

Assessing community involvement in the design,  
implementation and monitoring of REDD+  
projects: a case study of Mount Cameroon  
National Park - Cameroon

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## **Abstract**

The success of Reduced Emission from Deforestation and land Degradation, forest conservation, sustainable forest management and enhancement of carbon stocks (REDD+), depends on effective participation of local communities because ultimately they are the ones to implement REDD+ on the ground and are the potential benefactors of such policy. But few studies have examined community involvement in the design, implementation and monitoring of REDD+ projects. This study critically examines the level of community's engagement in the Mount Cameroon National Park (MCNP) conservation project. Cluster multi-stage random sampling was used to collect data from 259 respondents from four geographical clusters with cultural and livelihood differences. Quantitative data were analysed using Chi-square, Mann-Whitney test, t-test, ANOVA and linear-regression models to understand the contribution of predictors on independent variables, while Kruskal-Wallis and Jonckheere-Terpstra tests compare results and establish trends between different clusters respectively. Qualitative data were coded and thematically analysed to show different perceptions between different levels of stakeholders. Results show that insecure tenure, ineffective and inappropriate communication between park managers and communities, inadequate benefit-sharing mechanism, and top-down government strategies have impeded community's engagement in the REDD+ projects within all clusters. Communities perceive REDD+ as having the potential to conserve forest, generate income and improve livelihoods. However, the present level of local engagement in the MCNP conservation project makes the attainment of these goals difficult. REDD+ should be based on effective participatory bottom-up approaches that empower and allow more decision-making powers to communities to achieve effectiveness and potential co-benefit expectations of REDD+. Assessing community's engagement as the project progresses should be embedded within strategies to ensure sustainability in REDD+. This study provides practical insights into the effective co-management of MCNP-REDD+ projects and recommends adaptable management strategies that favour appropriate social-safeguard standards for sustainability of any REDD+ projects.

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## **Author's declaration**

This doctoral thesis consists of ten independent chapters which are referred to in this text from Chapter 1 to chapter 10. There are overlaps in methodology sections which are presented in section 1.6 and referred to where relevant.

I hereby declare that, this thesis submitted for a Doctor of Philosophy Degree in Environment at the University of York, UK is my original research work. All sources cited or quoted are indicated and acknowledged in reference sections. My supervisor Rob Marchant contributed to the review of this thesis. I played a major role in designing and conducting fieldwork for data collection, analysis, interpretation and writing. This work has not previously been presented for an award at this, or any other, University.

# 1 Introduction

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Reduced emission from deforestation and land degradation, forest conservation, sustainable management of forest resources and enhancement of forest carbon stocks (REDD+), is a United Nation Framework Convention on Climate Change (UNFCCC) mechanism, aimed at financially supporting developing countries to reduce greenhouse gas emission by taking action to mitigate climate change. This is helping in transforming tropical forest conservation to a critical tool in fighting climate change, conserving natural resources and has the potential to improve the livelihood of local communities. The Inter-governmental Panel on Climate Change (IPCC) Fifth Assessment Report now estimates a 10% annual global carbon emission from deforestation (IPCC, 2013) which is lesser than its former 17.4% estimate (IPCC, 2007). However, a third of total emission in developing country is blamed on land use, land use change and forestry (LULUCF) (WRI, 2005). Thus, global awareness in the importance of tropical forest in addressing climate change has been raised by REDD+. The key role of tropical forest in securing livelihood and wellbeing of local communities, and critical understanding of the role played by tropical forest in providing ecosystem services has further been stressed through REDD+.

Rewards from REDD+ can be either national or result-based, where incentives would be in proportion to actual carbon emission reduction after carbon accounting. Performance is measured against a reference level which is a representation of the estimated emission that would have occurred if there was no REDD+ intervention and this also takes into account the national forest estate to deal with internal leakages. According to Skutsch & McCall (2012), UNFCCC favoured a national-level instead of project approach because REDD+ requires national policies and legislations that are far beyond the forest sector, as drivers of deforestation are rooted outside the forest sector. Payment for REDD+ activity may be through a market structure (carbon-credit) or through global funds or other financial instrument, but most observers see the use of market instrument as most efficient and effective because the Conference of Parties (COP) failed to agree on binding emission target for developed countries. Based on Payment for Ecosystem Services (PES), a national organised integrated community forest management strategy is

crucial for REDD+ programme, but how and to whom payment would be made to, has not yet been specified (Skutsch & McCall, 2012). Effective capacity building of local communities and knowledge and skills to engage in sustainable forestry is essential for REDD+ to succeed. This cannot be achieved without effectiveness and equity in customary resource rights, so tenure needs to be the starting point to REDD+. Westholm et al. (2011) also state that “*the importance of resolving tenure ambiguity and assuring community participation in REDD+ has now been recognised*”. Communities need to fully participate in REDD+ project implementation to reduce the risk of government and conservation NGO grabbing land and carrying out forest protection approach that marginalise forest dwellers. There is a growing consensus that if REDD+ is properly designed, it should generate social co-benefits, government benefits and environmental co-benefits. Local communities are keys to forest management and improving tenure security is crucial for carbon sequestration potential of forest. Some REDD+ projects restrict access of forest dwellers to projects areas which are sources of carbon additionality and revenue. Thus, conditional performance based compensation is applied as incentives to local communities.

### **1.1 The importance of forest to local communities**

Forest is an economic resource and provides goods and services; human survival and wellbeing depends on forest because it provides oxygen, food, shelter, recreation, raw materials and spiritual sustenance. According to Roehr (2007), forests are host to about 70% of the world’s biodiversity and also provide essential ecosystem services such as flood control, soil protection from erosion and water resource. It also support the livelihood of about 300 million people (Von Braun, 2007), of whom most are economically poor. “*Forests yield subsistence and income for more than 60 million indigenous people who are almost wholly dependent on forests, for some 350 million people who are depending on forests to a high degree, and more than 1.6 billion people who depend on forest products to some degree, for survival necessities e.g. for fuel wood, medicinal plants and some foods*” (FAO, 2011; World Bank, 2009).

Africans depend mostly on natural resources from forest and non-forest ecosystems. With the ongoing global climate change negotiations, more value has been placed

on forest ecosystems which have proven to be relevant to mitigation and adaptation in terms of carbon stock and sequestration potentials. A typical forest plays an important role in global carbon budget acting either as a sink or as a source of carbon. The total carbon content of forest ecosystem is greater than carbon in the atmosphere and tropical forests store about 50% more carbon per unit hectare than forest outside the tropics. Busch et al. (2009) argued that, “*forest vegetation holds 20 to 50 times more carbon per unit area than the ecosystems that replace it.*” Rates of deforestation and degradation are determinable, but carbon accounting or quantifying emissions reduction resulting from these processes is another challenge, due to different capacity of sequestration and storage capacities. Deforestation and forest degradation do not only result to a loss of biodiversity; it also leads to reduction in forest carbon stocks and almost 20% increase in global CO<sub>2</sub> emissions (Thompson et al., 2013). Emissions also depend on land use systems (Houghton, 2005). The carbon dioxide (CO<sub>2</sub>) concentration in the air alters the carbon cycle and modifies climate by greenhouse effect.

According to IPCC (2007; 2013), a sustainable forest resource management strategy such as REDD+, which has as objective to mitigating climate change while simultaneously sustaining provision of food, timber or fibre, will result to a greater climate change mitigation benefits. The positive contribution to forest is based on sequestration, storage and substitution and these cannot be achieved without Sustainable Forest Management (SFM). Forest owners therefore, play a vital role in mitigating climate change because they implement SFM strategies in their everyday forest projects. Human demands for good and services from the forest is on the increase and the natural resources are depleted more than they are being replaced. Every year about 13 billion hectares of forest disappears globally, most especially in the biological rich tropical forest (FAO-FRA, 2010). Forest therefore, plays a major role in climate change discussion, because they are a source of emissions as well as a strategy for mitigation and adaptation (CIFOR, 2008).

According to Gender Climate Change (2007), the direct underlying causes of deforestation should be addressed, rather than focusing on technical and methodological issues alone. Valuing forest beyond their carbon value could take into account protection of biodiversity, safeguard forest ecological balance, and

protect the forest and the livelihoods of local communities through full engagement of all stakeholders and capacity-building amongst people living in and from the forest. This will help provide maximum benefits from natural forest resources. Van Der Ploeg (2011) goes further to state that some countries with natural resources do not benefit from it because:

- *“A resource bonanza induces appreciation of the real exchange rate, deindustrialization, and bad growth prospects, and that these adverse effects are more severe in volatile countries with bad institutions and lack of rule of law, corruption, presidential democracies, and underdeveloped financial systems;*
- *A resource boom reinforces land-grabbing and civil conflict especially if institutions are bad, induces corruption especially in non-democratic countries, and keeps in place bad policies;*
- *Resource rich developing economies seem unable to successfully convert their depleting exhaustible resources into other productive assets”.*

Thus, good governance and land tenure rights are key to benefits from natural resources.

Societal wants are insatiable and as the world`s population density increases, level of consumption and technology increase. The exploitation, benefits and services from natural resource are far more than the natural ecosystem can replenish. The forest therefore, needs to be sustainably managed in such a way that the benefits and services provided from it get a balance with its health and biodiversity. People affect natural ecosystems when they use natural resources from it and return waste product to it. Population increase has resulted to increase in human activities which are impacting global ecosystems. With present global high population of seven billion (Carl & Gribble, 2011), increasing human activities exert pressure on several sectors creating problems that impact the ecosystems (Fig. 1.1).

