlier benefited local people. The forest management roles of customary structures were reduced to that of a mediator with little decision making power in the management process. Recognising that their identity and authority was threatened by the new management system, agents/actors in the customary structures developed retaliating mechanisms, which included the intentional conversion of forest into farm land as a means of preventing wildlife conservation activities, and the seeking of power through elites to authorise their claims and rights over forest management. In the process of developing retaliating mechanisms, a new institutional arrangement evolved known as 'mash-up'; wherein the local people were revealed to borrow the power of the elites to compensate for their weakness in negotiating their status in wildlife conservation.

The new forest management arrangement in the THWS was observed to have created new opportunities for forest resource misappropriation given that the transfer of management power was not duly accompanied by the transfer of resources and capacity to ensure the implementation of the newly adopted policy. The lack of effective governance and implementation of the newly adopted policy was one of the main reasons that local community members were empowered to embark on the intentional conversion of forest into farmlands. The results revealed that the transitional process had not transferred management power efficiently and there were no functional institutional systems in place to successfully implement the newly-crafted policies. Thus, the processes that guided the transfer of forest management rights were observed to be unsustainable and a smooth transition to sustainable forest management could not be achieved. This suggested that there was an urgent need to address the processes that led to the transfer of forest governance rights during the creation of the protected areas.

Whilst acknowledging that bureaucratic structures could bring in expertise and opportunities that can benefit forest management at the local level, there remains a need to closely examine the settings through which the interests of the bureaucratic structures are represented and how the interests and objectives of the customary structures fit in. The reconciliation of knowledge from both customary and bureaucratic structures prior to the transfer of management rights could improve sustainable forest management. This could happen in a number of possible ways: firstly, instead of complete transition from the

customary to the bureaucratic structures in forest management, the management system could offer the possibility of empowering and retaining local community members in the frontline of protected area management. This has the potential to create a source of employment for the local people and also boost their self-esteem by participating in joint forest management strategies. Secondly, the transition process could adequately engage the local people in open dialogues through the management process. This open dialogue could possibly lead to the adoption and legalisation of a management plan that clearly indicates the shared interests of and benefits for all relevant key stakeholders. This could go a long way in increasing collaborations between customary and bureaucratic institutions and at the same time contribute to sustainable forest management practices

REFERENCE

Agarwal, B., 2009. Rule making in community forestry institutions: The difference women make. *Ecological Economics*, 68(8–9), pp.2296–2308. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0921800909000767 [Accessed August 20, 2013].

Agrawal, A., Chhatre, A. & Hardin, R., 2008. Changing governance of the world's forests. *Science*, 320(5882), pp.1460–2. Available at: http://www.ncbi.nlm.nih.gov/pubmed/18556552 [Accessed March 1, 2012].

Alemagi, D., 2011. Sustainable development in Cameroon's forestry sector : Progress, challenges, and strategies for improvement. *African Journal of Environmental Science and Technology*, 5(2), pp.65–72.

Aligica, P.D. & Boettke, P., 2011. The Two Social Philosophies of Ostroms ' Institutionalism. *The Policy Studies Journal*, 39(1), pp.29–49.

Appiah-Opoku, S., 1999. Indigenous economic institutions and ecological knowledge: A Ghanaian case study. *Environment Systems and Decisions*, 19(3), pp.217–227.

Awono, A. et al., 2014. Tenure and participation in local REDD+ projects: Insights from southern Cameroon. *Environmental Science and Policy*, 35, pp.76–86. Available at: http://dx.doi.org/10.1016/j.envsci.2013.01.017.

Bastiaensen, J., De Herdt, T. & D'Exelle, B., 2005. Poverty reduction as a local institutional process. *World Development*, 33(6), pp.979–993. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0305750X0500046X [Accessed July 26, 2012].

Bond, J., 2014. *A human security perspective on natural resource conflict and rural development*, Copenhagen. Available at: www.ifro.ku.dk.

Brown, H.C.P. & Lassoie, J.P., 2010. Institutional choice and local legitimacy in community-based forest management: lessons from Cameroon. *Environmental Conservation*, 37(3), pp.261–269. Available at: http://www.journals.cambridge.org/abstract_S0376892910000603 [Accessed July 23, 2012].

Cheo, V.N., 2010. *Policy and Environmental Communication in Mitigation of Non-Sustainable Forest Exploitation In cameroon: An Impact Assessment of Anglophone Cameroon*. University of Technology Cottbus.

Cleaver, F. et al., 2013. Beyond negotiation?: Real governance, hybrid institutions and pastoralism in the Usangu Plains, Tanzania. *Environment, Politics and Development Working Paper Series*, 61.

Cleaver, F., 2001. Institutional Bricolage, Conflict and Cooperation in Usangu, Tanzania. *IDS Bulletin*, 32(4), pp.26–35. Available at: http://doi.wiley.com/10.1111/j.1759-5436.2001.mp32004004.x.

Cleaver, F., 2002. Reinventing Institutions : Bricolage and the Social Embeddedness of Natural Resource management. *The European Journal of Development Reinventing*

Institutions, 14(2), pp.11–30.
Crang, M. & Cook, I., 2007. Analyzing field methods. In *Doing Ethnographies*. London, California, New Delhi, Singapore: Sage Publications, p. 244.
Dessie, Y. et al., 2013. The role of institutions and social learning in soil conservation innovations: Implications for policy and practice. *Environmental Science & Policy*, 27(2006), pp.21–31. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1462901112001918.
Díaz, J.V.D., 2013. *Good or bad bricolage? The case of PINFOR and Parcialidades in Totonicapán, Guatemala*. Wageningen University.
Djeumo, A., 2001. *The Development of Community Forests in Cameroon: Origins, Current Situation and Constraints*, London, UK.
Dondeyne, S., Kaarhus, R. & Allison, G., 2012. Nature conservation, rural development and ecotourism in central Mozambique: which space do local community Get? In I. Convery, G. Corsane, & P. Davis, eds. *Making Sense of Place: Multidisciplinary Perspectives*. Woodbridge: The Boydell Press, pp. 291–301.
Duymedjian, R. & Ruling, C.-C., 2010. Towards a Foundation of Bricolage in Organization and Management Theory. *Organization Studies*, 31(2), pp.133–151. Available at: http://oss.sagepub.com/cgi/doi/10.1177/0170840609347051 [Accessed March 17, 2012].
Fairhead, J. & Leach, M., 1995. False forest history, complicit social analysis: Rethinking some West African environmental narratives. *World Development*, 23(6), pp.1023–1035.
Forsyth, T., Leach, M. & Scoones, I., 1998. *Poverty and environment: priorities for research and policy - an overview study*, Falmer.
Foundjem-Tita, D., Speelman, S., et al., 2014. A tale of transaction costs and forest law compliance: Trade permits for Non Timber Forests Products in Cameroon. *Forest Policy and Economics*, 38(2014), pp.132–142. Available at: http://linkinghub.elsevier.com/retrieve/pii/S138993411300169X [Accessed April 4, 2014].
Foundjem-Tita, D., D'Haese, M., et al., 2014. Would strictly enforced forestry regulations affect farmers' stated intentions to plant indigenous fruits trees? Insights from Cameroon. *Food Policy*, 49(P1), pp.95–106.
Geschiere, P., 2011. "The 1994 forest law in Cameroon: neoliberals betting on" the" community." , pp.477–494.
Jum, C. et al., 2007. Enhancing sustainable forest management in Cameroon through a model forest based approach. *International Forestry Review*, 9(4), pp.892–900.
Koning, J. de, 2011. *Reshaping Institutions: Bricolage Processes in Smallholder Forestry in the Amazon*. Wageningen University.
Koning, J. de & Cleaver, F., 2012. Institutional bricolage in community forestry: an agenda for future research. In B. Arts et al., eds. *Forest-people Interfaces: Understanding Community Forestry and Bio-cultural Diversity*. Wageningen, The Netherlands: Wageningen Academic Publishers, p. 292.

Kvale, S. & Brinkmann, S., 2009. *Interviews: Learning the craft of qualitative research interviewing* 2nd ed., Los Angeles, London, New Delhi, Singapore: Sage Publications.

Leach, M., Mearns, R. & Scoones, I., 1997. *ENVIRONMENTAL ENTITLEMENTS: A Framework for Understanding the Institutional Dynamics of Environmental Change*, Brighton, UK.

Leach, M., Mearns, R. & Scoones, I., 1999. Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management. *World Development*, 27(2), pp.225–247. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0305750X98001417.

Mason, J., 2002. *Qualitative Researching* 2nd ed., London, Thousand Oaks, New Delhi: SAGE Publications.

Mbatu, R.S., 2015. Domestic and international forest regime nexus in Cameroon: An assessment of the effectiveness of REDD+ policy design strategy in the context of the climate change regime. *Forest Policy and Economics*, 52(2015), pp.46–56. Available at: http://dx.doi.org/10.1016/j.forpol.2014.12.012.

McGinnis, M.D., 2011. An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework. *Policy Studies Journal*, 39(1), pp.169–183. Available at: http://doi.wiley.com/10.1111/j.1541-0072.2010.00401.x.

McShane, T.O. et al., 2011. Hard choices: Making trade-offs between biodiversity conservation and human well-being. *Biological Conservation*, 144(3), pp.966–972. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0006320710001849 [Accessed March 7, 2012].

Meagher, K., De Herdt, T. & Titeca, K., 2014. *Unravelling public authority: paths of hybrid governance in Africa*,

Nkemnyi, M.F., 2016. An Analysis of Local Participation in Community Forestry : The Case of Tinto and Bimbia-Bonadikombo Community Forest, Cameroon. *Sustainability in Environment*, 1(2), pp.85–97.

Nkemnyi, M.F. et al., 2013. Making hard choices: balancing indigenous communities livelihood and Cross River gorilla conservation in the Lebialem–Mone Forest landscape, Cameroon. *Environ Dev Sustain*, 15, pp.841–857.

Ostrom, E., 2005. *Understanding Institutional Diversity*, Princeton: Princeton University Press.

Ostrom, E. & Cox, M., 2010. Moving Beyong panaceas: a multi-tiered diagnostic approach for social-ecological analysis. *Environmental Conservation*, 37(4), pp.451–463.

Oyono, P.R., 2004a. One step forward, two steps back? Paradoxes of natural resources management decentralisation in Cameroon. *The Journal of Modern African Studies*, 42(1), pp.91–111. Available at: http://www.journals.cambridge.org/abstract_S0022278X03004488 [Accessed August 20, 2012].

Oyono, P.R., 2005. Profiling Local-Level Outcomes of Environmental Decentralizations: The Case of Cameroon's Forests in the Congo Basin. *The Journal of Environment & Development*, 14(3), pp.317–337. Available at:

http://jed.sagepub.com/cgi/doi/10.1177/1070496505276552 [Accessed July 23, 2012].
Oyono, P.R., 2004b. The social and organisational roots of ecological uncertainties in Cameroon's forest management decentralisation model. *The European Journal of Development Research*, 16(1), pp.174–191. Available at: http://www.palgrave-journals.com/doifinder/10.1080/09578810410001688798 [Accessed August 20, 2012].
Purnomo, H. et al., 2012. Rights and Wellbeing: An Analytical Approach to Global Case Comparison of Community Forestry. *Journal of Sustainable Development*, 5(6), pp.35–48. Available at: http://www.ccsenet.org/journal/index.php/jsd/article/view/17298 [Accessed August 20, 2013].
Raitio, K., 2012. New institutional approach to collaborative forest planning on public land: Methods for analysis and lessons for policy. *Land Use Policy*, 29(2), pp.309–316. Available at: http://dx.doi.org/10.1016/j.landusepol.2011.07.001.
Rishi, P., 2007. Joint forest management in India : An attitudinal analysis of stakeholders. *Resources, Conservation and Recycling*, 51, pp.345–354.
Sanginga, P.C., Ochola, W.O. & Bekalo, I., 2010. Natural Resource Management and Development Nexus in Africa. In W. O. Ochola, P. C. Sanginga, & I. Bekalo, eds. *Managing Natural Resources for Development in Africa: A Resource Book*. Nairobi, Kenya: International Institute of Rural Reconstruction (IIRR), p. 571.
Somorin, O.A. et al., 2014. REDD+ policy strategy in Cameroon: Actors, institutions and governance. *Environmental Science & Policy*, 35, pp.87–97. Available at: http://dx.doi.org/10.1016/j.envsci.2013.02.004 [Accessed August 20, 2013].
Tegegne, Y.T. et al., 2016. Evolution of drivers of deforestation and forest degradation in the Congo Basin forests: Exploring possible policy options to address forest loss. *Land Use Policy*, 51(2016), pp.312–324.
Tieguhong, J.C. et al., 2015. How governance impacts non-timber forest product value chains in Cameroon. *Forest Policy and Economics*, 61, pp.1–10. Available at: http://dx.doi.org/10.1016/j.forpol.2015.08.003.
Wodschow, A., Nathan, I. & Cerutti, P., 2016. Participation, public policy-making, and legitimacy in the EU Voluntary Partnership Agreement process: The Cameroon case. *Forest Policy and Economics*, 63(2016), pp.1–10. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934115300745.
WWF International, 2008. *Indigenous Peoples and Conservation: WWF Statement of Principles*, Gland, Switzerland.
Yufanyi Movuh, M.C., 2012. The Colonial heritage and post-Colonial influence, entanglements and implications of the concept of community forestry by the example of Cameroon. *Forest Policy and Economics*, 15, pp.70–77. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934111000724 [Accessed July 23, 2012].
Yufanyi Movuh, M.C. & Schusser, C., 2012. Power, the Hidden Factor in Development Cooperation. An Example of Community Forestry in Cameroon. *Open Journal of Forestry*, 2(4), pp.240–251. Available at:

http://www.scirp.org/journal/PaperDownload.aspx?DOI=10.4236/ojf.2012.24030 [Accessed August 20, 2013].

CHAPTER 5

WHO GOVERNS IN THE TOFALA HILL WILDLIFE SANCTUARY?

ABSTRACT

The main objective of this study is to analyse the role of actors in shaping forest practices and governance in the THWS, Cameroon. Data collection made use of stakeholder analysis, systematic reviews (policy documents) and in-depth interviews. This study revealed that challenges in achieving sustainable forest management are dynamic and ranges from visible to hidden. Most often it might be difficult to fully development solution to sustainable forest governance based on surface analysis of the challenges. For instance focussing on the main interests of the actors could be problematic in the cause of forging alignment as it narrow down the scope of view of the actors. The study revealed that forest management challenges in most cases arise as a result of differences in perception between internal and external actors. In addition, the weak accountability system of the state in monitoring the implementation of policies in protected area creation and management was also revealed as a challenge to sustainable forest management. This study argues that while there is need to establish opportunities that could lead to sustainable forest management in the THWS one of the way forward is for the state to develop and implement a financial mechanism for protected area creation and management.

Key words: Forest governance; policy implementation; wildlife conservation; protected forest management; stakeholders

1. INTRODUCTION

Nature is considered a public good because it contributes to general well-being and does not in principle exclude anyone from experiencing or using it (Arnouts et al. 2012). Thus, the governing of nature should be considered a policy domain that embodies a public interest. Forest practices are those practices relating to forest use and forest management (Brukas and Sallnäs 2012). Forest use involves the conversion of forest into pastures, timber extraction, and collection of non-timber forest products (NTFP) among others, while forest management refers to the regulation of forest uses (Köhl et al. 2015). As the world considers greener forms of economic growth, environmental protection policies have been at the centre of emerging green economies (Fankhauser et al. 2013).