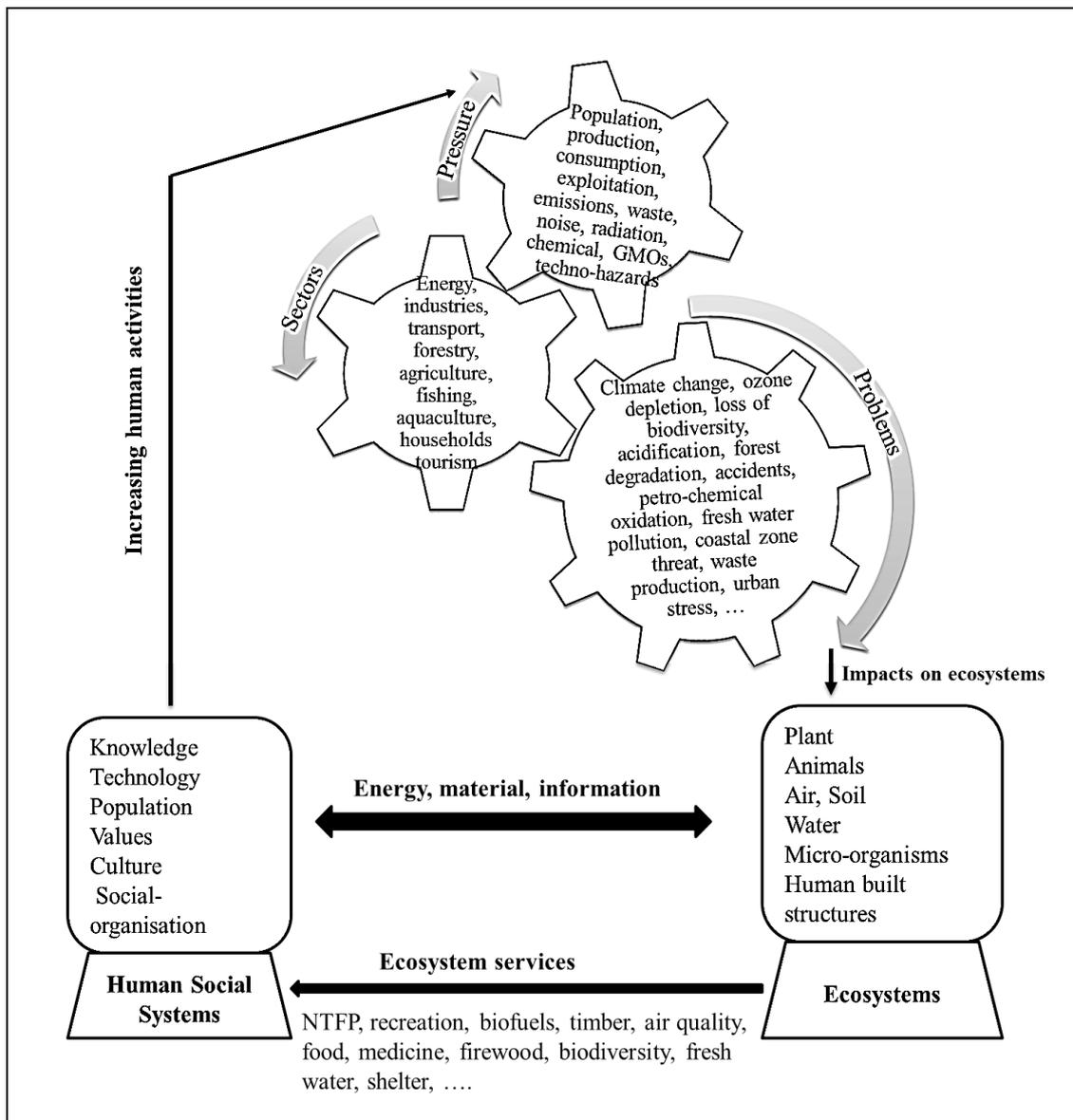


Figure 1.1: Linkages and interactions between ecosystems and human social systems.

Human survival and livelihood depend on the ecosystem. If our attitudes and actions are not changed, then the pressure on the ecosystems will continue to increase globally and the future generations will have nothing left. So there should be a change in life styles, behaviours, aspirations, expectations and reduction in the use of natural resources. We are answerable to the condition of the earth. It is our duty to protect it, restore it and sustainably manage it for continued provision of benefits and services to mankind. Therefore, there should be a balance between the socio-economical needs and the health of the environment.

## **1.2 Trends and drivers of deforestation**

Tropical forest is second to natural disaster such as volcanic eruption and El Niño in contributing to CO<sub>2</sub> emissions (IPCC, 2007), which is responsible for about 56% of climate change; but still about 13 million hectares of forest is loss every year (FAO, 2004) despite present policies. In North America and European countries, the net forest area seems to be stable due to establishment of forest plantations and regeneration while tropical forest continues to suffer from substantial net loss of forest cover and lack adequate forest institutions to mitigate deforestation (Earth trends, 2008). Nevertheless, the net remaining frontier forests are declining globally.

Africa has a large diversity of ecosystems, land cover types, and different land use practices, but since the 1970s, emissions from land use, land use change and forestry (LULUCF) have increased by 40% in Africa with an estimated loss of 440 to over 1200 Mt CO<sub>2</sub>/year (Walker et al., 2008). The drivers of deforestation make it difficult to find a global solution as many of them are found outside the forestry region. Agricultural expansion contributes to 96% of present studies around deforestation (Geist & Lambin, 2002), though population growth, increase in infrastructure and timber exploitation also contribute greatly. Other underlying drivers include state forest policies, lack of adequate governance, forest institutions and markets prizes for both agricultural and forest products due to population and economic growth. The drivers of deforestation are uncertain due to few reliable statistics of forest cover, but these are embedded in the socio-economic dynamics between the states, private sectors, local people and poor governance within the forestry sector (Mustalahti et al., 2012). According to Kissinger et al. (2012), 80% of deforestation is believed to be as a result of smallholder's slash and burn agricultural practices and fire-wood harvesting, but these are seen as secondary effect of timber exploitation which degrades forest cover leading to further decline in biodiversity.

The 1997 Kyoto protocol to combat climate change excluded emissions from forest deforestation because of fear that challenges in quantifying emissions could impede climate regime. Tropical countries also feared that reducing deforestation could weaken their rights and sovereignty over land. However, developed countries could earn carbon credits through the Clean Development Mechanism (CDM), from reforestation projects in tropical countries, but this did not encourage forestry

projects. Reforestation may be a good mitigation strategy, but keeping existing forests present a better opportunity to mitigate climate change (Baumert et al., 2005).

Reducing emission through halting deforestation preserves ecosystems and provides livelihood and environmental benefits. When making the links between poverty, deforestation and reduction in CO<sub>2</sub> emissions, it is very critical to strike a balance between mitigating climate change, providing food security and improving livelihood. According to Ngendakumana et al. (2012), conversion of land for agriculture is a survival strategy which is also a source of carbon emission as argue by Neerly & Leeuw (2012). While a strong correlation has been established between income and deforestation in developing countries (Bhattarai & Hamming, 2001), it is also presumed that increase in income may shift the economic structure and demand of energy from wood toward petroleum based fuels, thereby, reducing pressure on forest. So, there is need to improve socio-political and economic institutions, rather than only the factors itself. The economic decision to convert forest into agriculture for improvement of livelihood may be a rational one; therefore, mitigation should be linked to rural development which is aimed at simultaneously sustaining life and reducing carbon emissions. REDD+ is considered as having the potential to mitigate climate change and improve livelihood to local communities in forest ecosystems (Mustalahti et al., 2012; Hoang et al., 2013). Therefore, a holistic approach is required to tackle climate change and critical understanding of the socio-economic relation with forest cover loss will enhance the effectiveness of reduction in emission and social disconnect in Cameroon.

### **1.3 Forests, carbon and payment for ecosystem services**

In the year 2000, the United Nation Secretary-General Kofi Annan called for the Millennium Ecosystem Assessment (MEA) to assess the impacts of ecosystems changes on the livelihood and wellbeing of humans and also seek ways to improve the conservation and usage of these ecosystems, and its positive influence on human wellbeing. This assessment was carried out between 2001 and 2005 and involved about 1,360 experts (MEA, 2005). The results included the state and trends in world's ecosystems, including services provided (water, food, flood control, resource, and forest products) and ways to restore, conserve and improve the use of ecosystems in a sustainable way. The Millennium Ecosystem Assessment result

shows that ecosystems services have changed extensively and rapidly in the past 50yrs due to rapid demands for fuel, water, food, timber and fibres. These changes have resulted in the loss of biodiversity and deterioration of 60-70% of world's ecosystem services with dramatic impacts on dependent communities. The substantial net gain in economic development and human wellbeing have been achieved at the expense of degradation of ecosystem services, poverty for some minority, and risk of non-linear changes which if not addressed will diminish the benefits of ecosystem services for future generation. The Millennium Development Goals may not be achieved if the degradation of ecosystems gets significantly worse in the next 50yrs. Meeting-up with the demands of ecosystem services is challenged with reversing the rate of degradation of these ecosystems and it is possible with changes in current policies, practices, institutions and implementing options to conserve and improve certain ecosystem services which offers positive synergies alongside other ecosystem services. *“The productivity of ecosystems depends on policy choices on investment, trade, subsidy, taxation, and regulation, among others”* (MEA, 2005). If we cease to perceive ecosystem services as being ‘free and limitless’, while local communities are given the right to own natural resources, share and benefit from it and involved in all decisions made around them; then we can better protect our natural resources through coordinated involvement of government, NGOs, local communities, businesses, sub-national, national and international institutions. The increase in human activity is depleting the ecosystem services in such a way that the earth's ecosystems may not be able to support future generations, and appropriate behaviours and actions are needed to mitigate degradation of vital ecosystem services with substantial changes in policy and practice that still need to be established, of which full participation of local communities is one of them.