Ideal conditions for forest governance are increasingly rare because some critical problems, such as climate change and tropical deforestation, are on a larger scale and involve non-local influence (Dietz et al. 2003). This has given rise to the search for 'good governance' in order to address the challenges (Mislimshoeva et al. 2016). In the forest policy domain, good governance is referred to as the integrity of institutions and the process of governance (Secco et al. 2014). The guiding ideas of good governance as reported by Secco et al. (2014) are based on sustainability, consensus and legitimacy. Sustainability deals with long term equity, environmental impacts, social impacts and economic impact. Consensus deals with efficiency, effectiveness and participation, while legitimacy deals with transparency, accountability and capacity. The target of decentralisation of forestry policies began in the mid to late 1980s, with a focus on addressing the multiple objectives of forest governance including improvements in income, livelihoods, biodiversity, carbon sequestration, and ecosystem service provision (Agrawal et al. 2008). Community-Based Natural Resource Management (CBNRM) became a key word in forest management in the 90s and was broadly embraced by national leaders and policy-makers in Africa, as well as aid bureaucrats and technical specialists in donor countries (Virtanen 2005). CBNRM has been an important concept to provide sustainable solutions for both local people and nature (Lepper and Goebel 2010; McCarthy et al. 2012). It looks deeper into how governance arrangements work in practiced if forest dwellers, users, managers, and policy makers are to make better choices about forest governance at a variety of scales (Büscher and Dressler 2007; Agrawal et al. 2008).

Forest practices are strongly related to institutions, as practices entail structuring patterns of behaviour (Andersson and Agrawal 2011; Schure et al. 2015). How the state and citizens interact to produce local institutions and what the effects of these processes are is key to understanding of the hybrid nature of natural resource governance (Cleaver et al. 2013). The debate on the participation of local people in natural resource management has also raised key policy questions, suggesting that effective local participation is still a major challenge in forest governance (Büscher and Dressler 2007). The key argument has been that both ecosystem services and human development policies should improve human well-being through the conservation of ecosystems that provide valuable services (Li et al. 2015). In order to regulate and manage over-exploitation of natural resources, conservation of

biodiversity has been a central environmental concern (Butchart et al. 2010; Rands et al. 2010; Duffy 2014).

However, despite the increasing advocacy of participatory management in natural resource management, bureaucratic and technical framing of participatory forest management processes appears to impede implementation and facilitate powerful actors' capture, while hampering local communities' engagement (Lund and Rutt 2015). Powerful actors seem to have greater freedom to define reality and seem to pay less attention to how reality should really be constructed (Flyvbjerg 1998; Yufanyi Movuh and Schusser 2012). Additionally, the political process of knowledge framing and transfer has enabled powerful stakeholders' interests to attract a high level of importance and preference over local knowledge (Krott 2012; Peluso 2017). Democratic forest management is therefore threatened by bureaucratic structures in management processes (Giessen et al. 2013). Thus, understanding the role actors' play in the processes of management is imperative in developing sustainable management strategies.

In Cameroon, failure of the implementation of forest management policies is argued to be one major setback to sustainable forest management (Alemagi 2011; Maryudi et al. 2012; Buchy and Maconachie 2014). Market failure, institutional weakness (poor governance structure), policy failure, debt crises and population growth are some of the issues that intricately work together to produce the negative outcome in the forest sector in Cameroon (Mbatu 2015; Djiegni et al. 2016). The ability to recognise and deal with pluralism, learn from failure, reconcile conflicting rules, hear the voices of silent stakeholders and raise chain visibility by recognising natural and socio-economic values could improve sustainable forest management in Cameroon (Ingram et al. 2015).

The main objective of this study is to analyse the role of actors in shaping forest practices and governance in the THWS in Cameroon.

The specific objectives of the study include

- To analyse actors' interests and power establishment in the THWS
- To analyse the role actors play in shaping forest practices in the THWS
- To analyse how forest practices affect sustainable forest governance in the THWS

2. CONCEPTUAL FRAMEWORK

2.1. FOREST PRACTICES AND GOVERNANCE

The use of forests worldwide is increasingly raising challenging questions of sustainability (Secco et al. 2014). The growing and competing demands on resources from the forest including food, biofuels, timber, and environmental services is increasingly threatening sustainable forest governance (Agrawal et al. 2008). In order to stimulate sustainable use of forest resources, countries have been trying to adapt the legislative framework in a way that maximises the use of forest resources (Jana et al. 2014). To increasing extent, the involvement of local actors in forest management has been argued to be extremely relevant in achieving sustainable forest practices and governance (Berkes 2004; Anderson et al. 2015; Senganimalunje et al. 2015). Paying attention to livelihoods and creating a local stake that takes into consideration cultural connections to the land are some of the major issues to deal with in participatory forest governance (Pilgrim et al. 2009). The likelihood of local people to sustain community-based natural resource management for livelihood security and conservation needs is argued to be centred on how well programmes are embedded in sociocultural relations, politics, resource needs and uses (Dressler et al. 2010).

As environmental conditions are changing rapidly, so too are social systems (Leach et al. 2010; Ostrom and Cox 2010). This warrants the need for a robust conceptualisation of these constant changes to align them with sustainability targets in the socio ecological system. Actors dealing with socio ecological systems have diverse interests, motivated by their scale of knowledge, which might stimulate conflict in forest resource management (Büscher and Dressler 2007; Ahlborg and Nightingale 2012). Actors participate and apply their knowledge in different ways, resulting in dynamic and complex outcomes in forest management (Koning and Cleaver 2012). Actors are also constantly changing their behaviour and preferences relating to forest management in respect to the changes introduced into the socio ecological systems (Ostrom and Cox 2010). Behavioural changes are motivated by norms, beliefs and interests, which are dynamic, evolving and continuously being shaped and reshaped over time (Cleaver 2002). In order to increase the participation of local actors in forest management, national governments, especially in developing countries, have increasingly transferred responsibilities to manage natural resources to local governments and non-profit organisations (Cook et al. 2017). It is believed that the promotion of social justice and equity amongst forest users could be increased if all actors were offered an opportunity to participate (Lund and Rutt 2015). However, given that space, time, cultural norms and perceptions affect stakeholders differently, it is important to question precisely how policy interventions affect sustainability in forest management (Leach et al. 2010).

Local participation in forest management remains a fundamental challenge despite the growing political and academic interest in participatory management (Araujo et al. 2012;

Nkemnyi 2016). Concerns have been raised about the mismatches that could occur between local policy preferences and the preferences of external actors like donors (Bergsten and Galafassi 2014). It is argued that donors may often exercise considerable power and use it to guide the policy decisions of local governments (Cook et al. 2017). This could be problematic for the responsiveness of local actors in forest governance. The search for sustainable forest management is constantly probing new management strategies of forest governance (Arnouts et al. 2012). Shifts in forest governance in order to pursue a more biodiversity conservation-based agenda are frequently documented across the tropics (Persha et al. 2011; Bottazzi and Dao 2013). These changing modes and shifts in forest governance across the tropics have also been argued to affect forest practices and governance in many ways (Macdicken 2015; Nkemnyi et al. 2016).

2.2. ACTORS, FOREST PRACTICES AND GOVERNANCE

The dynamic and complex nature of environmental challenges suggests that there is a need for constant evaluation of management practices in order to meet policy needs (Böcher 2012). Policy continues to be defined during the process of implementation and implementation is just as much a contested and a political process as adoption (Arts 2012; Lockwood 2013). The change in policy triggers governance shift, which in turn affects management outcomes (Arnouts et al. 2012). Exploring the practices that evolve and how they evolve within governance shift could be rewarding in achieving sustainable management targets in forest management.

In this study, key arguments are borrowed from the analytical theory of assemblage as proposed by Li (2007) to explore the practices that were affected during shifts in governance in the THWS. Li (2007) argued that policy interventions are assembled from diverse elements including discourses, institutions and expertise, amongst others. Thus, the connections between these heterogeneous elements and how these connections can be sustained in the face of tension should be the main focus of policy intervention. Li (2007) lists six of such elements that may be relevant for consideration in forest management. These elements include forging alignment, rendering technically, authorizing knowledge, management failure and contradictions, anti-politics and reassembling.

Forging alignments requires linking together the objectives of the various actors involved in forest management. This includes both those who aspire to govern conduct and those whose conduct is to be governed. The power to govern forest resources has been observed to be an issue of contestations between those with legislative rights and those with customary rights (Bawa et al. 2011; Purnomo et al. 2012). Forging alignment in the rights to govern is relevant in improving forest practices and sustainable forest management. In addition, the ability to extract from the messiness of the social world, with all the processes that run through it, a set of relations that can be translated into beneficial results (Rendering technical) could facilitate effective forest governance (Li 2007). The

knowledge held by actors could influence their choice of behaviour in forest management (Ribot and Peluso 2003; Nkemnyi et al. 2014). Managing actors' knowledge is argued to play a key role in reconciling mismatches in scale of knowledge and in promoting participatory forest management (Stirling 2007; Barnett and Anderies 2014).

Actors' ability to manage failures as the outcome of rectifiable deficiencies and to smooth out contradictions so that they seem superficial rather than fundamental could strengthen forest management efforts (Li 2007; Dinnie et al. 2015). The ability to formulate compromises and to rephrase political questions as a matter of technique, in a way that closes down the debate about how and what to govern, could also improve efforts to focus on management goals rather than on actors' interests (Schusser 2012; Sol et al. 2013). This could also encourage stakeholders to engage in debate while limiting their agenda (Li 2007). However, it is also noted that the process of closing down is critical and tricky as it might exclude relevant stakeholders and therefore limit the inclusive participation advocated for in sustainable forest management (Berkes et al. 2009). It is also argued that in forest management, local actors may hold sometimes widely diverging views of the same organisations, in terms of what they do, how they work and by whom they are led (De Herdt and Abega 2007). Thus, for sustainable forest management, it is important to analyse when, where and how actors' interests could be aligned in order to benefit from forest resources.

3. MATERIALS AND METHODS

3.1. DATA COLLECTION

Data collection made use of stakeholder analysis, systematic reviews (policy documents) and in-depth interviews.

A stakeholder analysis was carried out using the Critical System Thinking (CST) approach as proposed by Achterkamp and Vos (2007). This approach enables the identification and classification of stakeholders' involvement in forest practices and governance in relation to their power and interests. The roles played by stakeholders and the phase during which they were involved were also evaluated. Stakeholder analysis contributed to eliciting information on how the actions of different actors add up to respond to forest governance in the THWS.

The role of actors in shaping forest practices in the THWS was also evaluated. This evaluation was informed by different data sources including policy texts, secondary literature, in-depth interviews, and field observations. Five policy texts and 107 secondary literature sources focusing on the THWS were assessed. The five policy texts assessed included Cameroon Law no. 94/01 of 20 January 1994 to lay down forestry, wildlife and fisheries regulations in Cameroon (1994 forestry law), the Decree of Application no. 94/436 of 23 August 1995 of the 1994 forestry law (1995 forestry decree), the technical note for the creation of the proposed THWS published by the Ministry of Forestry and Wildlife Regional (MINFOF) Delegation of Southwest Cameroon, the public notice no. 0059PN/MINFW/SG/DWPA of 03 November 2011 declaring a part of Tofala Forest as the THWS and the Prime Ministerial Decree no. 20141009/PM of 10 September 2014 authorising the creation of the THWS. The assessment of these texts was important because of the role they play in influencing practices in the THWS. Information obtained from the texts included the specifications of the rules governing protected area management and the role of actors in the implementation of the policy. Data collected from secondary sources including reports, scientific articles, organisational archives, project reports and media news about the THWS contributed to the identification of gaps in the implementation of policy. The data also helped by revealing the different practices of actors in forest management with a focus on the variation that existed among actors. In addition, the type of knowledge held by different actors was deducted from the narrations of actors.

In-depth interviews were used to build a holistic picture of policy planning and practices and how they were embedded in the local context. Informal interviews were also used throughout the study process to appraise the case study in general and to document a wider public view which could have been limited by the in-depth interview approach. Questions posed to interviewees focused on understanding the role they played in the policy implementation process. Attention was paid to their narrations of and reactions to the policy implementation process. Interviewees included local community members (leaders, groups

and committees), the Forest Agency (Ministry of Forestry and Wildlife - MINFOF), the local administrators (Ministry of Territorial Administration and Decentralisation - MINATD) and conservation promoters. A total of 128 in-depth interviews were administered (119 to actors in the local communities and nine to actors that were involved in the policy implementation process). In-depth interviews focused mainly on local community members because their views are rarely captured in media reports and public debates (Nkemnyi et al. 2014). On average, 10 actors were interviewed per community. Key informants were selected in collaboration with local field guides and the community heads (chief). The key informants included local council members (30), men (38), women (29) and youths (22).

Participatory and non-participatory observations enabled the researcher to perceive and establish possible connections between the interviewees' narrations and their immediate environment without necessarily asking direct questions. This approach also enabled the visualisation of narrations and reality in the field.

3.2. DATA ANALYSIS

Content analysis was the main technique used in the data analysis. The data obtained were analysed within the framework of institutional policy analysis and discourse policy analysis. Institutional analysis focused on capturing the actors' dynamics, diversity and their main interests in the policy implementation process. On the other hand, discourse analysis was used to analyse texts with a focus on the concepts, narratives and the knowledge projected in the texts. Discourse analysis also enabled the establishment of arguments in relation to power, ideologies, institutions and social identities (Fairclough 2013) and to take the analysis beyond simple description of existing realities to their interpretation by different stakeholders.

Policy documents analysis and secondary data analysis focused on revealing the source, the content, the strengths and the weaknesses of the information collected in the documents and data and how it was used in practice to influence forest governance. Policy texts were critically analysed for consistency and complementarity. The results of the analysis were cross-validated with the practices in the field deduced from in-depth interviews and field observations. In the same way, the secondary literature analysis was focused on understanding the meaning and context of key arguments. Attention was paid to arguments that were promoted or suppressed in public discourses and the rationale for their promotion or suppression. The actors promoting the arguments and the possible motive for promoting certain arguments also guided data analysis.

Data collected via in-depth interviews was used to contextualise and compliment data obtained from the policy texts and secondary data. In addition, interview data was processed to reveal how different efforts interact to affect forest practices and governance. Information from interviews also enabled the identification of setbacks and promises in forest practices in the THWS and how these setbacks and promises could be reconciled in

order to pursue sustainable forest management practices. Actors' knowledge about forest practices in the THWS was also deduced from interview data using content analysis. Interview data were also processed to reveal information about management failures in the THWS and how these failures could be addressed. Finally, data obtained from interviews were processed based on discourse and institutional analysis specifications in order to reveal forest practices and governance questions.