As stated in the MEA (2005), ecosystem services are the benefits (provisional, regulating, supporting and cultural services) people derive from the ecosystems, while Wayne (2009) defines it as *“the product of ecological functions or processes that are directly or indirectly contribute to human well-being, or have the potential to do so in the future”*. While well-being denotes the state of happiness, good health and prosperity, quality of life represents that measurement or degree of well-being. Turner & Daily (2008) argue that the Ecosystem Service framework which

emphasises on the role of healthy ecosystems in sustainable provision for human well-being, alleviating poverty and economic development is considered to have both practical and theoretical implications and forms a holistic analytical template for decision-making (Fig. 1.2). Turner & Daily (2008) also urge for a better approach in mapping, modelling and valuing ecosystem services since there is lack of information to scale the benefits of humans from specific services, thus the need to develop and implement a more firm classification, distinguishing intermediate and final products for a more reliable and realistic valuation of services rendered by the ecosystems.

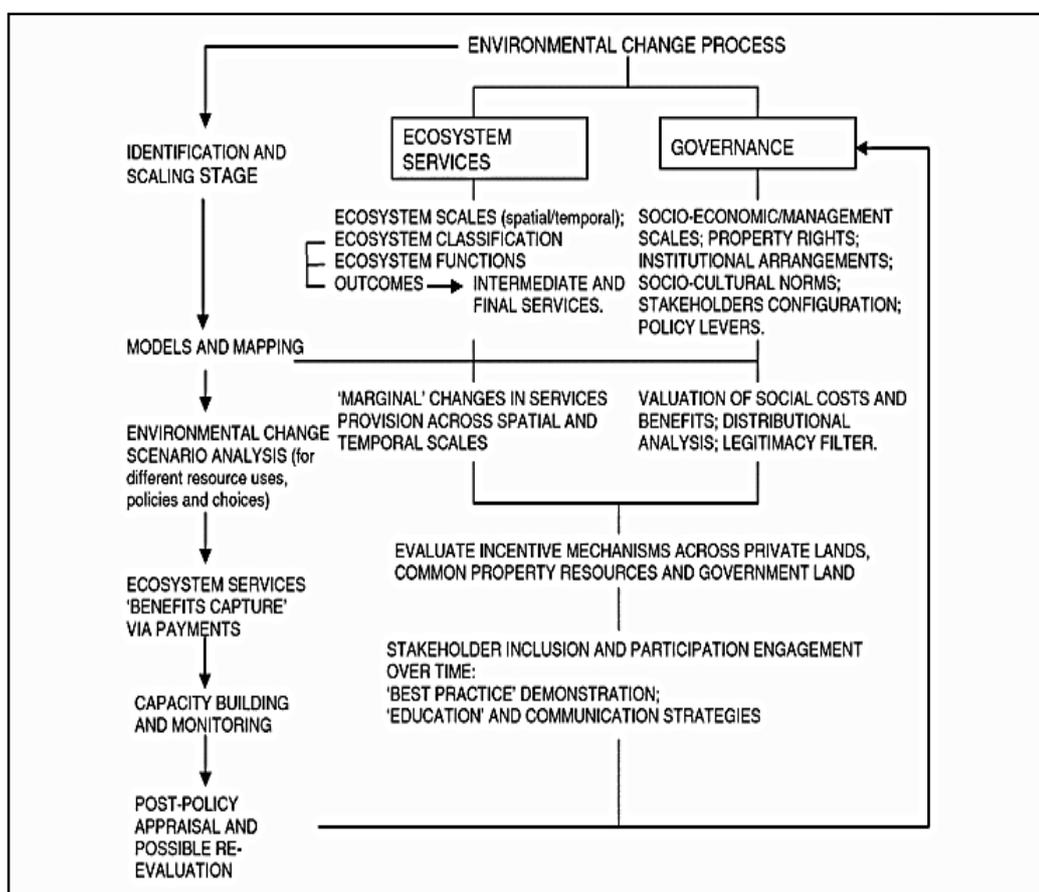


Figure 1.2: The ecosystem services framework (Turner & Daily, 2008).

Rewarding ecosystem services is a complex issue. The most worthy can be rewarded at market places. Creating incentives for sustainable ecosystem services provision should not only be from market places, they can also come from public policy where the beneficiary can be public authority securing the provision of the services in question or individuals, local communities, fishermen, hunters amongst others. Ecosystem services deserve some form of sustainable financing (economic

incentives) as payment for ecosystem services (PES) in the form of financial transfer, compensation or rewards in transfer of technology, debt relief and capacity building. Thereby, offering an effective and efficient way in promoting sustainable development. Though PES cannot be considered a ‘one-size-fits-all’ model, it is still a specific policy strategy which is geared toward sustainable development. According to Wunder (2005), “*PES is a voluntary transaction where a well-defined ecosystem service (or a land-use likely to secure that service), is being ‘bought’ by a (minimum one) ecosystem service buyer from a (minimum one) ecosystem service provider, if and only if the ecosystem service provider secures ecosystem service provision of the service (conditionality)*”. The scheme used in PES tries to formulate a value to ecosystem services, estimate the price, and establish institution and redistribution systems for sustainable land use practices. Worthy or high value ecosystem services with lower cost of provision best suit this scheme.

At the Rio de Janeiro conference (June 2012) on Sustainable Development, the issue of development, wellbeing and wealth was reconsidered and it was stressed that the values of ecosystem services be incorporated into policy and management strategies so as to balance the socio-economic and environmental needs with sustainable development. The Rio deliberation (points 39 and 40) state: *‘The Future We Want’*: “*We recognize that Planet Earth and its ecosystems are our home and that ‘Mother Earth’ is a common expression in a number of countries and regions, and we note that some countries recognize the rights of nature in the context of the promotion of sustainable development. We are convinced that in order to achieve a just balance among the economic, social and environmental needs of present and future generations, it is necessary to promote harmony with nature. We call for holistic and integrated approaches to sustainable development that will guide humanity to live in harmony with nature and lead to efforts to restore the health and integrity of the Earth’s ecosystem*” (Minang & van Noordwijk, 2013).

Ecological services are “*the storage of carbon in trees, the regulation of water supplies, provision of non-timber forest products to local people, and the ecotourism opportunities provided by rare and endemic animals and plants*” (Mwakalila et al., 2009). We are faced with a major challenge of preserving the ecosystems while developing socio-economically, and avoiding deforestation and land degradation,

thus, striking a balance between production and preservation. This can be done through forest certification schemes, sustainable forestry techniques, improving environmental forest services, innovative financial mechanisms (CDM, REDD+), and integrated land use planning amongst others. In 2009, a community PES funded by the Department For International Development (DFID) in UK was created alongside the Congo Basin Forest Fund. This was the 'first wave' in linking community-based REDD+ project with community forest management and PES on carbon storage for improving livelihood in different socio-political and economic settings. While PES is performance-based depending on a reduction of forest conversion or achievement of measurable environmental benefits, they are synonymous to REDD+. ICDPs and PES have been found to have strong linkages with REDD+ and their knowledge helps to improve REDD+ effectiveness while reducing implementation cost.

REDD+, while representing a better way to protect biodiversity, enhance local communities' livelihoods and address climate change, lack effective institutional and governance framework. REDD+ initiatives propose to compensate tropical countries for the carbon stored in their forests which render sustainable forest management a more profitable alternatives than the current economic incentives favouring deforestation. For REDD+ to generate meaningful emissions reductions, it will require huge resources to be transferred to tropical countries. How then do we pay for REDD? A potential payment mechanism to compensate emission reduction was proposed in 2005 by Papua New Guinea and Costa Rica, whereby, credits are awarded to developing countries for reducing deforestation. These credits are in turn traded in international carbon market. Developing countries consider market-based approach as a better source of funding conservation programmes and a cost-effective way of reducing emissions (Busch et al., 2009). Design and implementation of REDD+ are faced by numerous technical issues, which are problematic under the market-based REDD+ regime and which remains a challenge to climate change mitigation policy. If developing countries sell carbon offsets that does not represent actual emissions reduction, the system will fail to achieve positive outcomes. Non-market options such as development assistance, redirecting carbon tax revenue may also be considered for funding REDD+.

The central REDD+ objective is to financially reward tropical countries that reduced CO<sub>2</sub> emissions through reducing deforestation and forest degradation, by allowing REDD+ credit to be traded on international market. Hence entire nations may probably be credited rather than individual projects. According to this mechanism, countries with reduced national level below a baseline level will receive a performance-based payment (Minang & van Noordwijk, 2013). Although developing countries favour a market-based approach, the effectiveness of REDD+ will depend on the financial costs and benefits to developing countries. However, a debate on compensation mechanism, including deforestation baseline level, role of tropical countries with low rate of deforestation, and measurement, reporting and validation of emissions reductions is ongoing (Miles & Kapos, 2008).

#### **1.4 Research problem**

The REDD+ mechanism is a multi-level governance system faced with implementation challenges in developing countries which need to be understood. There is need for targeted policy actions in enhancing regulatory compatibility and institutional synergy between global, national, sub-national and local levels. In addition to conflicts between forms and functions of governance (formal, national set-ups and local community), there is lack of common understanding between them. More open-minded, effective reciprocal communication, and respect for differing perception in the implementation of REDD+ is required to overcome these gaps. REDD+ should support forest stewardship activities of local communities providing benefits like strengthening of community resource rights, empowering local institutions and improving income through benefit-sharing. But there is fear that this might restrict customary rights (land and resource), increase centralisation of forest management, restrict local participation, lack free, prior and informed consent (FPIC) and inequitable benefit-sharing. The lack of information on local perspectives, lack of FPIC, insecure tenure, inequitable benefit-sharing mechanism, bad governance and lack of communities' engagement in REDD+ programme design, implementation and monitoring at both national and sub-national levels, could inhibit effectiveness of REDD+ measures in Cameroon, and indeed across the tropics.

## **1.5 Research design**

The research design is based on an interactive framework consisting of separate research components that interact with each other to achieve the overall research objective. This framework has five components (goals, conceptual framework, research questions, methods and analysis) that form an integrated and interacting whole.

### **1.5.1 Goals - aims and objectives**

According to Corbin & Strauss (2007), *“The touchstone of your own experience may be more valuable an indicator for you of a potential successful research endeavour.”* My personal goal is to determine whether local engagement in REDD+ project enhances communities’ livelihoods. The research aims to gain insights and better comprehension on how local events, actions, perceptions and understanding are shaped by unique circumstances to influence local behaviour. This inductive and open-ended strategy helps in *“generating results and theories that are understandable and experientially credible both to the people being studied and to others”* (Bolster, 1983). This research is aimed at providing policy makers and participatory communities with vital information and analysis needed to ensure a cost-efficient and effective reduction emission with equitable impacts and co-benefits base on sustainable forest management and to shape forest policies and strategies that are geared towards protecting poor marginalised local communities through implementation of cost-efficient REDD+ strategies.

The general objective of this research is to provide a critical assessment of local communities’ involvement in the design, implementation and monitoring of the MCNP-REDD+ Project. There is need for constructing national REDD+ schemes that produce real emissions reduction through effective, efficient, and equitable methods while also providing benefits to local communities.

#### ***1.5.1.1 Specific objectives***

- To critically assess community-forest relationships and how these are influenced by MCNP-REDD+ projects;
- To evaluate how family farming system intersect with MCNP initiatives in

enhancing livelihood and food provision;

- To assess the effectiveness of national policies and institutional measures that are meant to enhance efficient, effective and equitable REDD+ schemes and prevent local marginalisation;
- To examine how effective communication is used to enhance local participation in the MCNP-REDD+ projects;
- To quantify local communities' voices during negotiation and decision-making processes for environmental legitimacy of MCNP-REDD+ projects;
- To assess the effectiveness and equity in benefit-sharing mechanism within MCNP to determine if local expectations are met; and
- To evaluate if MCNP-REDD+ projects create an opportunity to link conservation, sustainable resource management and development of local communities by identifying the functional roles carried out by members of local communities.

### **1.5.2 Conceptual framework**

Key to research design is the conceptual framework comprising concepts, key factors, assumptions, expectations, perceptions, and theories that provide the fundamentals for the research project (Robson, 2011) and the relationship among them. This helps in assessing and refining research goals, developing realistic and relevant research questions, selecting appropriate research methodology, identifying potential research gaps and justifying research findings (Maxwell, 2012). This conceptual framework has been constructed by incorporating pieces from existing theories and research relevant to the study, as well as my own speculative views to give an overall coherence of the project phenomenon. Locke et al. (1993) argue that *“In any active area of inquiry the current knowledge base is not in the library - it is in the invisible college of informal associations among research workers”*. Therefore, focusing only on literature alone may lead to ignoring or neglecting our own experience, speculative thinking and relevant pilot or exploratory research carried out.

This section provides a synthesis of the main areas of literature and cross-over themes used in developing this research project; tenure, governance, effective and appropriate communication, PES and collaborative co-management approach. Sen (1999) argues that improved livelihoods can be enhanced through opportunity (job,

revenue, infrastructure and education), security (secure tenure, food, improved livelihood and climate change adaptability) and empowerment (local empowerment to participate and influence decisions affecting land use and development). The main themes that are linked to the research problems have been identified alongside with the conceptual cross-over from these bodies of literature. This conceptual and empirical research is aimed at establishing and exploring the main elements of the conceptual space through interpretative approach by identifying discourse, framing, knowledge, realities and multiple perspectives of interactions. Identification of a conceptual space and cross-overs which align with the research questions is used to guide this research process (Fig. 1.3). Perceptions of different levels of actors (international, national, sub-national, non-governmental organisation, local groups and communities) on the main themes are discussed. Finally, collaborative co-management approach that linked conservation effort to community development and improved livelihood is examined, drawing the core concepts together to determine if REDD+ is a threat or opportunity to local communities. This conceptual framework incorporates and aligns the main concepts that have been identified within the conceptual space to approach the research.

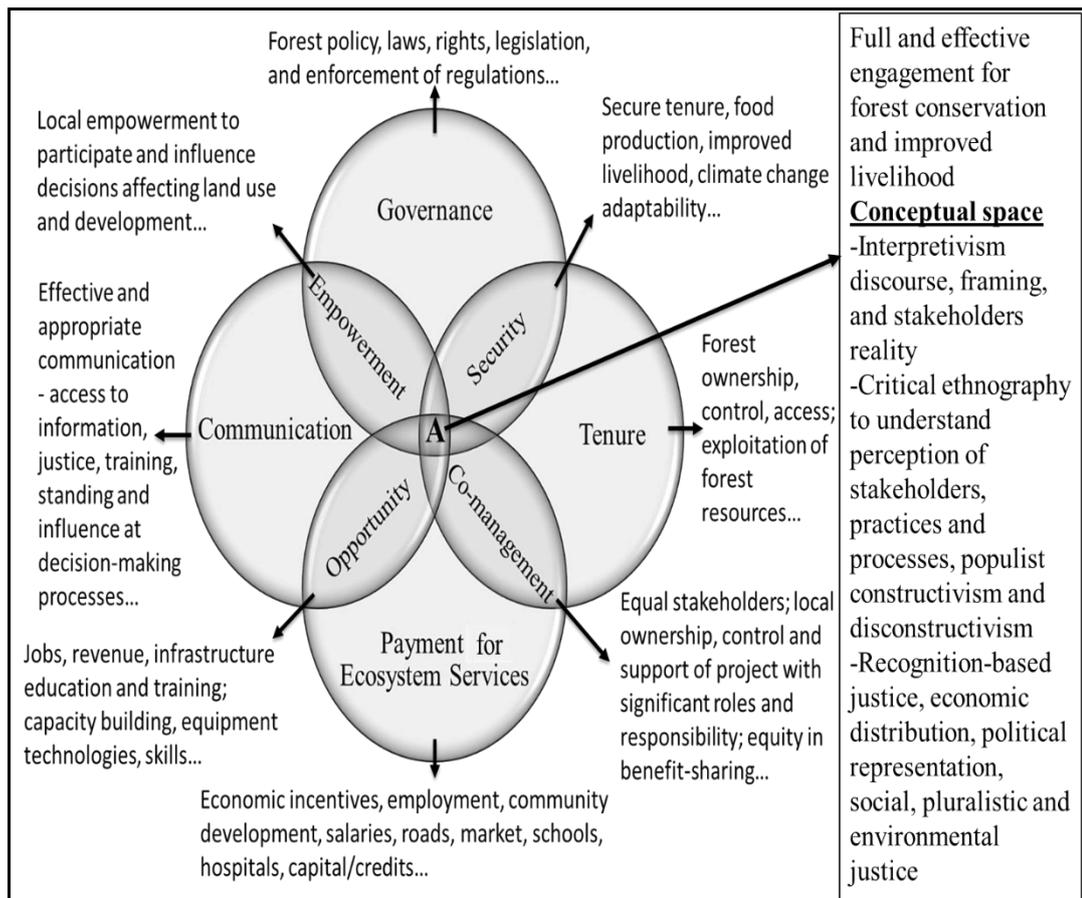


Figure 1.3: Conceptual research space and how this aligns with the research questions.

### 1.5.2.1 Research paradigm

**Interpretivism paradigm** is used for this qualitative research to understand what shapes the practices of local communities by linking the four areas of literature. Exploring and understanding how individual subjectively assign meaning to their world, depend on their life experiences, beliefs and perceptions. Jasanoff (2004) argues that, science and society are co-produced by one another and cannot be separated; therefore scientific facts, nature, viewpoints and reasoning all exist in conceptual space. According to Blom et al. (2010), community based natural resource management (CBNRM), forest certification, access to market for non-timber forest products (NTFP) and integrated conservation and development programmes (ICDP) which were once hailed in topical forest conservation did not meet-up to expectations due to application of impracticable assumptions and there is fear that REDD+ might be next. The supposed ‘win-win’ programmes were found to

be ineffective in terms of conservation and development by the agency involved and these were blamed on issues like corruption, cultural differences and inadequate engagement by local stakeholders which require other approaches to solve these emergent issues (Leach et al. 2010). Forsyth & Walker (2008) argue that, through interpretive method of enquiry, new projects which are based on same old perspectives, framing, assumptions and viewpoints may be confronted with the same limitations and concerns; therefore interpretive studies will help uncover factors like detailed discourses, perception, embedded assumptions and ways of understanding that help in tackling environmental and developmental issues and also create opportunities for alternative approaches.