4. RESULTS

4.1. STAKEHOLDERS, POWER AND INTEREST IN POLICY MAKING IN THE THWS

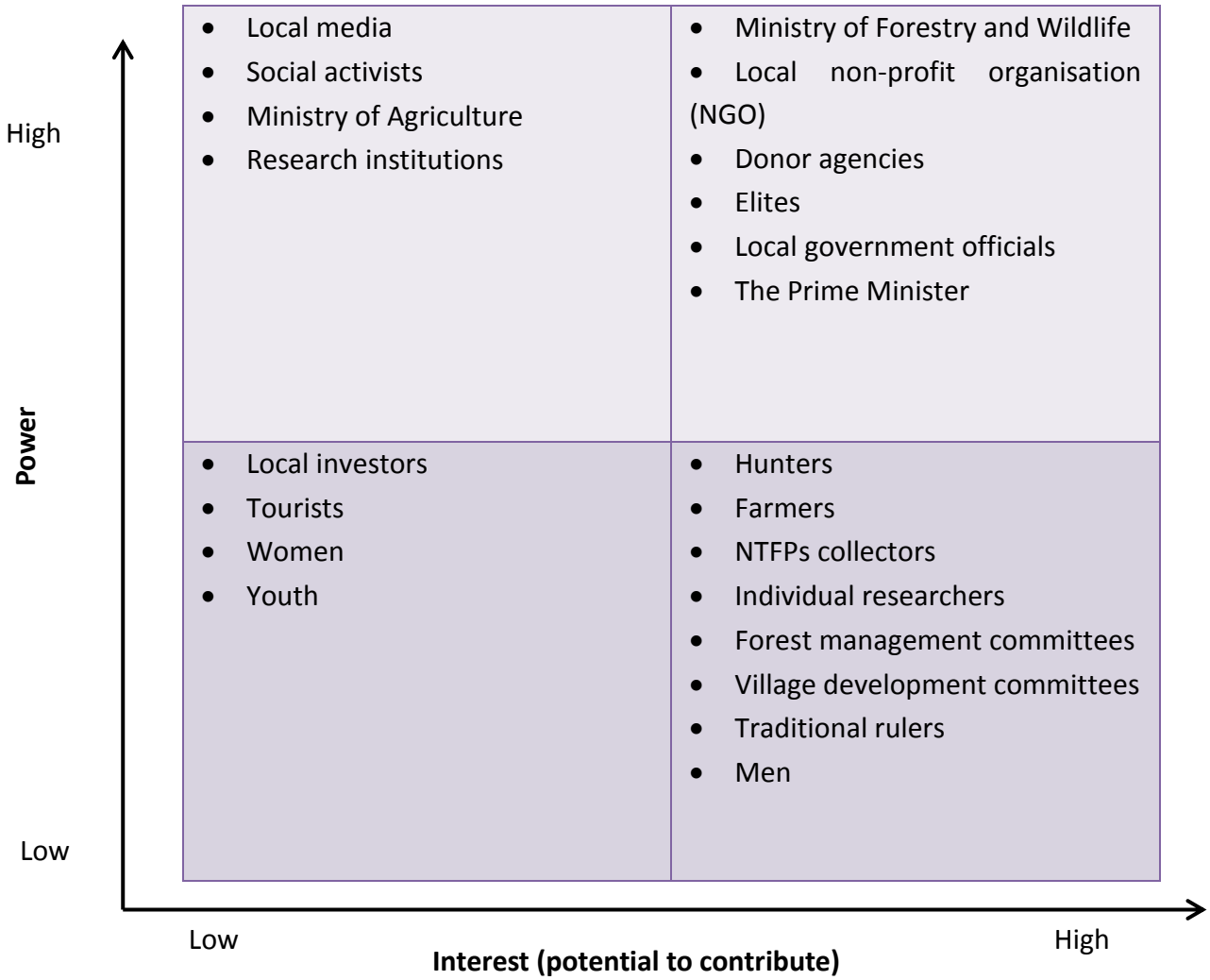

Figure 5.1: The relationship between actors' power and interest in policy making in the THWS

The evaluation of stakeholders' power and interest in policy making (Figure 5.1) reveals uneven distribution of power and interest among actors. Notably, the Ministry of Forestry and Wildlife (MINFOF), the local non-profit organisation, donor agencies, local government officials, elites and the Prime Minister were revealed to exert high power and interest in forest practices and governance in the THWS. The Prime Minister was revealed to have the final decision in the legalisation process of the THWS as a state forest (wildlife sanctuary). The status of the THWS as a state forest introduced new forest practices as well as new management institutions. The local NGO was revealed as the main initiator of the wildlife conservation project in the THWS and also as the main actor that initiated the

process leading to the engagement of other actors in the current forest management practices (bureaucratic forest governance). The local NGO was considered as an actor with high power and interest because it was the main actor providing financial and technical support to most of the activities influencing forest practices in the THWS including the gazetting process of the forest. On the other hand, MINFOF was revealed to be in charge of monitoring the activities of the local NGO in the field. MINFOF also acted as the liaison between the state (Prime Minister) and the local NGO/local people. However, it was revealed that the interactions of MINFOF with forest practices in the THWS were largely based on the field report and information made available to them by the local NGO. "*…MINFOF is aware and is in support of the conservation activities of the local NGO in the THWS. The technical note which informed the creation of the THWS was prepared by MINFOF based on the field report from the local NGO and also based on a confirmatory field visit made by assigned MINFOF staff…"* noted an interviewee from MINFOF. Donor agencies were revealed to be the main sponsors of wildlife conservation in the THWS. Their sponsorship was via the local NGO. Thus, the local NGO was directly accountable to the donor agencies for their activities and output in the THWS. "*…We have until the end of this year to update our donors on the progress of the creation of the THWS. Otherwise they might withdraw their financial support if positive progress is not made*…" noted an interviewee from the local NGO. The local government officials interacting with forest practices in the THWS included the divisional officers and the sub-divisional officers. They were revealed as the main mediators of conflicts between the local people and the local NGO. Also, the elites were revealed to have high interest and power in the THWS. Field reports revealed that some stakeholders contested conservation activities in the THWS on many occasions. "*…Some of the elites, especially those in political positions, have written petitions against the creation of the THWS. They claim that we are using the conservation project to our advantage*…" reported a staff member from the local NGO.

Other actors who had high power potential to influence forest practices in the THWS included the media, social activists, the Ministry of Agriculture, and research institutions. However, they were observed to exhibit low interest in the THWS. The local media for instance have the potential to unveil the underlying nature of forest practices through field engagements. However, their presence in the THWS was almost invisible. Similarly, the strength of social activists as the voice of the underprivileged was almost absent in the field. Given that agriculture was the main livelihood activity in the project area (Nkemnyi et al. 2016b), the engagement of the Ministry of Agriculture in promoting sustainable agriculture practices could go a long way in reducing local people's encroachment on the forest. Based on field observations, the presence of the Ministry of Agriculture in the field was not recorded. The role of researchers in providing information that could support sustainable forest practices implementation was revealed to be under-exploited. Data from this study suggested that little has been done in the THWS in terms of investigating the processes leading to the creation of the THWS. Understanding how these processes evolved in practice could benefit management sustainability.

The interest of socially embedded actors (hunters, farmers, NTFPs collectors, individual researchers, forest management committees, village development committees, traditional rulers, men) was revealed to be linked to their livelihood needs of the forest and their connection to the forest as based on their customs. "…*our ancestors used this forest for several years yet we can still find all we need from the forest. We also believe after our generation, our children and grandchildren will also be able to find all they need from the forest. I do not believe in extinction, the more we use forest resources, the more the forest regenerates…"* reported a hunter in the local community. Despite the high interest of the socially embedded institutions in forest resources they were revealed to have little power over forest policies. Based on state legislation, the authority to govern forest resources was completely left to the state with local people playing only a marginal role in forest management. The interests of the local people could only be represented by the community head (chief) as per the policy document. How the THWS could be managed was mainly in the decision-making power of the local NGO in collaboration with the state and with the help of local people when needed. The fear of the local people of completely losing leadership authority over forest resources was observed to be the main reason why they continued to engage in unsustainable forest practices. "…*We know we do not have a major voice in the government decision to create a protected area in our forest. There is nothing much we can do apart from putting up our own strategies that will enable us to continue to access the forest for our household needs…"* reported a local community member. Similarly, other actors including local investors and tourists who could be attracted to the THWS were revealed to have demonstrated little interest. Their engagement was revealed to be highly dependent on the governance output of the THWS. "…*it will take a gradual process for us to be able to fully develop the touristic potential of the THWS and to invite other investors to come in. The benefits of conservation are not as sudden as the local people think…"* reported a staff member of the local NGO. Similarly, the engagement of women and youth in forest governance issues in the THWS was revealed to be suppressed because of the local tradition and belief systems. The local tradition provides fewer opportunities for women and youth to participate in public decision making. The village tradition council, which is responsible for decisions on the affairs of the local community, was dominated by men. The voice of women and youth was only represented by an elected representative – women's leader and youth leader respectively.

Furthermore, the analysis of power-relations among actors revealed that the more powerful actors had the notion that the local people (less powerful actors) could easily trade in their interests if provided with incentives. However, in practice, this was revealed not to be true. Data from this study revealed that although livelihood support was provided as incentives to reduce local people's engagement in forest-based activities, on the contrary, local people perceive livelihood support from local NGOs as a means to buy them out of the forest. Thus, they considered it as an additional means of livelihood because they were not willing to trade in their forest engagements. *"…We have received some livelihood support from the local NGO. They offered to support us on piggery farming. However, some people*

turned the offer down because they believed it cannot compensate their forest usage. In addition, the support only targeted specific groups of people and not everybody that uses the forest…" reported a key informant in the local community.

Furthermore, data from this study also revealed that the creation and management of the THWS was dominated by a few bureaucratic institutions (actors). On the other hand, actors like the media, social activists, research institutions and the Ministry of Agriculture, who could influence sustainable forest practices, were rather less interested, due to a lack of incentives to engage in the process. The bureaucratic and political nature of protected area (state forest) creation and management in Cameroon was also highlighted as a challenge for inclusive participation. "…*protected area creation in Cameroon is mostly facilitated by powerful and financially viable non-profit organisations. They prefer working with individual researchers that might protect their interest compared to institutions that might want to report reality in the field…"* reported a key informant in a research institution.

A further analysis of actors and the type of power they have in relation to their interests yielded the results presented in the table below.

Table 5.1: Actors' interest and power in forest practice in the THWS

Actors	Main interest	Type of norms	Data sources
Local villagers	Daily subsistence, mainly from agriculture; Access to benefits from forest protection	Customary law	In-depth interviews Field observations Peer-reviewed articles Project report
Forest Management Committee	Benefits from forest protection such as donor support and employment	Customary/state law	In-depth interviews Field observations
Local NGO	Influence over decision making Continued project funds for staff support Influence on project functioning and project assessments Initiating more projects	State law	In-depth interviews and informal conversations with project staff Field observations
Local government	Influence over decision making Benefits (per diem) in facilitating policy process	State law	Informal conversations Field observations Document analysis
Conservation Agency	Meeting policy objectives and targets Continued support and collaboration from donors Initiating more projects	Convention/state law	In-depth interviews and informal conversations with project staff Document analysis Field observations
Donor institution	Achieving environmental and social policy objectives Continued support and funding Positive reports from projects	Convention	Document analysis Observations at international donor-attended workshops
Media	Marketable news	State law	Document analysis
Researchers	Scientific data		Document analysis

Project impact assessment	State law/convention	Field observations

The main source of norms supporting actors' interest/power was revealed to be state law, customary law or convention. The ability of actors to exercise their interest and power in the THWS was observed to be governed by these norms. Actors were observed to apply the law in varying ways to pursue their interests in the best way possible within their power. Given the diversity in norm systems, there are undoubtedly tensions between norms. The application of these norms varies in field practices and policy arenas. For instance, although the NGO was able to influence policy change in forest management, in practice, the local people were more powerful in determining the implementation outcome of the policy.

4.2. A CROSS ANALYSIS OF FOREST POLICY AND PRACTICES IN THE THWS

Content analysis of the 1994 forestry law and the 1995 forestry decree guiding the implementation of forest practices in Cameroon revealed discrepancy between theory and practice.

Firstly, the process of policy implementation as stated by the policy texts suggested a strictly bureaucratic nature of institutions assigned with the legal rights to govern state forests. The position of the local actors as the main forest users was largely ignored in the decision-making process. The procedure outlining those who could be involved in the decision-making committee (reflected in Article 20 of the 1994 forestry law) recognised only the traditional rulers, who most often do not broadly represent the interests of the entire community in such cases. Furthermore, the policy documents did not adequately address the issue of conflicting interests between local livelihoods and the protection of forest resources for state interests. Article 19 of the forestry decree acknowledged that any claims and reservations on the part of the local people would be examined and that any property due to be expropriated should be evaluated. However, no specific guidelines were provided on claims that were legitimate. Neither were guidelines provided for the evaluation and compensation of claims raised by the local people. In-depth interviews revealed that although several claims were raised by the local people, none had been considered for compensation as per the period of data collection. Notwithstanding, this did not make a difference to the way local people accessed the forest: "*…I still go to my farmland inside the area they have mapped out for the protected area. I have not received any compensation and I cannot abandon it because that is where I get money to survive my household…*" noted a key informant from a local community.

Text analysis also revealed that out of 12 representatives (technical committee) who were recommended by the state to deliberate on a proposal to create a protected area, 10 of them were state representatives. Only the local community organ, represented by the chiefs (traditional authorities) and the local representation of the public body responsible for development (the local NGO) were non-state institutions.

According to article 38(1) of the 1995 decree, the technical committee was composed of the following:

The chairman:

- The Senior Divisional Officer or his representative

Rapporteur

- The local representative of the Ministry of Forests

Members:

- The local representation of the Ministry of Tourism;
- The local representation of the Ministry of Territorial Administration;
- The local representation of the Ministry of Environment;
- The local representation of the Ministry of Stock Rearing;
- The local representation of the Ministry of Agriculture;
- The local representation of the Ministry of Mines;
- The local representation of the public body responsible for development;
- The deputy of the National Assembly Member(s) for the community
- The mayor or representatives of the community concern;
- The traditional local authorities.

In addition, field data and analysis of the policy texts also revealed that a management plan was not listed as a requirement to proceed with the creation of a protected forest. *"… now that we have been granted a protected forest, we are presently mobilising resources to develop a management plan…"* reported an official working with the local NGO. Furthermore, in accordance with Article 18 sub-section two of the 1995 forestry decree, the decision to accept or reject the application for the protected area was to be published after a period of 30 days following the public notice. The period between the date the public notice for the THWS was published and the date of the Prime Ministerial Decree no. 20141009/PM of 10 September 2014 authorising the creation of the THWS, was calculated to have been about 34 months (around 1020 days). This violated the 30 day period specified by the forestry policy. This deviation could be interpreted as result of ineffectiveness in the institutional processes governing the creation of the protected area. On the other hand such a deviation could also have created opportunities for the voice of the local people to be heard and taken into consideration for the creation of the protected area. However, based on field data there was no evidence of opportunities offered to local people during the period available to present their claims.

Despite the fact that the state was open to third party collaboration in the policy implementation process, text analysis revealed that the state was still at the central point of decision making in the creation of the protected area in Cameroon, given that in theory it had the sole power to decide who could participate in the process of the creation of the protected area. However, field data revealed that, in practice, third parties with financial autonomy like the local NGO coordinating the process of the protected area, were not

directly accountable to the state. Their activities were financed by donor agencies. Thus, they paid more attention to meeting the donor agency requirements, which may not necessarily have aligned closely with the local government objectives in resource management. Field data also revealed that the engagement and most of the activities of the state in the process of the creation of the protected area were financed by the local NGO. This gave the local NGO a greater chance, in principle, to influence the position of the state in the decision making process. Thus, the mechanisms and terms of collaboration between the state and the local NGO facilitating the protected area creation process was revealed to be structured in a manner that could not enable effective monitoring and evaluation by the state. Field data also revealed that evaluations conducted by the state in order to assess the competence of the local NGO in facilitating the process of creating the THWS were based on field reports published by the local NGO itself. Field reports which are often not accompanied by adequate field outputs might not in this case provide a fair judgement to support the decision of the state to create a protected forest. This is because field reports are most often orientated to suit the expectations of donor agencies rather than meeting local efforts to reconcile livelihood needs and wildlife conservation efforts.

4.3. THE ROLE OF ACTORS' DISCOURSES IN SHAPING FOREST PRACTICES IN THE TOFALA HILL WILDLIFE SANCTUARY

The role of actors' discourses in forest practices in the THWS was explored by using information from both field interviews and reports published in the internet. The use of the two types of data format enabled an appreciation of how the intended and unintended interventions of actors influenced forest practices in the THWS.

Discourse analysis covering 107 reports from the internet (internet reports) on the THWS classified actors and their dominant discourse about the THWS into 11 themes (Table 5.2). This selection of themes was based on the frequency of the discourse and its relevance to forest practices in the THWS. All internet reports were obtained through a Google search. The analysis focused on revealing key narratives, the interest projected in narrations (actors concerned) and the number of media reports on the narrations. The analysis also considered the issues raised in the narrations, with a focus on whether they were positive, negative or neutral, and how the narrations were related to the authors. The analysis also looked at the intended and unintended actions the narrative could trigger based on the knowledge transferred.

Table 5.2: Actors' engagement in and key narrations of the THWS based on media reports

Narrations key phrase	Actors engaged	Number of reports
"New protected site created in Cameroon for the protection of the Cross River gorilla"	Local NGO, conservation agencies, donor institutions, local and international media institutions	42
"Camera traps capture chimpanzees in the	Local and international media institutions, donor	21

THWS"	institutions, conservation agencies; local NGO	
"Conservation value and threats of the THWS"	Local NGO, conservation agencies; donor institutions, researchers	17
"Cameroon loses a Cross River gorilla"	Conservation agencies, local NGO, media institutions	9
"Reconciling community development needs and great apes conservation"	Researchers, local NGO, conservation agency, donor institutions	9
"Applaud creation of THWS for the Cross River gorillas to Prime Minister of Cameroon, Philemon Yang"	Conservation agencies, local NGO	2
"75,000 people call on Cameroon government to establish new cross river gorilla reserves"	Conservation Agencies, local NGO	2
"Wabane protests creation of wildlife sanctuary"	Social activist	2
"Resistant villages accept gazetting of Tofala sanctuary"	Local NGO	1
"Bangang embraces THWS"	Local NGO	1
"THWS has REDD+ potentials"	Local NGO	1

The key discourses of actors (Table 5.1) were analysed in relation to field interview outputs, in order to provide a more complete overview of how the knowledge held by actors, through their actions or narrations, could influence forest practices. Internet reports uncovered actors and other key discourses that were not clearly captured during field interviews. For instance, the roles/interests of the media, donor institutions and conservation agency (Table 5.2), which were not visible from in-depth interview analysis, were clearly uncovered through internet reports. The media, conservation agency and donor institutions were revealed as significant and 'invisible actors' influencing decisions either consciously or unconsciously through the knowledge they transfer to the public via their narrations. They were observed to be the main promoters of narratives that featured in the internet reports and that recorded the highest number of reports.

Discourse analysis of internet reports revealed that most often, the motives of 'invisible actors' might not necessarily be driven by their personal interests in the project, but rather by their interest in the concepts and theories surrounding the project actions. For instance, one of the internet reports revealed that 75,000 people signed a petition to support the creation of the THWS. It is probable that those who sign the petition were motivated because of their zeal to support biodiversity protection, and also because of the need for the conservation actions as narrated by the actors concerned. Similarly, another petition entitled 'Applaud Creation of Ape Sanctuary' addressed to the Prime Minister of Cameroon, Philemon Yang, was also supported online by many individuals who were less informed in terms of the detailed project assessments.

Internet reports analysis also revealed that powerful actors (donor institutions, conservation agencies and the local NGO) promoted mainly positive narrations, which could serve their interests in achieving their conservation objectives. However, the critical analysis of some positive narrations also revealed challenges which might have existed prior to the positive narrations. For instance, one of the media reports, entitled 'resistance villages accept gazetting of Tofala sanctuary' (Table 5.1) revealed that prior to the moment of these

narrations, some villages were previously against the process of gazetting the THWS. Furthermore, another report entitled 'Bangang embraces THWS' also mentioned the fact that not all the villages were in agreement or supported the creation of the THWS as reflected in the technical note. This narration also laid grounds for questioning the effectiveness of collaborative management and local participation in the THWS. In addition, analysis of media reports also revealed that actors' ability to continuously produce positive and convincing narrations that are appealing to the policy makers, donor institutions, and media and conservation agencies played a key role in influencing forest practices in the THWS. For instance, the phrase '*resistant villages accept gazetting of Tofala sanctuary*' makes a success story out of a previous challenge and therefore presents a scenario which insinuates that efforts in collaborative management are being made in the policy implementation process. Furthermore, report analysis also reveals that the local NGO continues to press hard to lobby for more public support and bring in other stakeholders that might support their interests in the conservation of the THWS. For example, the report titled '*THWS has REDD+ potentials*' revealed a framing by the local NGO that was intended to mobilise more support for and actors into the conservation project by distracting actors from the main wildlife conservation agenda and making them see more possible benefits the project could bring to the local people in terms of livelihood diversification potentials.

Discourse analysis of internet reports also revealed that the views of local people were captured in the media reports only by social activists in the form of petition writing. In addition, scientific reports about the THWS were also revealed to capture the interests of the local people. However, the scientific reports were also revealed to focus more on meeting the objectives of the study rather than working for the interests of the local people.

4.4. THE ROLE OF LOCAL ACTORS' ACTIONS IN SHAPING FOREST PRACTICES IN THE THWS

4.4.1. ACTIONS OF THE LOCAL NGO TOWARD FOREST PRACTICES

The actions of the local NGO to influence forest practices were revealed to be designed in response to the local people's actions within forest practices and also to build more recognition of and authority to access forest resources. One of the actions developed to influence forest practices was the creation and legalisation of forest management committees. The forest management committees were created in all the villages adjacent to the THWS with the main objective that the committees could promote the involvement of the local people in decision making regarding forest management issues. It was also revealed through field interviews that one of the first and main strategies for the wildlife conservation organisation was to negotiate access to the forest resources. "…*We created the forest management committee to act as a liaison between us and the local people. The created committees were also legalised as "common initiative groups" at the level of the local*

government to enable them to access other benefits including funding for development projects from the government and international organisations…" recounted an interviewee (staff of the wildlife organisation). The forest management committee was made up of members of different strategic groups (women's representatives, youth representatives, men's representatives, traditional council members and other key informants in the local community). The members of the forest management committee were nominated and elected by the local people who were present in the formation meetings.

Secondly, the local NGO also attempted to influence forest practices through negotiations with local authorities and local government**.** The legal position of the wildlife conservation organisation was observed as a key factor in negotiating access to forest resources. At the community level, local authority members including community heads and key informants like youth leaders, women's leaders and social group leaders were the main target for negotiations. Meetings were reported to have been held with members of local authorities in the local community on several occasions in order to negotiate the access of the local NGO to the THWS. "…*the wildlife conservation organisation has held several meetings with us at their office and in the city, to talk about the importance of conservation and to convince us to talk to our community members to collaborate with the conservation project*…" recounted an interviewee (community head).

It was also revealed that the local NGO placed a lot of emphasis on state laws as a tool for guiding forest practices in state forests like the THWS. By putting forward these strategies they believed they could regulate forest encroachment as a result of human activities in the THWS. "…*We have stopped the wildlife conservation organisation from coming to our forest because they keep saying that the government has given them the right to go into our forest. The government does not live here, so we want them to go and bring the government to take them to the forest*…" recounted an interviewee (community member). "…*We are working in accordance with the forestry and wildlife law and when the management plan of the protected area is developed, law enforcement will be strengthened to prevent illegal activities in the forest area*…" recounted an interviewee (wildlife conservation staff).

The provision of livelihood support to local community members was also revealed to be a strategy of the local NGO to shift the livelihood attention of the local community members from the forest to other alternative livelihood options. Thus, the support of alternative forest-based livelihood activities was developed as a strategy to reduce over-dependence of local community members on forest resources with a focus on hunters and farmers. **"…***We have implemented a number of livelihood activities in some of the communities adjacent the THWS. This will help to reduce their dependence on forest resources for livelihood and will also help to reduce human pressure on the forest. Some of the activities we have supported include beekeeping, piggery farming and establishment of oil mills to facilitate palm oil production* …" recounted a member of wildlife conservation staff.

Out of the 119 local community members interviewed for this study, 19.32% (n=23) admitted to have benefitted from alternative livelihood support from the conservation project either through training, technical or financial support. However, only 21.7% (n=5) of the beneficiaries attested that it had had an impact on their livelihoods. About 78.3% (n=18) of the beneficiaries attested that the livelihood activity they received support for was not successfully implemented. The main reason for the unsuccessful implementation was linked to inadequate capacity of the beneficiary to sustain the supported activities. "…*I received some piglets from the conservation organisation but they all died because I did not have enough money to buy adequate medicine for the piglets*…" recounted an interviewee from Bangang community. Field observations and interviewees also revealed that some projects were not sustainable because of poor monitoring and evaluation. Apart from the oil mill project, which was still in place and partially functioning, most of the supported livelihood activities ended prematurely. In addition, field interviews also revealed that the support received by local community members to establish alternatives livelihoods could not in that moment compensate for or match the benefits they normally received from forest-based activities. Thus, local community members were not satisfied with the efforts of the conservation organisation in providing alternative livelihood support. Neither were they committed to engage in sustainable forest management practices. "…W*e cannot leave the forest, if the government preferred the animals in the forest to us, then it will have to forcefully take us out of the forest. We are ready to fight for our forest*…" noted an interviewee in the Fossimondi community.

4.4.2. ACTIONS OF THE LOCAL PEOPLE TOWARD FOREST PRACTICES

Field interview results revealed a number of actions taken by the local community members to protect their interest in the THWS. These actions were revealed to have affected forest practices in one way or another. These actions were pursued mainly to counteract the efforts of the local NGO to effectively implement wildlife conservation activities. This pursuit was expressed using a number of strategies. It was revealed that the local people avoided the conservation education meetings organised by the local NGO intended to seek synergies on the conservation of the THWS. "…*The wildlife conservation people have come here several times to educate us on the importance of conserving the forest. However, we are no longer interested and hardly attend such meetings again because there are no practical commitments available to guarantee our livelihood if we continue to support them*…" recounted an interviewee from the Fossimondi community. The rationale of the local community members for abstaining from the conservation education meetings was revealed to be one of the ways to show that their interests were not well represented in wildlife conservation objectives and that they were not willing to support the wildlife conservation actions.

Interview results also revealed that some of the local community members developed strategies to restrict the access of the local NGO to the forest landscape for conservation activities including wildlife surveys and land use mapping.; "… *We have told the wildlife conservation staff that we do not want to see them in our forest area. If they come they will be responsible for what will happen to them. The government might have given them the authority to come and do their wildlife conservation activities, however, we still remain the rightful owners of the forest*…" recounted an interviewee from the local community. The communities revealed to have instigated these actions included Fossimondi and M'mockmbin. Further probing as to why the wildlife conservation organisation was denied access to the forest area revealed that have not yet met the development demands of the local community members in term of development demands. One of the demands of the local community members was that the wildlife conservation organisation should start to support projects that would provide alternative livelihoods support to the local communities before proceeding with other conservation activities. "…*We spent three days in Fossimondi trying to convince the community members to permit us to have access to the forest area in order to carry out land use mapping activities but they were not willing to collaborate with us. They told us that if we insist and proceed to the forest, then we will be responsible for what will happen to us in the forest. We did not go against their will in fear of the repercussions that may occur when you go against cultural norms*…" reported an interviewee (field staff for the wildlife conservation organisation).

Other strategies adopted by the local people which affected forest practices included the intentional conversion of forest to farmland. "…*We have started clearing the forest in our community for farming activities. If we use all of the forest for farming activities, there will be no forest left for conservation and the wildlife conservation organisation will go away*…" recounted an interviewee from the Fossimondi community. Local people believe they have customary rights over the forest and therefore could use their forest land for the benefit of the local community as required by the customary law. "... *Our community reserved some land for future use but since the conservation organisation wants to take the land from us, the traditional council has given community members the rights to start farming on the land*…" recounted an interviewee from the Fossimondi community. Field observation also supported evidence that more than four hectares of forest was recently cleared for agricultural purposes during the period of data collection.

Furthermore, field data also revealed that the local people also use elites as their own more powerful actors to contest wildlife conservation. Interview results revealed that local community members holding important political positions had written petitions against the creation of a protected area as a way of preserving wildlife in the THWS. "…*Some politicians from the local community have written petitions to the government against the conservation project. They claim that we are using the conservation project as a means to lobby money from the international community and not for the good of the local community members*…" recounted an interviewee (wildlife conservation staff). Interviews with community members also revealed that elites played an important role in decision making

with regards to the wildlife conservation project. "…*We do not take decisions on the wildlife conservation project without consulting our elites. We believe they are in the best position to advise us on what to do in certain situations. We are aware that we are dealing with the government and it is difficult to fight the government and win*…" recounted an interviewee (community head). "… *Most often when we have meetings with the wildlife conservation organisation, we do not give them our opinion immediately. We always tell them that the traditional council will sit back and deliberate on the issues and get back to them. This gives us ample time to communicate with our elites and get feedback from them as well*…" recounted an interviewee from the Folepi community.

5. DISCUSSION

5.1. FOREST PRACTICES AND FOREST GOVERNANCE IN THE TOFALA HILL WILDLIFE SANCTUARY

The analysis of the power and interest of actors in the THWS revealed diverse interests in forest usage. This study captured the use of the forest for livelihoods and for wildlife conservation as conflicting interests in the THWS. These conflicting interests in forest use led to scenarios where actors tried as much as possible to develop strategies that could protect their pursuits within forest usage regardless of whether or not they aligned with sustainable forest management. This was exemplified, for instance, by the intentional conversion of forest into agricultural land as a means to prevent conservation practices. The above finding agrees with the argument that in forest management, local actors may hold sometimes widely diverging views on the same organisations regarding what they do, how they work and by whom they are led (De Herdt and Abega 2007). On the other hand, the study also argues that even when the proposed forest practices might align with sustainable governance practices, other aspects of sustainability could still be at stake. For instance, although the conservation of the THWS and the shift in forest governance institutions aligned with the need to bring about sustainable forest management practices, the livelihood needs of the local people, which are also an important aspect of sustainable forest governance, were also at stake. The above finding agreed with the argument that there is a need to continuously adapt legislative frameworks adopted at national level in such a way that they maximise the use of forest resources (Jana et al. 2014; Secco et al. 2014). The latter argument also agrees with the reasoning that it is important not only to involve relevant actors in conservation planning, but also to pay particular attention to their livelihoods needs, making sure that implementation strategies also consider cultural connections to the land (Pilgrim et al. 2009).