Leach et al. (2010) define framing as “*the particular contextual assumptions, methods, forms of interpretation and values that different groups might bring to a problem, shaping how it is bound and understood.*” A more effective, sustainable and legitimate approach to environmental and developmental issues entails a detail understanding of ways in which individual actors frame same situations so as to better comprehend and address the complex challenges associated with environment and development (Leach et al., 2010). But the big question is; “*whose perspectives should be incorporated into decision-making?*” Escobar (1998) argues that, local framing should be prioritised, but we shouldn’t aim at a perfect scenario, rather, we should focus on a better understanding of a legitimate approach. Discourse is defined as the “*process through which social reality comes into being ... the articulation of knowledge and power*” (Escobar 1996). Discourse analysis is used to better comprehend and address complex and dynamic environmental and developmental issues. Forsyth (2003) argues that it is a core focus for exploration of ways in which knowledge and nature are produced and reproduced to reflect political struggle of resources and power. According to Thompson et al. (2011), discourse analysis has the potential to uncover framing that “*validates and legitimizes specific tools, actors, and solution while marginalizing others*”. Leach et al. (2010), go further to state that it also uncovers hidden assumptions, beliefs, power relationships and alternative perspectives. Critical realism approach as advocated by Forsyth (2001) argues that, though science contributes to understanding of complex environmental issues, it provides limited insights due to complex social issues in the way it is produced, communicated and used. This approach enhances better understanding of

stakeholders' engagement. Critical constructivism supports that post-development era should be moved from the use of traditional science to societal perception of social movement and local communities (Escobar, 1998). While the constructivism paradigm enables an inductive, grounded theory approach to understanding perspectives, the critical realism enables engagement with many stakeholders. Therefore, a pragmatic approach which includes both objective and subjective truth is essential in engaging many stakeholders groups (Leach et al., 2010) as the case of MCNP management.

**Critical development ethnography** is an in-depth exploration of systems and processes involved in environmental and developmental interventions. This research explores the populist approach which advocates for a deeper understanding of bottom-up development which depends on local perspectives and requires participatory methodology to serve the needs of those affected by initiative while achieving development and conservation objectives. According to Long & Van Der Ploeg (1989), development is a complex set of evolving processes and practices that is made-up of ongoing social and political struggles taking place between the social actors involved. Here the linear and simplistic approaches are challenged and the development system is critically deconstructed as involving processes, programmes, and systems of interventions involved. Murray Li (2007) explicitly uses the deconstructive approach to provide critical analysis of development and unpacked complexity, and also exposed factors omitted from technocratic approaches to interventions. Therefore, this study explores conservation and development through the deconstructive approach (critical development ethnography). Research on planned interventions should be focused on developing frameworks, suggestions and outcomes; interventions should be conceptualised as multiple realities that are made-up of different social interests; and cultural perspectives and actor-based perspective are needed to unpacked planned interventions (Long & Van Der Ploeg, 1989). Lewis & Mosse (2006) argue that development ethnography will uncover hidden issues, improve attention to discourse and policy processes, and identify groups, agendas and individual goals. Though actor-based approach risks inadequate consideration of other issues like political economy, power and structure.

**Recognition-based-justice** provides a lens through which we can fully unpacked conservation and development, and helps resolve conflicts between socio-ecological factors (Martin et al., 2013) through in-depth understanding of different perceptions. One of the key elements in the conceptual space is pursuit of social and environmental justice (Sen, 2011). Tenure, governance, PES and communication all seek to address social justice which need a better understanding of how society and environmental knowledge are co-produced (Forsyth, 2008). Martin et al. (2013) framed social justice as uneven distribution of goods. However, contemporary theories have challenged this viewpoint, calling for better exploration and framing that include the ‘why’ and the ‘what’ of injustice to give a coherent understanding of the underlying causes of uneven distribution of resources (Fraser, 2007). Thereby, including the concept of economic distribution, cultural recognition and political representation in the conceptualisation of injustice (Martin et al., 2013; Fraser, 2007), must be considered to achieve justice. In the case of integrated conservation and development projects like the MCNP, justice is considered in terms of participation and revenue distribution, but recognition is often ignored, so local stakeholders need to align themselves with dominant way of knowing to get involved (Martin et al., 2013). Even when recognition is discussed in project design, it often gets resisted in practice.

These approaches (interpretivism, critical development ethnography and recognition-based justice) form rich sources of perspectives on environment and development, providing a systematic and in-depth exploration of power and politics that are often hidden by the dominant ways of knowing the world, and highlights hidden alternative perspectives (Shivji, 2006). There is need for a more critical, interpretivist analysis of conservation and developmental processes because different ways of knowing produce different outcomes and approaches to conservation projects as argued by Forsyth (2003). The integrated nature of conservation and development programmes create different perspectives on the same issue, and prioritising human rights, wellbeing, and biodiversity conservation is often contested (Hirsch et al; 2011) as well as definition of forest (Forsyth & Sikor, 2013), social justice and environmental sustainability (Dobson, 2003). These concepts are used in this thesis to explore different framings and perspectives of different actors and to understand how these relate to actual engagement in programme design, implementation and

monitoring. Though, Benjaminsen & Svarstad (2010) state that conservation discourses does not often mirror conservation practices. Knowledge is co-produced between science and society through a myriad of perspectives, realities and perception that offer in-depth insight into conservation and development issues. Methodology of discourse and concepts of framing are used to explore different perspectives. The processes and practices of conservation and development are also critically analysed through deconstructive approaches to better understand the role of communities' engagement in critical development ethnography. While the recognition-based justice lens is used to bring together all the concepts involved and provide a better framing for the research towards academic and instrumental results for sustainable development.

The ontological realism assumes that a real world exist independently of our perceptions and theories; while the epistemology constructivism assumes that our knowledge of the world is inevitable of our own construction which is often not a pure objective perception of reality, so no construction can claim absolute truth (Maxwell, 2012). People's perception and beliefs are shaped by their assumptions, previous experience and on-ground reality; therefore, the theories or conclusions presented here are just simplified attempt to grasp knowledge of a complex reality.

## **1.6 Approach and methods**

The study is approached through a Human Ecological Perspective that emphasises on a holistic approach to better understand the institutional synergy between global, regional, national, sectorial, sub-national and local levels, with respect for different audiences and perceptions in the implementation of REDD+. Information were gathered from Central African Forest Commission (COMIFAC), Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED), Ministry of Forestry and Fauna (MINFOF), South West Regional office of MINFOF (MINFOF-SWR), Planet Survey, German International Cooperative (GIZ), Mount Cameroon *Prunus* Common Initiative Group (MOCAP-CIG) and 12 park villages to generate knowledge that does not only address societal problems, but also contribute to their solution as new policies and REDD+ projects develop.

### 1.6.1 Method of data collection

Based on the literature review and study objectives questionnaire, interview and focus group guidelines were designed and administered to the 12 participatory park villages while consultations and interviews were administered to proponents from COMIFAC, MINEPDED, MINFOF, MINFOF-SWR, Planet Survey, GIZ, and MOCAP-CIG to generate both quantitative and qualitative information (Fig.1.4).

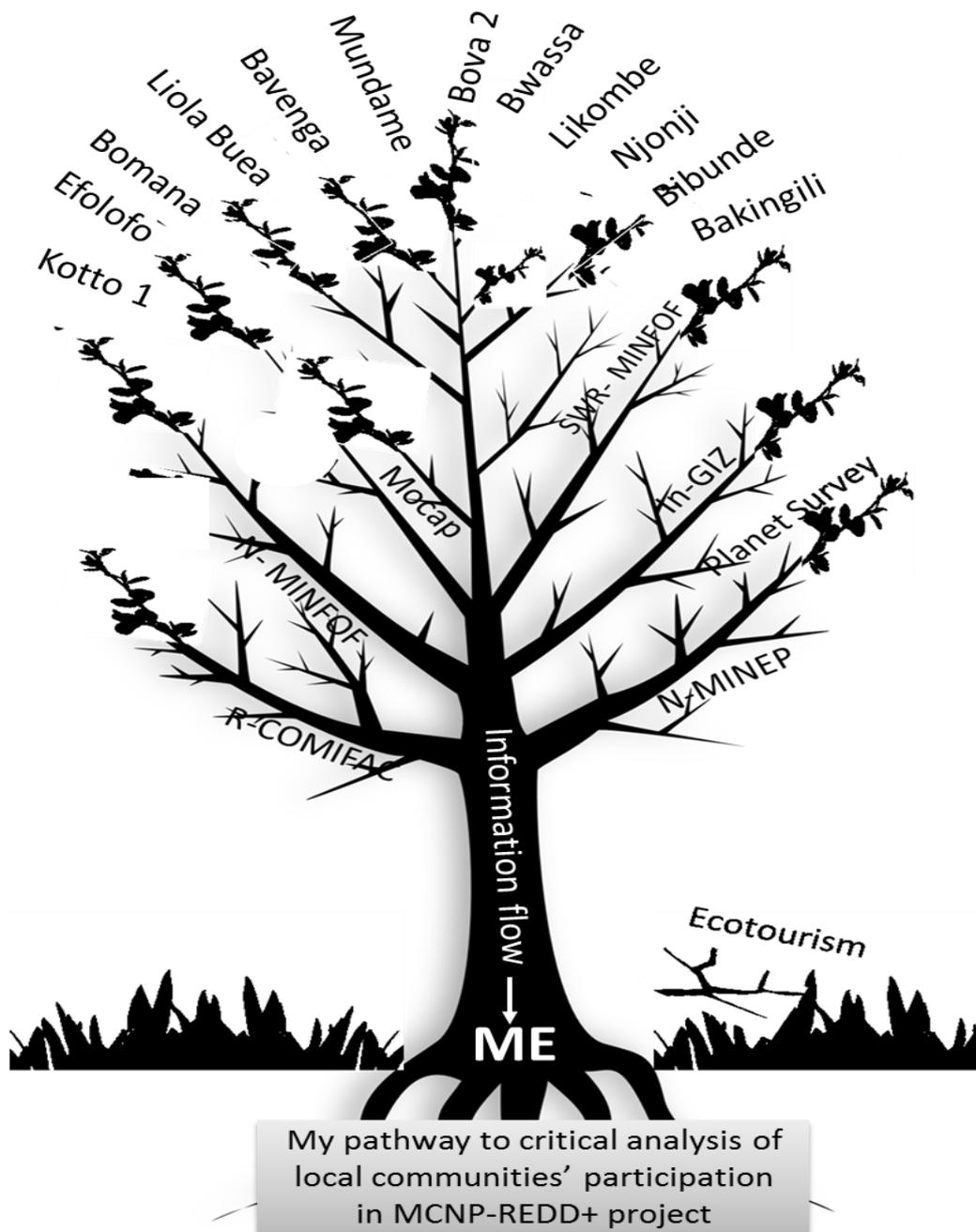
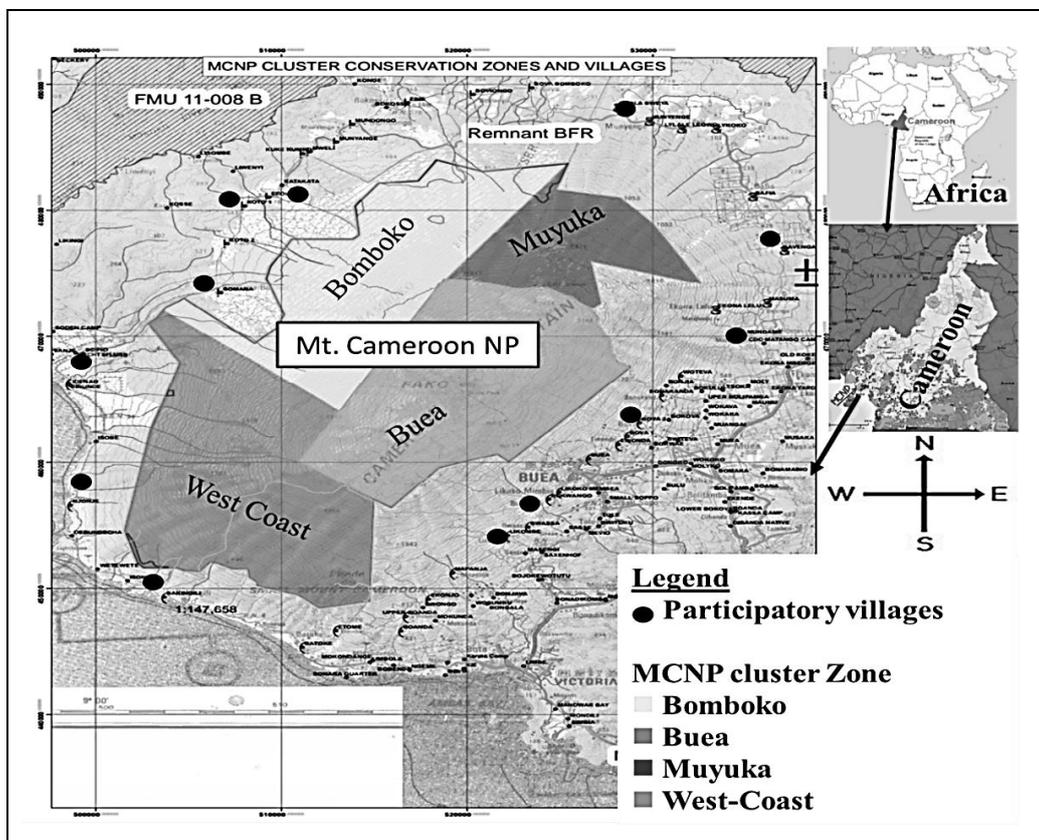


Figure 1.4 Research pathways showing all participatory villages and NGO, sub-national, national and regional stakeholders involved in data collection.

### Sampling size and techniques - cluster multi-stage random sampling.

The MCNP management involves 41 peripheral villages, who signed a Conservation Development Agreement (CDA) at cluster platform meeting. The 41 park villages are divided into four geographical clusters based on natural boundaries, culture and livelihood differences to facilitate collaborative management activities (Map 1.1; Table 1.1). A cluster platform is then established to coordinate all activities and entails a constant flow of information between the park managers and park villages, and within the villages. Cluster multi-stage random sampling was adopted because it permits subsequent sampling and one can estimate characteristics of the clusters under investigation (Daniels, 2011). Random sampling limits bias and capture random variation in population from where a more confident statement can be made about the population in question. A minimum of 240 households were surveyed with a leakage of 10% factored in (in case of default due to drop-outs). This gives a target group of 264 participants. This sample size permits intermediate and detailed levels of statistical analysis, ensures that variation in responses is captured and allows for a more robust test of the hypotheses.



Map 1.1: Map of MCNP showing the cluster conservation zone and participatory villages involved in MCNP-REDD+ project (adapted from GIZ, 2013).

*Table 1.1: The four clusters and corresponding villages co-managing MCNP with sampled villages in bold.*

Name of cluster	Park villages
1-Buea (Salaried workers)	Upper Boando, Ekonjo, Mapanja, <b>Likombe, Bwassa</b> , Bokwango, Lykoko Membia, Buea village, Ewondo, Bova 1, <b>Bova 2</b> , Bonakanda, Woteva
2-West-Coast (Fishing)	Sanje, <b>Bibunde, Njonji, Bakingili</b> , Etome, Batoke, Lower Boando,
3-Muyuka (Hunting)	<b>Mundame</b> , Ekona Lelu, <b>Liola-Buea</b> , Masuma, <b>Bavenga</b> , Bafia, Lykoko, Mile 14, Liliale, Munyenge
4-Bomboko (Timber)	Bova Bomoko, Boviongo, Ebie, Bokoso, Mondongo, Munyange, Mueli, Kukekumbu, <b>Efolofo, Kotto 1, Kotto 2, Bomana</b>

Households formed the basic sampling unit for this study. Only park villages with a population between 100 to 1000 inhabitants were included in the survey to improve population representativeness in the survey. Three park villages were randomly chosen within each cluster unit making sure they did not share a common boundary, and households within each chosen park village were randomly selected. 264 households were randomly selected for questionnaire administration making sure that at least 15% of the households, 30% of each gender and 10% from each age group in each village served as respondents to give better representation of the participatory village.

Purposeful sampling was used for focus group discussion to ensure relative homogeneity in customary representativeness and provide more confidence that conclusions adequately represent perception of village representatives in each cluster. This sampling technique was chosen based on the feasibility of data collection, goals, analysis and conceptual framework. The chief, councillors of each participatory park village and five community members chosen by the councillors, took part in the focus group discussion (Table 1.2).

### 1.6.1.1 Data collection

To validate the survey, a pilot study was conducted within 33% of the future sample villages (one park village in each cluster) five months before actual field work (March/April 2013) with 64 respondents to test its validity, get feedback on format and possible answers. The pilot study helped to capture knowledge, attitude and behaviours/practices of local communities, identify gaps and field challenges, correct inconsistency and re-structure survey instruments. Experience on administering survey was gained and the need for tangible incentives was evident. The result of the pilot study was not included in final analysis, but falls in-line with final result. Final data were collected from October to December 2013. From each village, at least 17% of households, 34% of each gender, 10% of each age-group at various educational levels and marital statuses took part in the survey (Table 1.2) and this gave a total of 259 respondents who participated in this questionnaire survey.

Table 1.2: Demographic and statistical information from questionnaire survey.