The results also revealed that an actor's ability to mobilise resources played a key role in empowering the actor to protect his/her interest. Actors were observed to act not only according to the legislation but also by mobilising the resources and negotiating the social networks that could enable them to sustain their authority and power in influencing forest practices. For instance, the interest of the local NGO in the THWS was revealed to be the main motive for it to seek funds from donor agencies to pursue its agenda and later to mobilise other actors like the state in the process. The local NGO also established social relations and negotiations with the local government and local authority members that could promote the local NGO in maintaining the power and authority needed to protect their interest in the THWS. On the other hand, the study revealed how the local people tried to liaise with their elites to mobilise resources that could counter the efforts of the local NGO.

The results of this study revealed that external actors, including donor institutions and conservation agencies, may exert a strong influence on local conservation practices either intentionally or unintentionally. The results also suggested that the local conservation organisations were more concerned with the need to meet the reporting requirements of the donor institutions so that they could continue to attract more funding to sustain the project implementation. "…*We have until the end of this year to update our donors on the progress of the creation of the THWS. Otherwise they might withdraw their support if positive progress is not made*…" noted an interviewee from the local NGO. The drive to meet donors' expectations might lead to the loss of cognition of the realities in the field. The latter finding agrees with the argument that local participation in forest management remains a fundamental challenge to be resolved despite the growing political and academic interest in participatory management, and given the mismatches that could occur between local policy preferences and the preferences of external actors like donors (Ahlborg and Nightingale 2012; Cook et al. 2017).

5.2. IN SEARCH OF SUSTAINABLE FOREST GOVERNANCE IN THE TOFALA HILL WILDLIFE SANCTUARY

Access to the forest for both livelihood and wildlife purposes in the THWS revealed the various conflicting forest practices pursued by different actors. This highlights the need to forge alignments between the different forest actors. The local NGO tried to forge alignment in forest practices by developing strategies that could enable other actors to support the conservation agenda of the THWS. These strategies included supporting the local people with livelihood needs that were not forest oriented, holding negotiation meetings with strategic groups in the local community to convince them to support conservation objectives, and emphasising the roles and regulations in state legislation. However, this study also revealed that despite the efforts of the local NGO to forge alignments in sustainable forest actions, their efforts always prioritised their main interest (wildlife conservation). The study also revealed that efforts to forge alignment were mostly dominated by the exercise of legal authority. The results revealed that the local NGO placed a lot of emphasis on state law authorising them to pilot forest management issues in the THWS. However, it is argued that the foremost power held bureaucratic institutions could introduce potential setbacks to the possibility of forging alignment given that actors are very conscious and sensitive to power-relations (Stirling 2006; Paletto et al. 2016).

This is also in line with the argument that a focus on the main agenda of the actors could be problematic in forging alignments in sustainable forest management (Li 2007). Firstly, in this case, it narrowed down the view of the main actors while developing and implementing policies that could foster sustainable forest governance. For instance, the focus of the local NGO on wildlife conservation was observed to have missed out certain characteristics of the forest which are considered to be very relevant to the local people.

These included the forest as a home, the forest as cultural heritage and the forest as a lifestyle. As per the field data from this study, none of these strategies employed by the local NGO to forge alignments adequately considered the above aspects. This finding also agreed with the argument that conflicts in forest management could be a result of mismatches between that which local people and external actors prioritise (Berkes 2004; McShane et al. 2011). Moreover, knowledge held by actors could influence their choice of behaviour in forest management (Ribot and Peluso 2003; Nkemnyi et al. 2014).

The analysis of forest practices in the THWS also revealed opportunities that could be harnessed in order to forge sustainable forest governance. For instance, although the local people developed strategies to prevent conservation activities from being carried out in their communities, the results analysis also revealed that they were also open to negotiation. One of the demands of the local community members was that the local NGO should commence the support of development projects that would provide alternative livelihood support to the local communities before proceeding with other conservation activities. This suggested that despite the conflicts in forest practices there were still opportunities to facilitate sustainable forest governance. The above finding also agrees with the argument that actors' ability to manage failures as the outcome of rectifiable deficiencies and to smooth out contradictions so that they seem superficial rather than fundamental could strengthen forest management efforts (Li 2007; Dinnie et al. 2015).

5.3. CLOSING DOWN OPPORTUNITIES FOR CONFLICT IN MANAGEMENT OF THE TOFALA HILL WILDLIFE SANCTUARY

The results of this study revealed that power discrepancy was one of the major challenges to sustainable forest practices in the THWS. The local people felt that more management power was given to the local NGO through the state legislation and because of that perception they felt that they were left out of the process of forest management. Local people felt left out of the forest management process because they had management power/rights over forest practices prior to the creation of the THWS. The transfer of these rights to the state left them powerless and also pushed them to seek means to build alternative sources of power that could enable them regain forest management rights regardless of the impact on sustainable forest management. This study argues that if a fair share of authority and power could still be retained for the local people via customary institutions, it could motivate inclusive participation and open dialogue for sustainable management practices. Related to this, there is also the need for policy makers to consider the vulnerability of policy implementation processes in protected area creation and management as revealed in the case of THWS. For instance, the involvement of third parties like the local NGO in the implementation of forest practices was observed to be a potential avenue for strengthening negotiations that could lead to sustainable forest practices between the state and the local people. However, this potential was threatened by the fact

that in practice the local NGO was not directly accountable to the state. The activities of the local NGO in THWS were financed by international donor agencies. Thus, the local NGO was directly accountable to donors and privileged the agenda of the donor agency (which most often might not align with local priorities) over the agenda of the state in order to continue sustaining financial support from the donor agencies.

The results of this study also revealed that the processes involved in the management of state forest were too bureaucratic and offered limited space for local people to be part of the decision making process. For instance in the process of creating a protected area, the interest of the local people could only be represented by the village heads (the chief) and most often these village heads did not broadly represent the interests of the local people. In addition, the fact that a legalised management plan was not a pre-requisite for the creation of a protected area also raises sustainability questions in terms of the alignment of various actors' interests, and to what extent sustainability factors were considered in the process of policy implementation. The lack of a forest management plan was observed to limit sustainable forest management options given the argument that forest management plans are considered to be key policy instruments that could facilitate sustainable forest management (Brukas and Sallnäs 2012).

This study argues that there is a need for the state as the main actor in the implementation of protected area policy in Cameroon to develop strong mechanisms that could help in the monitoring and evaluation of all stakeholder activities. This study also suggests that a well-developed mechanism by the state to finance policy implementation in protected forest management could strengthen efforts and initiate opportunities for transparency, accountability and effectiveness in forest practices. However, for this to happen, it is necessary for the state to reconsider its position in the implementation of protected area creation and management in Cameroon. The latter finding is supported by the argument that the development of mechanisms for financial sustainability and accountability could play a relevant role in bringing about sustainable forest practices (Appanah and Shono 2009).

6. CONCLUSION

This study revealed that the pursuit of forest resources for wildlife conservation purposes and for livelihood needs were in conflict. Conflicts were a result of diverse interests in the use of forest resources. The results also revealed that actors search for avenues to pursue their interests in forest practices regardless of whether or not they aligned with sustainable forest governance strategies. The results also revealed that external actors, including donor institutions and conservation agencies, exerted a strong influence on local conservation policies either intentionally or unintentionally. However, the end result of this in terms of the implementation process in the field was largely dependent on the reactions of the local people to the various strategies proposed/implemented. The ability of external actors to pursue and sustain their interests in forest practices in the THWS was revealed to be a function of their ability to mobilise resources that could enable them to solicit and win the attention of the local people. The results revealed that the local NGO supported alternative livelihood activities as a mean to encourage the local people to promote the wildlife conservation agenda.

This study argues that the need to forge alignment in actors' interests in forest resources should focus more on the overall goal of sustainable forest management and less on defining the interest of the actor. A focus on the main interests of the actor could be problematic in efforts to forge alignments in sustainable forest management. Focus on the actor main interest could narrows the scope of view of the actors in designing and implementing policies for sustainable forest management. The study revealed that some local community members intentionally converted forest land into farmland as a strategy to prevent the implementation of wildlife conservation activities. This example reflected a focus on the actor's agenda rather than focusing on the sustainable forest management agenda. The study also revealed that despite the conflicts in forest practices in the THWS there were still opportunities that could be technically rendered to facilitate sustainable forest governance. For instance, in the case of forest conversion to farmland, the local NGO could use this as an opportunity to initiate dialogue rather than condemning the action and adhering to the rules of the legislation in resolving the issue. This scenario could rather be rephrased as a matter of technique, and in a way that closes down debate about the right and wrong of the action. The results of this study suggest that in addressing the factors that could open up sustainable forest practices, it is important to weigh up the different options, taking into consideration criteria that could enhance equity and transparent dialogue. Furthermore, this study also revealed that the inability of the state to finance the implementation process of the creation of the THWS was revealed to limit transparency and accountability in the management process. The activities of the main implementer (the local NGO) were financed by an international donor. Accordingly, the NGO was only directly accountable to the donors. This study therefore suggests that the development of a financial mechanism by the state to finance the implementation of forest practices could go a long way to creating more opportunities for accountability between the different actors. This

could also create opportunities to initiate participatory actions, something which is relevant to sustainable forest management.

REFERENCES

Achterkamp MC, Vos JFJ (2007) Critically Identifying Stakeholders Evaluating boundary critique as a vehicle for stakeholder identification. Syst Res Behav Sci 14:3–14.

Agrawal A, Chhatre A, Hardin R (2008) Changing governance of the world's forests. Science (80-) 320:1460–2. doi: 10.1126/science.1155369

Ahlborg H, Nightingale AJ (2012) Mismatch Between Scales of Knowledge in Nepalese Forestry: Epistemology, Power, and Policy Implications.

Alemagi D (2011) Sustainable development in Cameroon's forestry sector : Progress, challenges, and strategies for improvement. African J Environ Sci Technol 5:65–72.

Anderson J, Mehta S, Epelu E, Cohen B (2015) Managing leftovers: Does community forestry increase secure and equitable access to valuable resources for the rural poor? For Policy Econ 58:47–55. doi: 10.1016/j.forpol.2014.12.004

Andersson K, Agrawal A (2011) Inequalities, institutions, and forest commons. Glob Environ Chang 21:866–875. doi: 10.1016/j.gloenvcha.2011.03.004

Appanah S, Shono K (2009) Financing Sustainable Forest Management: A Growing Challenge. In: Appanah S, Mansur E, Krezdorn R (eds) Strategies and Financial Mechanisms for Sustainable Use and Conservation of Forests: Experiences from Latin America and Asia. FAO Regional Office for Asia and the Pacific, Chiang Mai, Thailand, pp 1–140

Araujo P De, Constantino L, Santiago H, et al (2012) Empowering Local People through Community-based Resource Monitoring : a Comparison of Brazil and Namibia.

Arnouts R, van der Zouwen M, Arts B (2012) Analysing governance modes and shifts - Governance arrangements in Dutch nature policy. For Policy Econ 16:43–50. doi: 10.1016/j.forpol.2011.04.001

Arts B (2012) Forests policy analysis and theory use: Overview and trends. For Policy Econ 16:7–13. doi: 10.1016/j.forpol.2010.12.003

Barnett AJ, Anderies JM (2014) Weak feedbacks , governance mismatches , and the robustness of social- ecological systems : an analysis of the Southwest Nova Scotia lobster fishery with comparison to Maine.

Bawa KS, Rai ND, Sodhi NS (2011) Rights, Governance, and Conservation of Biological Diversity. Conserv Biol 25:639–641. doi: 10.1111/j.1523-1739.2010.01640.x

Bergsten A, Galafassi D (2014) The problem of spatial fit in social-ecological systems : detecting mismatches between ecological connectivity and land management in an urban region.

Berkes F (2004) Rethinking Community-Based Conservation. Conserv Biol 18:621–630.

Berkes F, Kofinas GP, Chapin FS (2009) Conservation, community, and livelihoods: sustaining, renewing, and adapting cultural connections to the land. Princ Ecosyst Steward 2:129–147. doi: 10.1007/978-0-387-73033-2

Böcher M (2012) A theoretical framework for explaining the choice of instruments in environmental policy. For Policy Econ 16:14–22. doi: 10.1016/j.forpol.2011.03.012

Bottazzi P, Dao H (2013) On the road through the Bolivian Amazon: A multi-level land

governance analysis of deforestation. Land use policy 30:137–146. doi: 10.1016/j.landusepol.2012.03.010
Brukas V, Sallnäs O (2012) Forest management plan as a policy instrument: Carrot, stick or sermon? Land use policy 29:605–613. doi: 10.1016/j.landusepol.2011.10.003
Buchy M, Maconachie R (2014) Exclusionary spaces: Power, Poverty and community-based natural resource management in West Africa. In: Sowman M, Wybberg R (eds) Governance for Justice and Environmental Sustainability: Lessons Across Natural Resource Sectors in Sub-Saharan Africa. Routledge, New York, pp 94–109
Büscher B, Dressler W (2007) Linking Neoprotectionism and Environmental Governance : On the Rapidly Increasing Tensions between Actors in the Environment-Development Nexus. Conserv Soc 5:586–611.
Butchart SHM, Walpole M, Collen B, et al (2010) Global biodiversity: indicators of recent declines. Science (80-) 328:1164–8. doi: 10.1126/science.1187512
Cleaver F (2002) Reinventing Institutions : Bricolage and the Social Embeddedness of Natural Resource management. Eur J Dev Reinventing Institutions 14:11–30.
Cleaver F, Franks T, Maganga F, Hall K (2013) Beyond negotiation?: Real governance, hybrid institutions and pastoralism in the Usangu Plains, Tanzania.
Cook NJ, Wright GD, Andersson KP (2017) Local Politics of Forest Governance: Why NGO Support Can Reduce Local Government Responsiveness. World Dev 92:203–214. doi: 10.1016/j.worlddev.2016.12.005
De Herdt T, Abega S (2007) The political complexity of pro-poor policy processes in the Mandara Mountains, Cameroon. J Hum Dev 8:303–24.
Dietz T, Ostrom E, Stern PC (2003) The struggle to govern the commons. Science (80-) 302:1907–12. doi: 10.1126/science.1091015
Dinnie E, Fischer A, Huband S (2015) Discursive claims to knowledge: The challenge of delivering public policy objectives through new environmental governance arrangements. J Rural Stud 37:1–9. doi: 10.1016/j.jrurstud.2014.11.008
Djiegni FK, Assembe-mvondo S, Eba'a Atyi R, et al (2016) Cameroon's forest policy within the overall national land use framework: from sectorial approaches to global coherence? Int For Rev 18:1–10.
Dressler W, Büscher B, Schoon M, et al (2010) From hope to crisis and back again? A critical history of the global CBNRM narrative. Environ Conserv 37:5–15. doi: 10.1017/S0376892910000044
Duffy R (2014) Waging a war to save biodiversity : the rise of militarized conservation. Int Aff 90 90:819–834.
Fairclough N (2013) Critical discourse analysis and critical policy studies. Crit Policy Stud 7:177–197. doi: 10.1080/19460171.2013.798239
Fankhauser S, Bowen A, Calel R, et al (2013) Who will win the green race? In search of environmental competitiveness and innovation. Glob Environ Chang 23:902–913. doi: 10.1016/j.gloenvcha.2013.05.007
Flyvbjerg B (1998) Rationality and Power: Democracy in Practice. Trans. Steven Sampson,