Demographic information		Bomboko (%)	Buea (%)	Muyuka (%)	West-Coast (%)	Total (%)
N (households)		66(21.3)	68(24.5)	49(52.7)	76(17.0)	259 (23)
Gender	Male	42(63.6)	41(60.3)	29(59.2)	50(65.8)	162(62.5)
	Female	24(36.4)	27(39.7)	20(40.8)	26(34.2)	97(37.5)
Educational level	No education	5(7.6)	3(4.4)	4(8.2)	0(0)	12(4.6)
	Primary school	41(62.1)	32(47.1)	26(53.1)	45(59.2)	144(55.6)
	Secondary school	16(24.2)	22(32.4)	17(34.7)	25(32.9)	80(30.9)
	High school	1(1.5)	8(11.8)	1(2.0)	4(5.3)	14(5.4)
	>High school	3(4.5)	3(4.4)	1(2.0)	2(2.6)	9(3.5)
Head of family	No	25(37.9)	28(41.2)	15 (30.6)	20 (26.3)	88(34)
	Yes	41(62.1)	40(58.8)	34(69.4)	56 (73.7)	171(66)
Age group	20 – 40yrs	39(59.1)	34(50)	21(42.9)	38 (50)	132(51.0)
	40 – 60yrs	20(29.4)	20(29.4)	22(44.9)	26 (34.2)	88(34)
	>60yrs	7(10.6)	14(20.6)	6(12.2)	12(15.8)	39(15.1)
Marital statuses	Single	18(27.3)	23(33.8)	11(22.4)	13(17.1)	65(25.1)
	Married	37(56.1)	37(54.4)	29(59.2)	60(78.9)	163(62.9)
	Divorced	5(7.6)	4(5.9)	1(2.0)	1(1.3)	11(4.2)
	Widow(er)	6(9.1)	4(5.9)	8(16.3)	2(2.6)	20(7.7)

**Questionnaire** (appendix, section 11.4): The research questions relate to the goals and conceptual framework and help guide research (methods and logic). Most of the research questions (Table 1.4.) are based on respondents' perceptions because the interest is on how respondents make sense of what is happening and how these perspectives of events influence their actions to engage in forest project. Variance questions (Is there? Does? How much?) deal with difference and correlations compared to process questions (How? Why?). The formulation of these questions follow an open-ended inductive approach to identify what villagers perceptions are and how these perceptions influence behaviours as well as how they are involved in the activities. The questionnaires were meant to provide data that contribute to answering the research questions. A contribution of Likert scale, multiple responses, ranking, filter, open-ended and close-ended questions were administered face to face to respondents to access their level of awareness, perceptions and involvement in REDD+ initiatives. Rank order questions were used to gather preference judgements and engage participants in activities. Open-ended questions were used to gather more in-depth information and variety of data (knowledge, preference, experiences). For closed-ended questions, choices of answers were randomised to reduced bias. Four field assistants from the four village clusters were trained to aid in data collection within their respective clusters, especially, in cases where the respondent understood only traditional dialect, and also to establish a more friendly and acceptable relationship between the research team with the community. Two other assistants helped with taking field photos and recording (tap and video). I personally collected approximately 94% of the data without aid, and coupled with my physical observations and psychological judgement of the respondents, my results could be 92% trustworthy. Data from different questions were categorically organised according to relevance to the chapters (Table 1.3) and quantitatively analysed to generate results under different chapters.

**Focus group discussion** (appendix, section 11.3): A focus-group discussion forum was set-up within each participatory village involving the chief, councillors and five community representatives. The discussions empowered participants to reveal self-directed debates about their views, knowledge, values and practices (Kvale & Brinkmann, 2009). The data were categorised and analysed to generate results for different chapters (Table 1.3). These results provided better understanding of

communities' perceptions and helped to validate quantitative results. The principal investigator chaired the focus-group discussions while one assistant took down notes and another recorded the discussion to facilitate analysis of unclear statements. The focus group discussion was carried out before the household survey to enhance acquaintance and acceptance of the researcher and field assistants by the community.

*Table 1.3: Questionnaires and focus-group sections categorised and analysed to generate results for different chapters*

	Questionnaires	Focus group discussion guideline
Chapter 3	Section B2(a, b) & G5	Section C1 & E
Chapter 4	Section B1, A7, A8, A9 & G5	Section B(1, 3, 4, 6, 7), E & C2
Chapter 5	Section C, B2(c), G1(f) & G5	Section F & G (10,11,12,13)
Chapter 6	Section D, A6 & G5	Section H
Chapter 7	Section E & G5	Section H
Chapter 8	Section F, D5(e), G1(b, c) & G5	Section B
Chapter 9	Section G, B(a, b, d, e), D5(f) & G5	Section D

**Interviews:** Interviews were conducted face to face with key proponents from Mount Cameroon *Prunus* Common Initiative Group (MOCAP-CIG), the German International Cooperation, the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED), Village Forest Management Committees (VFMC) and the Ministry of Forestry and Fauna (MINFOF) (Photo 1) to get an overview of the environmental situation, challenges faced in designing and implementing REDD+, and other relevant forest management strategies and relevant stakeholders involved in co-managing MCNP. These interviews were used to collect insight from the perception of different stakeholders and validate information from secondary sources like the literature review and consultations. All interviews were recorded, transcribed and analysed using NVivo.

**Consultations, field observation and socialisation:** Data were consulted from COMIFAC, MINEPDED, MINFOF-SWR, UNFCCC and MOCAP-CIG (Photo 1) to better understand successful strategies and principles for effectiveness, efficiency and equity in REDD+ programmes. During consultation, the management plan, a range of technical notes and log-frame of the MCNP were also collected and analysed.



*Photo 1: Some fieldwork photos at regional, national, sub-national levels and GIZ.*

Field observation and socialisation were carried out to attain familiarisation with members of communities and collection of data without affecting their feelings, attitudes and behaviour (Kvale & Brinkmann, 2009), by participating in local activities like fishing, farming, story-telling at the village square, singing and dancing to traditional rhythms (Photo 2). Intensive and long term observation of participants provides richer and direct data, rather than inference (Becker & Geer, 1957), eliminates misinterpretation, identification of discrepant data and explicit comparison.

### **1.6.2 Data entry and treatment**

Quantitative data were entered into a Microsoft excel spreadsheet and later imported into SPSS statistic 2.2 for analysis. Qualitative data were entered into NVivo for processing and analysis. Data collected from primary and secondary sources were

adjusted to the objectives of the study. Data entered into the computer were checked for consistency by doubly entry and cross checking.



*Photo 2: Some fieldwork photos at MOCAP, GIZ and within local communities.*

### 1.6.3 Data analysis

Here the principles of triangulation - where data are integrated from various methods and sources of information (Denzin, 1970), were used to reduce the risk of conclusion being based on systematic bias or limitations of specific methods and to gain a better assessment in validating and generalising casual explanation. Some data analysis were conducted during the survey as suggested by Coffey & Atkinson, (1996) to progressively focus the discussions, interviews, observations and test emerging conclusions. Data were analysed through a mixed-method approach which

integrates both quantitative and qualitative analysis to provide a better understanding of results (Bazeley, 2012). Statistical packages were used based on the adequacy of data collected from retrospective and prospective study. Quantitative data from focus-group discussions and questionnaires were coded, entered into excel and imported into SPSS for analysis. Descriptive statistics revealed demographic characteristics of respondents and also produced relevant frequency tables and charts. Cross tabulation and chi-square test of independence were used to establish relationship between dependent and independent variables; Mann-Whitney U test, t-test, ANOVA and linear regression models were used to understand the contribution of predictors on independent variables; and independent-samples Kruskal-Wallis test and Jonckheere-Terpstra trend test compared results between different clusters and established trends respectively. Data relationships were examined, information cross-examined, relationships investigated and frameworks established to support projects.

Categorised strategies were used for qualitative analysis (coding and thematic analysis). The coding 'fractures' the data, re-arranging it into categories to facilitate comparison of perceptions within the same theme making sure contextual relationships among different topics of data were not neglected (Maxwell & Miller, 2008). Categorisation helps develop overall understanding of different topics being discussed, generate themes, concept and organise retrieval of data to support projects. Organisational categories help in sorting data; which are useful as chapters or sections (Chapter 3 to 9); for further analysis. While substantive categories are developed inductively through coding of data (Corbin & Strauss, 2007) to produce more insight to what is going on within each chapter from where claims are made to support project.

Transcripts from interviews and field observations were analysed using thematic and issues based content analysis (QSR N-Vivo 9) and relevant information were incorporated into results from questionnaire survey. NVivo is a computer assisted qualitative data analysis software package, specially designed to analyse qualitative research which deals with multimedia and requires an in-depth level of analysis on larger volume of data. It creates a progressive dialogue between the researcher and his/her data (Sinkovics & Alfoldi, 2012), compelling them to be more explicit and reflexive (Veal, 2005) and its increased transparency, coding, cross tabulation and its

text retrieval system, creates a significant and original contribution. It was a relevant tool in this research in organising and analysing unstructured data; allowing them to be classified, sorted, and arranged, and examining data relationships. A word frequency query (top 10-15 words) produced word clouds which help to enable visualisation of words mentioned by respondents, thereby, giving a clear comprehension of topic discussed with different font sizes indicating the frequency of words mentioned. The word clouds give an overview of participants' response and help to establish themes for further discussion. These themes are further coded and types of comments or information sorted to establish clear interpretation of qualitative data (Braun & Clark, 2006), identify trends and cross-examine information with the use of query functions. In this study, negative comment refers to areas of concern while positive comment refers to opportunities, and mixed information refers to general or neutral information. Data from NVivo were later exported to an Excel spreadsheet for production of figures and tables. With NVivo, observations were made and body of evidence build up to support projects. While quantitative results showed difference in results between different clusters (Bomboko, Buea, Muyuka and West-Coast) as well as between local participants and non-participants (horizontal analysis), qualitative results cut through all levels of governance showing different perception between international, national, sub-national, local forest groups and local communities (vertical analysis) involved in MCNP-REDD+ projects.

#### **1.6.4 Thesis logical framework**

This section provides a summary of logic framework that shows the objectives, hypothesis and methods that were used in realising the research objectives. Additionally, earlier expected results and assumptions are also offered. A matrix is presented to link research questions and methods used to collect data that answers these questions and helps deal with anticipated and unanticipated validity gaps, thereby, increasing the credibility of the conclusions (Table 1.4). Validity of research is the result of integrity because we cannot separate the researcher from the research. According to Hammersley & Atkinson (1995), we cannot eliminate the actual influence of the researcher, but we need to understand and use this influence productively to answer research questions.