Chicago
Giessen L, Krott M, Möllmann T (2013) Increasing representation of states by utilitarian as compared to environmental bureaucracies in international forest and forest – environmental policy negotiations. For Policy Econ 38:97–104. doi: 10.1016/j.forpol.2013.08.008
Ingram V, Ros-Tonen MAF, Dietz T (2015) A fine mess: Bricolaged forest governance in Cameroon. Int J Commons 9:41–64.
Jana SK, Lise W, Ahmed M (2014) Factors affecting participation in joint forest management in the West Bengal state of India. J For Econ 20:317–332. doi: 10.1016/j.jfe.2014.09.003
Köhl M, Lasco R, Cifuentes M, et al (2015) Forest Ecology and Management Changes in forest production , biomass and carbon : Results from the 2015 UN FAO Global Forest Resource Assessment q. For Ecol Manage 352:21–34. doi: 10.1016/j.foreco.2015.05.036
Koning J de, Cleaver F (2012) Institutional bricolage in community forestry: an agenda for future research. In: Arts B, Bommel SV, Ros-Tonen M, Verschoor G. (eds) Forest-people Interfaces: Understanding Community Forestry and Bio-cultural Diversity. Wageningen Academic Publishers, Wageningen, The Netherlands, p 292
Krott M (2012) Value and risks of the use of analytical theory in science for forest policy. For Policy Econ 16:35–42. doi: 10.1016/j.forpol.2009.12.004
Leach M, Scoones I, Stirling A (2010) Dynamic Sustainabilities: Technology, Environment, Social Justice. Earthscan, Oxon; New York
Lepper CM, Goebel SJ (2010) Community-based natural resource management, poverty alleviation and livelihood diversification: A case study from northern Botswana. Dev South Afr 27:725–739. doi: 10.1080/0376835X.2010.522834
Li C, Zheng H, Li S, et al (2015) Impacts of conservation and human development policy across stakeholders and scales. Proc Natl Acad Sci 112:201406486. doi: 10.1073/pnas.1406486112
Li TM (2007) Practices of assemblage and community forest management. Econ Soc 36:263–293. doi: 10.1080/03085140701254308
Lockwood M (2013) The political sustainability of climate policy: The case of the UK Climate Change Act. Glob Environ Chang 23:1339–1348. doi: 10.1016/j.gloenvcha.2013.07.001
Lund JF, Rutt RL (2015) The logic of professionalization in participatory forestry. Copenhagen
Macdicken KG (2015) Global Forest Resources Assessment 2015: What, why and how? For Ecol Manage 352:3–8. doi: 10.1016/j.foreco.2015.02.006
Maryudi A, Devkota RR, Schusser C, et al (2012) Back to basics: Considerations in evaluating the outcomes of community forestry. For Policy Econ 14:1–5. doi: 10.1016/j.forpol.2011.07.017
Mbatu RS (2015) Domestic and international forest regime nexus in Cameroon: An assessment of the effectiveness of REDD+ policy design strategy in the context of the climate change regime. For Policy Econ 52:46–56. doi: 10.1016/j.forpol.2014.12.012
McCarthy DDP, Whitelaw GS, Anderson S, et al (2012) Collaborative geomatics and the Mushkegowuk Cree First Nations: Fostering adaptive capacity for community-based

sub-arctic natural resource management. Geoforum 43:305–314. doi: 10.1016/j.geoforum.2011.07.015
McShane TO, Hirsch PD, Trung TC, et al (2011) Hard choices: Making trade-offs between biodiversity conservation and human well-being. Biol Conserv 144:966–972. doi: 10.1016/j.biocon.2010.04.038
Mislimshoeva B, Herbst P, Koellner T (2016) Current pathways towards good forest governance for ecosystem services in the former Soviet republic Tajikistan. For Policy Econ 63:11–19. doi: 10.1016/j.forpol.2015.12.002
Nkemnyi MF (2016) An Analysis of Local Participation in Community Forestry : The Case of Tinto and Bimbia-Bonadikombo Community Forest, Cameroon. Sustain Environ 1:85–97.
Nkemnyi MF, De Herdt T, Chuyong GB, Vanwing T (2016) Reconstituting the role of Indigenous institutions in forest management in Cameroon. For Policy Econ 67:45–51. doi: 10.1016/j.forpol.2016.03.012
Nkemnyi MF, De Herdt T, Semakula HM, Nkenglefac FD (2014) Boosting Knowledge Through Awareness Raising: An Underexploited Opportunity for Community Forestry in South West Cameroon. Environ Nat Resour Res 4:39–50. doi: 10.5539/enrr.v4n3p
Ostrom E, Cox M (2010) Moving Beyong panaceas: a multi-tiered diagnostic approach for social-ecological analysis. Environ Conserv 37:451–463.
Paletto A, Balest J, Demeo I, et al (2016) Power of Forest Stakeholders in the Participatory Decision Making Process: A Case Study in Northern Italy. Acta Silv Lignaria Hungarica 12:9–22. doi: 10.1515/aslh-2016-0002
Peluso NL (2017) Whigs and hunters: the origins of the Black Act, by E.P. Thompson. J Peasant Stud 44:309–321. doi: 10.1080/03066150.2016.1264581
Persha L, Agrawal A, Chhatre A (2011) Social and ecological synergy: local rulemaking, forest livelihoods, and biodiversity conservation. Science 331:1606–8. doi: 10.1126/science.1199343
Pilgrim S, Pretty J, Adams B, et al (2009) The Intersections of Biological Diversity and Cultural Diversity: Towards Integration. Conserv Soc 7:100. doi: 10.4103/0972-4923.58642
Purnomo H, Sekar Arum G, Achdiawan R, Irawati RH (2012) Rights and Wellbeing: An Analytical Approach to Global Case Comparison of Community Forestry. J Sustain Dev 5:35–48. doi: 10.5539/jsd.v5n6p35
Rands MRW, Adams WM, Bennun L, et al (2010) Biodiversity conservation: challenges beyond 2010. Science (80-) 329:1298–303. doi: 10.1126/science.1189138
Ribot JC, Peluso NL (2003) A Theory of Access. Rural Sociol 68:153–181. doi: 10.1111/j.1549-0831.2003.tb00133.x
Schure J, Ingram V, Arts B, et al (2015) Institutions and access to woodfuel commerce in the Democratic Republic of Congo. For Policy Econ 50:53–61. doi: 10.1016/j.forpol.2014.06.010
Schusser C (2012) Who determines biodiversity? An analysis of actors' power and interests in community forestry in Namibia. For Policy Econ 36:42–51. doi:

10.1016/j.forpol.2012.06.005
Secco L, Re R Da, Pettenella DM, Gatto P (2014) Why and how to measure forest governance at local level : A set of indicators. For Policy Econ 49:57–71. doi: 10.1016/j.forpol.2013.07.006
Senganimalunje TC, Chirwa PW, Babalola FD, Graham MA (2015) Does participatory forest management program lead to efficient forest resource use and improved rural livelihoods? Experiences from Mua-Livulezi Forest Reserve , Malawi. Agrofor Syst. doi: 10.1007/s10457-015-9826-6
Sol J, Beers PJ, Wals AEJ (2013) Social learning in regional innovation networks: Trust, commitment and reframing as emergent properties of interaction. J Clean Prod 49:35–43. doi: 10.1016/j.jclepro.2012.07.041
Stirling A (2006) Analysis, participation and power: justification and closure in participatory multi-criteria analysis. Land use policy 23:95–107. doi: 10.1016/j.landusepol.2004.08.010
Stirling a. (2007) “Opening Up” and “Closing Down”: Power, Participation, and Pluralism in the Social Appraisal of Technology. Sci Technol Human Values 33:262–294. doi: 10.1177/0162243907311265
Virtanen P (2005) Community-based natural resource management in Mozambique: a critical review of the concept’s applicability at local level. Sustain Dev 13:1–12. doi: 10.1002/sd.240
Yufanyi Movuh MC, Schusser C (2012) Power, the Hidden Factor in Development Cooperation. An Example of Community Forestry in Cameroon. Open J For 2:240–251. doi: 10.4236/ojf.2012.24030

CHAPTER 6

CONCLUSION AND POLICY IMPLICATIONS

1. INTRODUCTION

The aim of this research was to explore the environment-development nexus, with a particular interest in wildlife and forest management in Cameroon using a case study approach. The study began by questioning prospects for the inclusive participation of local community members in forest management in the THWS. The main theoretical arguments which supported the study placed emphasis on the argument that in order to support sustainable forest management decisions, it is important to understand the differences in values and preferences between actors (Büscher and Dressler 2007); and that the likelihood of local people to sustain forest resource management for livelihood security and conservation needs is centred on how well programmes are embedded in sociocultural relations, politics, and resource needs and uses (Dressler et al. 2010; Wodschow et al. 2016). The concept of community-based natural resource management (CBNRM) was deployed in this study to make explicit the dimension of strategy and policy challenges in achieving the desired outcomes in environment-development linkages. The analysis of conservation and development linkages as outlined in this study took into consideration actors' resource needs and usage, actors' roles in defining access to forest resources, institutional responses to changes in forest governance and the potential of actors to influence forest practices and governance. In order to explore the issue of environment-development linkages, some elements of other theories and concepts were also applied in the study in order to support the main concept (CBNRM). This included the concept of sustainable livelihood approach, the theory of institutional bricolage, the theory of access and the theory of assemblage (Scoones 1998; Cleaver 2001; Cleaver 2002; Ribot and Peluso 2003; Li 2007). Each of the concepts guided the research design and the research question as outlined in the empirical chapters (II-V). Research questions which supported the collection of empirical data were also informed by the arguments derived from the main theoretical concepts applied in each chapter. The use of different theoretical concepts offered the opportunity for a holistic approach in evaluating environment-development linkages in the case study. In addition, a mixed method approach was also adopted for the study. The adoption of the mixed method approach also opened up opportunities for a broader understanding of environment-development challenges in the THWS.

To examine the objectives and the research questions with respect to concrete settings, this study focused on analysing the relationships between local actors engaged in forest and wildlife conservation in the Tofala Hill Wildlife Sanctuary (THWS), Cameroon. In order to deliver a more or less complete analysis of the case, the study also drew on

perspectives from environmental conservation and development challenge debates, from both national and international case studies.

2 REFLECTIONS ON THE USE OF THEORIES AND CONCEPTS IN THE STUDY

This study applied a number of theoretical and conceptual frameworks in exploring environmental and developmental linkages in the THWS. The study focused on establishing the linkages that existed between wildlife conservation and livelihoods and how they could be shaped to contribute to sustainable forest management. The focus on the establishment of linkages between wildlife conservation and livelihoods motivated the choices of the theories and concepts that were selected for this study to inform secondary and primary data collection. The main theoretical concept for the study was the concept of community-based natural resource management (CBNRM). Given the argument that CBNRM has as its vision to improve the livelihood of local people by empowering them to manage natural resources for their own wellbeing (Sanginga et al. 2010), this concept was found to contribute greatly to the research framework of this study. It proved to give relevant guidance in answering the main research question for this study - 'what are the prospects for inclusive participation of local community members in forest management in the THWS?' The concept of CBNRM adheres to three key principles:

- Local people living near protected areas should be allowed to participate in land-use policy and management decisions,
- Local people should be given proprietorship or ownership over natural resources and
- Local people should benefit economically from nature conservation.

Although this concept and its principles underline the need to engage local people in forest management and to accord them ownership rights, it fails to critically capture the diversity of forest benefits through the lens of local people. The central focus and argumentation of CBNRM is on the economic benefits of natural resources. However, this study revealed that the non-economic value of the forest is as important to local people as the economic benefits. The cultural values the local people placed on the forest were revealed as one of main reasons they were unwilling to trade their forest activity for wildlife conservation. The forest was valued by the local people as a home for their ancestors and as a holy ground for offering sacrifices relevant for the wellbeing of the local communities. Furthermore, the conservation of the Cross River gorilla as the flagship species for the THWS depicts more cultural benefits for the local people compared with economic benefits. The Cross River gorilla is considered a totem in some of the local communities and this was argued to be one of the main reasons some local people did not hunt them (Etiendem et al. 2007; Etiendem et al. 2011). The study of Etiendem (2007 and 2011) also revealed that in other local communities in the study area, hunters of gorillas were considered heroes and were given entitlements for hunting a gorilla. The gorilla was also considered very important in the local community because of its medicinal value. Gorilla bones were used for treating certain illnesses and performing rituals.

The concept of CBNRM also provided an entry point for assessing and selecting other specific conceptual and theoretical frameworks that contributed to critical reflections on the challenges of achieving its key principles. The concept of sustainable livelihood approach (Chambers and Conway 1991) was applied to this study to explore the viability of the livelihoods of the local people vis-a-vis forest resources management. The sustainable livelihood approach was considered appropriate for this study because of its recognition that for a livelihood to be sustainable, it should be able to cope with and recover from stresses and shocks and still maintain its capabilities and assets, without compromising the natural resource base. The analytical focus of the sustainable livelihood approach contributed by guiding the questioning and collection of data were relevant in answering livelihood questions. It contributed to adding value to the concept of CBNRM by acknowledging that livelihoods evaluation should go beyond monetary resources to also consider assets and the ability to reproduce them. In the case of THWS, this asset is a collective good, however, it cannot be "owned" individually. The second key principle of CBNRM that local people should be given ownership of an asset seems to ignore the deeply collective character of natural resources like forests, or assume that merely being local would be enough to overcome the tragedy of the commons. This is a very heroic assumption.

To be sure, participation is by itself of course a positive thing. Another theoretical framework considered for this study was the theory of access. Access regulation plays a key role in stakeholder ability to benefit from forest resources. Thus, the theory of access raises key issues that should be considered when evaluating the role of access in sustainable forest management. The analysis of access prompts the argument that although the participation of local people is important in resource management, in practice, differences in need and equally in power make it difficult to attain effective participatory management. This brings about unequal benefit sharing. This also questions the first of the key principles of CBNRM: The unequal nature of participation in practice means that we should not confuse the formal possibility to participate and the effective ability to participate. Concomitantly, this also could significantly complicates the idea that a transfer of management rights to the local people would improve the governance of natural resources.

In this study the theory of institutional bricolage was applied to illustrate that the aspect of sustainability in forest management goes beyond ownership to also consider the behaviours, roles and norms of actors in ensuring sustainable usage (Cleaver 2002). This is because forest management is mediated by institutions. Thus, more critical reflections were added to the concept of CBNRM by exploring how institutional relationships were affected in the process of forest management in the THWS. Furthermore, the theory of assemblage was used to explore how the participation of local people in forest policy and management decisions was influenced by practices and perceptions, and how this eventually affected sustainable forest management.

The application of different conceptual and theoretical frameworks in analysing environment development linkages in the THWS presented both challenges and benefits for this study. It enabled a wider perspective on how the linkages between wildlife conservation

and local livelihoods affected the achievement of sustainable forest management. While the concept of sustainable livelihood approach enabled a deeper understanding of the livelihoods of the local people and how they were linked to the forest, the theory of access and institutional bricolage added value in terms of how the struggle to meet livelihood needs affected actors' interests, authority and power relations. In the same way, the theory of assemblage advanced the latter discussion by evaluating possible ways through which interests, authority and power relations could be aligned in the struggle to achieve sustainable forest management.

In addition, the application of these different theories and concepts offered the study the opportunity to apply different data collection techniques given that each concept/theory was unique and required an independent approach in answering the questions raised by its theoretical debates. The application of mixed research methods, for example, contributed with the collection of in-depth empirical data, which provided more or less sufficient answers to the questions raised in the theoretical debates. Furthermore, the application of different theoretical/conceptual frameworks added value to the critical analysis presented in the study, given that the application of the frameworks was contradictory in some cases and required critical reflections and technical reframing of the scenarios to rationally explain conflicting arguments. For instance, the arguments in the theory of assemblage encouraged the closing down of individual claims about who and what to govern and encouraged a focus on the overall goal of sustainable forest management. The argument in the concept of sustainable livelihood emphasised that in order to attain sustainable forest management, individuals' livelihood needs should be carefully considered and integrated into the forest management agenda. These two arguments might seem contradictory if analysed independently. However, when integrated into the analytical framework of CBNRM they act as the building blocks necessary for providing answers to the complexity of forest management.

Moreover, given the limited breadth of the study's objectives, scope and duration, it was not possible to fully apply/evaluate all the elements/variables in each concept. For instance, the full application/evaluation of the concept of livelihood requires a detailed assessment of assets and income in both monetary and non-money values across all livelihood activities of the studied population. It also requires the evaluation of household income and assets over a longer period of time given the inconsistency of income and assets in most rural settings. However, given the time period and resources allocated for this study, this detailed evaluation was not possible. This study focused mainly on forest related livelihood activities. This limits the application of the outputs from this study to the case evaluated. However, the data collected were sufficient enough to enable a critical reflection of the scenario in the field and equally relevant in informing policy interventions for this case. Nevertheless, the fact that this study only applied relevant elements of the theories/concepts limits a wider reflection on the theoretical arguments. For instance, the theory of access only superficially applied the mechanisms of access in the data analysis and this might fall short in providing detailed critical reflections on some of the elements of the

theory. Similarly, in the application of the theory of assemblage, only two main elements of assemblage (forging alignment, rendering technicality) were found to be most useful in this study.

3. METHODOLOGICAL REFLECTIONS

This research shows that a combination of qualitative and quantitative data was useful in evaluating how linkages between wildlife conservation and livelihoods contributed to sustainable forest management options in the THWS. The quantitative method employed constructed and analysed data regarding the livelihood situation of local people living adjacent to the THWS and how they were linked to forest activities. On the other hand, qualitative interview methods provided a greater understanding of forest usage, and perceptions on forest governance dynamics and sustainable forest management challenges. In addition, the use of field observation was extremely helpful as it enabled the researcher to be able to relate the results obtained through questionnaires and interviews into practical realities in the field. Field observation also offered opportunities for the researcher to acquaint himself with the lifestyle of the local people and due to this he was able to collect valuable information that supported questionnaires and field interviews through direct observations. Furthermore, systematic literature reviews were also very beneficial for this study. For instance, the systematic review of policy texts and documents from the internet, as presented in chapter V of this study, revealed rich data and information, which was not captured through field surveys.

In a nutshell, the use of mixed research methods (collecting and analysing both quantitative and qualitative data) was revealed to be one of the main strengths which led to the rich data gathered for this study. Data collected through questionnaires were mainly quantitative and in most cases missed out the deeper reasoning behind the field scenarios. Information which could not be captured by questionnaires was revealed to be captured in in-depth interviews. In the same way, field observations provided opportunities for the researcher to validate some of the information obtained through questionnaires and interviews. For instance, the claim by the local people that they had started converting forest into farmland could be validated through field observations. Field observations also enabled the collection and validation of information on anthropogenic activities as revealed by the questionnaires and interviews. Furthermore, systematic reviews offered another dimension of critical reflection of actors and their roles in forest management in the THWS. The opinions and potential impact of some actors such as donors, which could not be captured through field data, was captured through the systematic reviews of internet reports and documents.

4. CONCEPTUAL REFLECTIONS

This study builds on several concepts whose central arguments are that how to achieve environmental and social justice is a matter of intense debate and no single approach to sustainable forest management has been put forward to be the best (Rodela et al. 2012). Based on the conceptual framings, this study argues that a more reasonable approach to natural resource management (NRM) should adopt a holistic analytical view of sustainable forest management while duly considering their merits and demerits. Contextually, this study argues that a blend of knowledge on forest resources use, institutional interactions in forest management, access mechanisms to forest resources and the analysis of who governs forest resources could benefit sustainable forest management. Based on the latter argument a conceptual framework that could contribute to sustainable management of forest resources in the THWS is proposed below (Figure 6.1). The conceptual framework is also supported by the arguments that in Cameroon, agricultural value added generates 23% of gross domestic product and employs 62% of the population (Ball 2016). About 84.1% of the local people in the studied area rely mainly on agriculture for livelihood (Nkemnyi et al., 2016b). This study therefore argues that a framework for conservation-development linkages should build on how agricultural land use could be integrated into conservation planning. The suggestion that conservation incentives should prioritise agricultural activities in the tropics is also supported by the argument that the concept of 'alternative livelihoods' is generalised and has proven to be ineffective in addressing conservation challenges (Wright et al. 2016). Moreover, local people have been revealed to be reluctant in engaging in conservation incentives livelihoods that are not related to agricultural activities (Nkemnyi et al., 2016b). The above arguments suggest that conservation-development linkages could be more sustainable in the 'rural tropics' if equal attention is given to both agriculture development and conservation interventions. Figure 6.1 also revealed that for conservation and agriculture interventions to contribute to sustainable forest management, social justice is imperative.

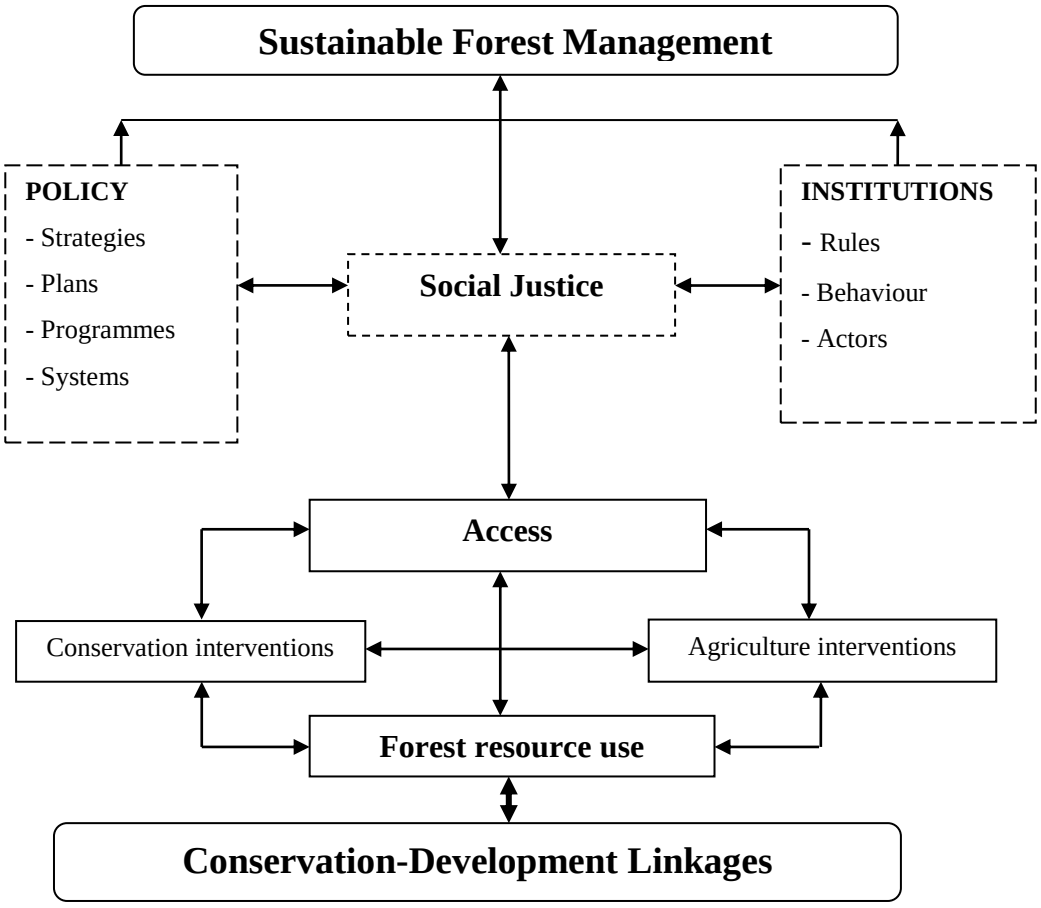

Figure 6.1: Conservation-development linkages framework for supporting sustainable forest management in Cameroon.

In summary, the framework argues that for conservation-development linkages to translate into sustainable forest management in the THWS, negotiations must be guided by the concept of social justice (human rights and equity). Participatory management to incentivise sustainable forest management requires equity in power-relations amongst actors given that actors are the mediators in institutions and policy. Sustainable forest management could be achieved if institutions and policies cooperate to ensure that rules, behaviour, actors, strategies, plans, programmes and the system of administration uphold social justice within all processes. This means enabling a system of distribution that ensures fair negotiations in terms of revenue and non-revenue sharing arrangements and compensation schemes. Notwithstanding, the latter argument does not rule out the fact that unequal distribution of power exists among stakeholders and leads to unequal participation (Peluso 2017), rather it indicates that there is a need to explore the barriers leading to unequal participation.

5. IMPLICATIONS OF FINDINGS AND RECOMMENDATIONS

This study acknowledges that although mixed research methods (combination of primary and secondary data) were adopted to assess the different variables analysed in the study, the duration for which the study was conducted is relatively short in terms of supporting solid management solutions for long term sustainable forest management in the THWS. There is a need to continuously evaluate and monitor the challenges raised in the study area over a longer period in order to continuously advise on sustainable forest management strategies. However, the results and recommendations presented by this study contribute to information and data that could go a long way to facilitate negotiation of sustainable forest management in the THWS. The implications and recommendations of this study are important for researchers, forest managers, policy makers, donor agencies and local institutions responsible for promoting the agenda of CBNRM in Cameroon. The key implications and recommendations for this study can be summarised into four sub-headings.

5.1. BUILDING SUSTAINABILITY AND COMPATIBILITY IN LOCAL LIVELIHOODS IN THE TOFALA HILL WILDLIFE SANCTUARY

One of the main challenges running through the empirical findings in this study is the conflict of interests between livelihoods and wildlife conservation. The local community members place a lot of importance on livelihood activities that were linked to the forest. On the other hand, the livelihood value of the local people was revealed to be threatened by the wildlife conservation agenda. The resulting conflicts were revealed to have evolved from incompatibility in terms of values and knowledge between the local people and the conservation institutions. For instance, the wildlife institutions perceived the livelihoods derived from the forest by the local people as having possible substitutes. This explained the reason they implemented the alternative livelihoods support strategy as a means to reduce human pressure on the forest. On the contrary, the study revealed that the local people perceived their forest linked activities as not having a substitute. This mismatch in perceptions was revealed to have triggered major conflicts in forest management. One of the main rationales behind the local people converting forest to farmland was revealed to be the belief that wildlife conservation might deprive them of their usual way of living (hunting and farming in the forest).

Based on the above argument this study suggests that an improvement in agricultural practices and value might go a long way to assure the local people that wildlife conservation would have little or no effect on their agricultural outputs. This could be pursued by empowering local people with the knowledge and skills to improve fallowing and crop rotation as a means of enhancing soil fertility given that poor soil fertility was one of the main reasons why farmers preferred to farm in the forest. Improved fallowing can be achieved by the use of leguminous trees (agroforestry) and the use of organic fertiliser. However, this also comes with a high financial cost, which should be taken into account in

the planning phase. Notwithstanding, this could be cost effective if the local people are fully engaged in the planning and development process, given that most local people are often ready to invest in initiatives that fully mobilise their participation. On the other hand, the combination of bio monitoring data and land use planning data could also guide the bush fallow farming approach, whereby the local people are guided to farm on areas with less wildlife activities and later on, while allowing the area to regenerate (fallow) they may relocate to another area of low wildlife activity. In addition, the concept of REDD+ (Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries) could be further explored alongside bush fallow to give the local people more hope on the potential of sustainable forest management in contributing to their livelihood. However, it is very important to consider the complexity of the implementation of the REDD+ project when evaluating its potential for contributing to sustainable forest management in the THWS.

Moreover, the fact that the forest plays a key role in contributing to household income through hunting also needs to be tackled with caution. Hunting was revealed in this study to be more a lifestyle of the local people despite the fact that it also contributed substantially to household income. This implies that complete restriction of hunting without adequate alternatives might lead to an increase in wildlife crimes or shift in livelihood pressure. One way to address hunting challenges could be the registration of hunters and the legalisation of the bushmeat market. This could come with incentives for registered hunters and bonuses for hunting communities which are capable of developing effective mechanisms for restricting intruding hunters and for selective and rational hunting. In addition, the encouragement of animal husbandry and the development of marketing opportunities for this produce in the local community as subsidies to bushmeat could also go a long way to gradually turn the attention of local people from hunting, given that animal farming is almost absent from the local community.

5. 2. IMPROVING LOCAL PARTICIPATION IN FOREST MANAGEMENT PLANNING IN THE TOFALA HILL WILDLIFE SANCTUARY

The results of the study revealed that one of the major setbacks in sustainable forest management was the poor participation level of the local people in conservation planning. The process of creating the protected forest revealed that the needs and opinions of people living in adjacent areas were not adequately considered. The results also revealed that most of the local people decided to support the conservation initiative at the beginning of the project because of the direct benefits they thought would come as a result of their support. This view was clearly captured in the narration of members of the forest management committee, which was created by the wildlife conservation organisation. This goes to show that the agreement of forest management committee members to participate in wildlife conservation was motivated by their expected gain and was not voluntary. This study

suggests that although it is important to motivate local people to support conservation initiatives, it is also important to ensure the sustainability of the foreseen benefits. Incentives can mean different things to different people so it is important to capture this variability in sustainability actions. Sustainable outcomes in conservation projects are often long term and quick fix solutions are likely to fade after a short while. One of the possible ways of motivating the local people to engage with the conservation project is by adequately paying attention to their livelihoods needs and by developing a livelihood implementation plan which does not privilege the conservation agenda over the local livelihood agenda. This scenario is clearly captured in the case of the Fossimondi community in the study area where the local people stopped the wildlife conservation organisation from carrying out further conservation activities in their community unless they were willing to commit to supporting the development needs of the local people.

The case of the transition in management power from the customary institution to the bureaucratic institution also revealed the weakness of the participatory forest management process in the THWS. Local community members were revealed to mount strategies to resist wildlife conservation because they felt that their opinions were not duly considered in the process. Although inclusive participation might be challenging, time consuming and at times expensive, it is imperative in situations where resources might not be available to ensure effective control over restricted forest management, like in the case of the THWS. One way to ensure inclusive management in a scenario of limited resources is argued to be the fair distribution of management authority among various key actors. In addition, deploying strategies that ensure downward accountability could also promote inclusive participation (Ribot 2003; Shoreman-Ouimet and Kopnina 2015).

5.3. IMPROVING ACCOUNTABILITY IN FOREST MANAGEMENT IN THE TOFALA HILL WILDLIFE SANCTUARY

This study revealed that international donor institutions exerted a greater influence on conservation priorities in the THWS compared to the state institutions. This was because international donors were responsible for financing wildlife conservation activities in the study area. Thus, the local NGO responsible for implementing the project was revealed to be more conscious of meeting the reporting requirements and standards of the international donors. The results of the study also revealed that the state played a negligible role in contributing to accountability in forest management in the THWS. Although the state approved and legalised the forest area as a protected area, it did not put in place adequate measures to ensure that the implementation of the policy would be effective. The study revealed that even after the legalisation of the forest area as a protected area, the financing of the development of the forest management plan was still piloted by the local NGO with anticipated funds from international donors. The inability of the state to mobilise resources necessary for policy implementation the THWS was revealed as a major challenge to

achieving accountability in resource management. Given that the development and management of forest resources requires adequate financing for successful implementation, it would be extremely challenging for the state to be able to monitor the effectiveness of forest resource management in the THWS. There was no available mechanism to evaluate the financial sustainability of the implementing institutions. This implies that the validity of the field reports could not be independently verified by the state either, given that effective monitoring and evaluation should consider the implemented activities completed alongside the allocated budget.

Based on the above results, this study recommends that it is important to explore adequate mechanisms through which the state could ensure accountability in the implementation of policy in the case of protected forest creation and management. This could improve collaboration between the different actors and therefore initiate participatory actions necessary for sustainable forest management. However, given the limited financial resources for the development of natural resources, as in the case of most developing countries, it would also be beneficial for the state to ensure that the implementing actors in projected area management are accountable publicly for activities implemented.

5.4 FINDING AND FILLING THE GAPS IN FOREST POLICY TEXTS IN CAMEROON

The forest policy text was revealed to be the main legal document enforcing forest management implementation strategies in the THWS "…*we are working in accordance with the forestry and wildlife law and when the management plan of the protected area is developed, law enforcement will be strengthened to prevent illegal activities in the forest area*…" recounted a member of wildlife conservation staff. A systematic review of the policy text revealed a number of shortcomings including the centralisation of management power to the bureaucratic institutions. Out of 12 institutions that were responsible for deliberating on the creation of the protected area, only two were non-state institutions. This falls short of the community-based forest management goal to broadly involve the local people in forest policy and management decisions, given that the interest of the local people in the process could only be represented by the community leaders (chiefs) or the local non-profit organisation. Given the diversity of preferences in forest use and need, it is probable that the limitation of local people's participation to community leaders might not necessarily represent the broader interest of the community. In addition, although the policy text acknowledged that local people owning property within the gazetted area should be compensated, no provision was made on which procedure needed to be pursued and how, to ensure compensation. Field results also revealed that the local people who had properties in the gazetted area were not yet compensated and neither were their claims recorded. Furthermore, the results also revealed that a forest management plan was not listed as a pre-requisite for the creation of a protected forest. One of the ways of protecting/motivating the interests of all relevant stakeholders in forest management is by

documenting their roles, involvement and benefits in the management process. The lack of an established management plan in the THWS was revealed to have brought uncertainty into forest management and thus, weakened the decision making process. In line with the above results, this study recommends that there is a need to revisit the current forest policy text and update it to address some of the key issues raised and discussed in this study. This includes the provision of policy addressing the broader participation of the local people, and the inclusion of a forest management plan as a prerequisite prior to the creation of a protected forest, among others.

REFERENCES

Ball, A., 2016. *The Future of Agriculture in Cameroon in the Age of Agricultural Biotechnology*, Available at: http://digitalcollections.sit.edu/isp_collection/2287.

Büscher, B. & Dressler, W., 2007. Linking Neoprotectionism and Environmental Governance : On the Rapidly Increasing Tensions between Actors in the Environment-Development Nexus. *Conservation and Society*, 5(4), pp.586–611.

Chambers, R. & Conway, G.R., 1991. *Sustainable rural livelihoods: practical concepts for the 21st Century*,

Cleaver, F., 2001. Institutional Bricolage, Conflict and Cooperation in Usangu, Tanzania. *IDS Bulletin*, 32(4), pp.26–35. Available at: http://doi.wiley.com/10.1111/j.1759-5436.2001.mp32004004.x.

Cleaver, F., 2002. Reinventing Institutions : Bricolage and the Social Embeddedness of Natural Resource management. *The European Journal of Development Reinventing Institutions*, 14(2), pp.11–30.

Dressler, W. et al., 2010. From hope to crisis and back again? A critical history of the global CBNRM narrative. *Environmental Conservation*, 37(1), pp.5–15. Available at: http://www.journals.cambridge.org/abstract_S0376892910000044 [Accessed March 6, 2012].

Etiendem DN, Hens L, Pereboom Z (2011) Traditional Knowledge Systems and the Conservation of Cross River Gorillas: a Case Study of Bechati, Fossimondi, Besali, Cameroon. Ecol Soc. doi: 10.5751/ES-04182-160322

Etiendem ND, Sheshe TM, Ncha ET (2007) Perceptions of wildlife in the Bechati Forest area, Lebialem, South West Province, Cameroon. UNAFAS Conserv. Values Program. 1–3.

Leach, M., Mearns, R. & Scoones, I., 1997. *ENVIRONMENTAL ENTITLEMENTS: A Framework for Understanding the Institutional Dynamics of Environmental Change*, Brighton, UK.

Leach, M., Mearns, R. & Scoones, I., 1999. Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management. *World Development*, 27(2), pp.225–247. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0305750X98001417.

Li, T.M., 2007. Practices of assemblage and community forest management. *Economy and Society*, 36(2), pp.263–293. Available at: http://www.informaworld.com/10.1080/03085140701254308.

Lund, J.F. & Rutt, R.L., 2015. *The logic of professionalization in participatory forestry*, Copenhagen.

McGinnis, M.D., 2011. An Introduction to IAD and the Language of the Ostrom Workshop: A Simple Guide to a Complex Framework. *Policy Studies Journal*, 39(1), pp.169–183. Available at: http://doi.wiley.com/10.1111/j.1541-0072.2010.00401.x.

Nkemnyi, M.F. et al., 2016. The influence of institutions on access to forest resources in Cameroon: The case of Tofala Hill Wildlife Sanctuary. *Journal for Nature Conservation*, 34, pp.42–50. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1617138116300772.

Peluso NL (2017) Whigs and hunters: the origins of the Black Act, by E.P. Thompson. J Peasant Stud 44:309–321. doi: 10.1080/03066150.2016.1264581

Ribot, J.C., 2003. Democratic decentralisation of natural resources: institutional choice and discretionary power transfers in Sub-Saharan Africa. *Public Administration and Development*, 23(1), pp.53–65. Available at: http://doi.wiley.com/10.1002/pad.259 [Accessed March 1, 2012].

Ribot, J.C. & Peluso, N.L., 2003. A Theory of Access. *Rural Sociology*, 68(2), pp.153–181. Available at: http://doi.wiley.com/10.1111/j.1549-0831.2003.tb00133.x.

Rodela, R., Cundill, G. & Wals, A.E.J., 2012. An analysis of the methodological underpinnings of social learning research in natural resource management. *Ecological Economics*, 77, pp.16–26. Available at: http://linkinghub.elsevier.com/retrieve/pii/S0921800912000961 [Accessed July 23, 2012].

Sanginga, P.C., Ochola, W.O. & Bekalo, I., 2010. Natural Resource Management and Development Nexus in Africa. In W. O. Ochola, P. C. Sanginga, & I. Bekalo, eds. *Managing Natural Resources for Development in Africa: A Resource Book*. Nairobi, Kenya: International Institute of Rural Reconstruction (IIRR), p. 571.

Schusser, C. et al., 2015. Powerful stakeholders as drivers of community forestry - Results of an international study. *Forest Policy and Economics*, 58, pp.92–101. Available at: http://dx.doi.org/10.1016/j.forpol.2015.05.011.

Scoones, I., 1998. *Sustainable rural livelihoods: a framework for analysis*,

Shoreman-Ouimet, E. & Kopnina, H., 2015. Reconciling ecological and social justice to promote biodiversity conservation. *Biological Conservation*, 184, pp.320–326. Available at: http://dx.doi.org/10.1016/j.biocon.2015.01.030.

Trumbore, S., Brando, P. & Hartmann, H., 2015. Forest health and global change. *Science*, 6250, pp.814–818.

Verburg, P.H. et al., 2013. Land System Science: Between global challenges and local realities. *Current Opinion in Environmental Sustainability*, 5, pp.433–437. Available at: http://dx.doi.org/10.1016/j.cosust.2013.08.001.

Wodschow, A., Nathan, I. & Cerutti, P., 2016. Participation, public policy-making, and legitimacy in the EU Voluntary Partnership Agreement process: The Cameroon case. *Forest Policy and Economics*, 63(2016), pp.1–10. Available at: http://linkinghub.elsevier.com/retrieve/pii/S1389934115300745.

Wright, J.H. et al., 2016. Reframing the concept of alternative livelihoods. *Conservation Biology*, 30(1), pp.7–13.

ANNEX I: FIELD SURVEY GUIDE

CONSERVATION AND LIVELIHOOD CHALLENGES IN THE THWS

SECTION A: HOUSEHOLD COMPOSITION AND LIVELIHOOD

1. Demographic information

Date:	Household/QST ID #:	Village:	Start time/ End time	GPS location
Gender	Age range	Main occupation	Education level	

For member of household contributing to HH income							
ID	Relation to HH head	Age	Sex	Ethnicity	Level of education	Main occupation	HH size
1							
2							
4							
5							
6							

Household composition

2) Livelihood Activities

List all livelihood activities conducted by male of this HH			**List all livelihood activities conducted by female of this HH**		
Farm based activities	Forest related activities	Business/ Waged labor	Farm based activities	Forest related activities	Business/ Waged labor

3) Which 3 main activities are most important to meet the income needs of the HH during the year?

1) 2) 3)

4) How have the type and number of activities conducted by members of your household changed? What do you do more of now?

5) What would happen to your HH if your main livelihood activity failed to produce an income, how would you cope? What would your HH do more of?

6) Has the food eaten by your HH over the past one year been sufficient? A) Managing B) Coping C) About sufficient D) More than enough

7) Has the meat eaten by your HH for the past 1 year been sufficient? A) Managing B) Coping C) About sufficient D) More than enough

8) What kind of meat is eaten by your HH and where do you get it?

9) Can you get help from anyone in the village when you are in need? A) Yes B) No C) Sometimes

9b) What do you do if you need money in an emergency?

10) How well off is your HH compared to the last 5years? A) Worse B) Same C) Better off now

11) How did you first acquire land for your farm? A) Inherited B) Cleared virgin forest C) Bought it D) Cleared secondary bush

12) How can you acquire more land if you want to extend your farm?

13) Do you get income from other sources? A) NO B) YES.

14) When did you last receive money and how much?

SECTION B: LIVELIHOOD SUPPORT ASSESSMENT

1) Which livelihood support project exists in your community from the wildlife conservation project?

2) Which other livelihood support exists other than the one provided by wildlife conservation?

3) Have you ever benefited from any livelihood support? Yes___ No___
   From who?

4) Did it make any difference to you and your household? Yes_____ No____
   Explain:

5) Was it successfully implemented?

6) What were the challenges?

7) What would you prefer as livelihood support from the wildlife conservation project if you were to have the choice?

8) How convinced are you that this choice would a make a difference? Explain.

9) What would be your advice to the wildlife conservation project manager if they had to provide livelihood support to your community?

10) Do you think the wildlife conservation project will succeed? Explain your observations.

SECTION C: IDENTIFYING AND MAPPING BENEFITS AND INTERESTS IN FOREST RESOURCES

1) How often do you use the forest?
2) Do you own a piece of land in the forest?
3) How did you acquire it?
4) What would you be concerned about losing in the forest? A) Farmland b)Hunting c)NTFPs, d) Medicinal Plants, E)Timber, f)Woodland
5) Are there any rules linked to your forest activities? Who set these rules?
6) Have you had any disagreements with anyone over the piece of land in the forest? With who?
7) How did you resolve the conflict?
8) Does your village as a whole have conflicts over land/forest issues? With who?
9) How was/is the conflict managed? Did/does it resolve the problem?
10) Were you satisfied in the way the problem was solved?
11) What are the things you do to prevent other people from taking your land or farm in the forest?
12) Are your forest activities being controlled and inspected? A) Yes B) No
13) How effective is the supervision?
14) Do you think everybody using the forest has equal access to forest resources? A) Yes B) No
15) Explain (an imposition from the government, authorities, neighboring villages, village authorities etc)
16) Who are the people who are favoured in forest resources usage?
17) Who supports them with these powers?

SECTION D: INDIGENOUS KNOWLEDGE ON FOREST MANAGEMENT

1) How was your forest managed before the arrival of the wildlife conservation? Explain in detail the administration and structure of the administration

2) Has there been a change in management since the arrival of the wildlife conservation? Explain in detail what changes have occurred

3) How has the change in management structure affected your community as a whole?

4) How has the change in management affected you and your livelihood?

5) Which of the management structures would you say is better? Before or after wildlife conservation? Why?

6) Were community members involved in decision making leading to the change of the forest management structure? How?

7) Why is the forest important to your village as a whole?

8) How has the new management structure considered the interests of the community members?

9) What are the traditional values of your forest?

10) How do you think these traditional values can help in the management of the forest?

11) What are the traditional activities that you think can be supported by conservation in your community?

12) Do you think supporting these activities will make local people happy and help them to conserve wildlife?

13) What are the things you think can be done to improve forest management in your community?

SECTION E: THE FUTURE OF THE THWS MANAGEMENT

a) **What institutions are involved in forest management?**

1) Who makes decisions on the forest management?

i. Government
ii. NGO
iii. Funders
iv. Chief or Local community head
v. All of the above

2) Are you involved in any decision making process related to the management of the THWS?

i) Yes
ii) NO

3) How are you involved in or how do you participate in making decisions for the management of the THWs?

4) What are the various institutions collaborating with the government in the management of this area?

5) How is the partnership structured? (How do the authorities relate with each other?)

6) What are the responsibilities of these partner institutions?

7) Who makes the laws governing use of THWS?

i. The government
ii. NGO
iii. Chief
iv. All of the above

8) What forest management strategies are being used?

9) Is there a management plan for the THWS?

i. Yes
ii. No

10) If No, how is the forest being managed?

11) In your opinion, how can you rate the respect of the management plan?

i. 25%,
ii. 50%,
iii. 75%,
iv. >75%

12) Are the local communities informed about the formal rules regarding ownership, access and use of forest land?

i. Yes
ii. No

13) How are they informed

i. Through media
ii. Through posters
iii. Community announcements
iv. others

14) How are the forest activities reported?
i. Monthly Reports
ii. Annual publications
iii. Media announcements

15) To whom are the forest activities reported?
i. The government
ii. The local community
iii. The general Public

b) What are the specific areas of conflict in the management of the THWS?

16) Are there any disagreements in the management of the THWS?
i. Yes
ii. No

17) Which are/were the parties involved in the disagreement?

18) What are/is the reason for the disagreements?

19) How are/were the disagreements being resolved?

20) How does the community benefit from the THWS?

21) Does the law recognize traditional and indigenous rights to forest resources?
i. Yes
ii. No

22) Are you allowed to carry out your traditional rights in the THWS?
i. Yes
ii. No

23) How competent are the staff working in the area?

24) What is the average educational level of the staff of the THWS?
i. Primary
ii. Secondary
iii. Tertiary

25) Are there any Capacity Building activities going on to ensure sustainability?
i. Yes
ii. No

26) Is there any provision for training of the indigenous population and staff on conservation practices?
i. Yes
ii. No

27) Have you received any form of training on conservation or that can help you function better?
i. Yes

ii. No

28) How has your livelihood improved because of the presence of the THWS in your community?