*Table 1.4: Logic framework showing a matrix linking research questions, hypothesis and methods used to realised research objectives*

<b>Specific objectives</b>	<b>Research questions</b>	<b>Hypothesis</b>	<b>Methods</b>	<b>Expected results</b>	<b>Assumptions</b>
To critically assess community forest relationships and how such relationships are influenced by REDD+ project.	Does MCNP- project interfere with community forest relationship?	Null: There is no significant correlation between local communities' engagement in MCNP and improved REDD+ social safeguard outcomes.	Literature review, focus group, questionnaires, interviews, consultation and physical observations.	The different land tenure-rights and overlaps will be identified.	Tenure is insecure for local communities around MCNP.
To evaluate how family farming systems intersects with MCNP in enhancing livelihood and food provision.	How does MCNP project interact with family farming to enhance food production?			Impact of MCNP on livelihood and food provision will be revealed.	MCNP project impede local food production system.
To assess effectiveness of national policies and institutional measures that ensure efficient, effective and equitable REDD+ scheme.	Do national forest policies encourage local stakeholders to engage?			National forest policies impede local engagement.	There are strong policies 'on paper' that are practically weak.
To examine how effective communication is used to enhance local participation in MCNP	What are the communication practices that empower communities to engage?			The media, frequency of information and perception will be revealed.	Inadequate forestry or REDD+ information within communities.
To assess appropriateness of communication for environmental legitimacy in MCNP	Are local voices influencing decisions within MCNP design?			Level of influence accorded to local voices will be identified	Local voices are not considered in final decision.
To examine the effectiveness and equity in benefit-sharing mechanism within MCNP.	How are forest revenue re-distributed down to communities?			Benefit-sharing mechanism will be identified.	There is unequal distribution of revenue
To evaluate if MCNP- project creates an opportunity to link conservation, sustainable resource management and development of communities.	Does REDD+ create an opportunity for development to local stakeholders?			REDD+ opportunity presented to communities will be identified	Local stakeholders benefit little from engaging in REDD+ projects.

## **1.7 Thesis structure**

The first two chapters introduce the study and show the road map of REDD+ from Kyoto to local communities in Cameroon. Each of the next seven chapters presents a unique analysis, results and discussions corresponding to the seven main research questions. There are overlaps in methodology sections which are presented in section 1.6 and referred to where relevant. A concluding chapter summarises the study, recommends strategies to address issues of concern and suggestion for further work.

Chapter 1 presents the relevance of the thesis and its contribution to research. Here the importance of forest, trends and drivers of deforestation are presented and the relationships between forest and carbon for the payment for ecosystem services are elaborated alongside with a thorough background of the research problem, aims, objectives, methodology and its significance.

Chapter 2 reveals the road map for the birth of REDD+ and how it transcends from the global level as a paradigm right down to implementation at the local communities. It briefly introduces REDD+ discussions within the African context and gives an insight of REDD+ management actors, institutions and processes within Cameroon.

Chapter 3 assesses the community forest relationships to evaluate their relevance in achieving REDD+ objectives. It examines local community's tenure systems and also assesses how they interact with MCNP-project.

Chapter 4 evaluates how family farming system intersects with MCNP initiatives in enhancing livelihood and food provision. It also examines the challenges faced by family farmers in enhancing food production, identifies ways of resolving these challenges as well as identifies factors that are influencing income for improved livelihoods.

Chapter 5 is a multi-scale analysis examining the effectiveness of institutional measures and national forest policies in Cameroon. Here, the extent to which Cameroon forest policies serve as a platform for community carbon forestry in the context of REDD+ is analysed. The capability of forest policy, land tenure, resource rights to effectively realised REDD+ objectives are examined.

Chapter 6 examines how effective communication is used to enhance community involvement in MCNP REDD+ projects design, implementation and monitoring within park villages. The alleged asymmetry between effective communication, capacity building and the effective and efficient implementation of REDD+ are explored.

Chapter 7 examines the communication structures, negotiation and decision-making processes and how these affect environmental legitimacy of MCNP-REDD+ projects. It examines if local communities are accorded standing at decision-making process to influence contentious decision.

Chapter 8 analyses the effectiveness of national policies that are meant to prevent marginalisation of local communities and enhance equitably distribution of revenue. The effectiveness of the present benefit-sharing mechanism is examined to quantify and legitimate benefits from MCNP-REDD+ initiative.

Chapter 9 uses a multi-disciplinary approach to evaluate forest management system within MCNP. It examines links between policies, conservation, sustainable resource management and level of communities' engagement in MCNP REDD+ activities. Challenges and/or opportunities faced by local communities during REDD+ activities are also assessed in the context of MCNP.

Chapter 10 provides an overview of REDD+ and presents potential solutions to some of the gaps and/or problems emerging from the preceding chapters. It presents a synthesis of the research discussions on emerging issues of concern. In conclusion it evaluates if REDD+ is a threat to local communities or an opportunity for local development. Chapter 3 to 9 have been written for publication as stand-alone articles in the following journals:

<b>Chapters</b>	<b>Proposed journals for publication</b>
Chapter 3 and 4	Forest, Tress and Livelihoods (Taylor and Francis)
Chapter 5	Environmental Science and Policies for Sustainable Development
Chapter 6 and 7	Environmental Sociology (Taylor and Francis)
Chapter 8	Environmental Science and Policy (Elsevier)
Chapter 9	The Journal of Environmental and Development (SAGE)

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## **2 From Kyoto, REDD to REDD+ with local communities involvement**

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Climate change threats have created a renewed hope to protect the values and services rendered by tropical forests. Reducing, and ultimately stopping deforestation, would be an important and vital step in limiting climate change. The exclusion of deforestation and land degradation policies during the 1997 Kyoto protocol led to the creation of the Coalition of Rainforest Nations which is headed by Costa Rica and Papua New Guinea. This coalition met in 2005 to propose a mechanism, which could create incentives to protect forests - Reducing Emissions through avoided Deforestation and forest Degradation (REDD). In 2005, during the Eleventh Conference of Parties in Montreal, their proposal gained interest, despite some major challenges in measurement and risk of leakage. The issue was forwarded to the Subsidiary Body for Scientific and Technical Advice (SBSTA) to be examined.

In 2007, the Intergovernmental Panel on Climate Change (IPCC) estimated that approximately 17% of global GHG emissions were the result of deforestation and resulting land use changes, yet forestry was excluded from the Kyoto protocol. To ensure sustainable development, there was need to reduce emissions and keep global temperature increase below 4°C by enhancing on cooperative action to combat climate change. So the findings of IPCC's Fourth Assessment Report on climate change about global warming, melting of polar ice, rise in sea levels, loss of biodiversity and famine were all used in the Bali 'Road Map' under the United Nations Framework on Climate Change Convention (UNFCCC) in December 2007. At the Bali convention in Indonesia (COP-13), a consensus was arrived on two major issues; the Reduction of Emissions from Deforestation and Land Degradation in tropical countries which is causing 20-25% increase in greenhouse emissions and Adaptation Funds based on 'polluter pays principle' as incentives set-up to support tropical countries in dealing with impacts of climate change (UNFCCC, 2008). A comprehensive approach was formulated to include policy and incentives on REDD issues and the role of sustainable development, conservation, and carbon enhancement in developing countries.

This decision 1/CP.13 provides the basis of negotiating at the *Ad Hoc* Working Group on Long-term Cooperative Action (AWG-LCA) as well as negotiation on REDD+. The first paragraph of the Bali Action Plan states: “*Decides to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long term cooperative action, now, up to and beyond 2012, in order to reach and agreed outcome and adopt a decision at its fifteenth session, by addressing , inter alia... (Fry, 2008), 1b(ii) National appropriate mitigation actions by developing country parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner; 1b(iii) Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest stocks in developing countries;*” (UNFCCC, 2008).

Decision 2/CP.13 on REDD in tropical countries’ (UNFCCC, 2008) approach to induce actions was also adopted at COP-13 in Bali. It encouraged technical assistance, technology transfer, capacity building, monitoring and reporting, exploration of action by Parties, mobilisation of resources, options identification, and application of Good Practice Guidance for Land Use, Land-Use Change and Forestry. It also requested the SBSTA to engage on methodological related issues, approaches to forest policy and meaningful REDD incentives (UNFCCC, 2008). An agreement on urgent meaningful action to REDD was also reached with the design of International REDD mechanism scheduled with deadline to be COP-15 in Copenhagen 2009.

At the SBSTA 29 held in Poznan in December 2008, methodological guidance provided in annex II on REDD+ was recommended without prejudice on future COP decision as shown in paragraph 11 - decision 2/CP.13 on methodological issues. Parties were invited to submit country-specific information, experiences and their views on local communities’ involvement in design and implementation of methodologies. The progress of this work was aimed to be reported at COP-15 using guidance from the AWG-LCA to facilitate its progress (UNFCCC, 2009). At COP-14 in Pozna, the role of conservation, sustainable management of forest resources and enhancement of carbon

stock were accorded equal status as deforestation and land degradation thereby upgrading REDD to REDD+ (Carbon Planet, 2009). The Plus incentivises countries with low emissions to keep them low and prevent mechanism that rewards only historical high emitters. It also enhances REDD's potential in achieving co-benefits like alleviating poverty, enhancing governance, conservation of biodiversity and protection of ecosystem services (Campbell, 2009).

Many countries gained much interest on REDD+ in 2009 on climate change negotiations despite some unresolved issues to be negotiated, such as the use of central fund or market-based approach, engagement of local communities, Measuring Reporting and Verification (MRV), baseline reference levels and if REDD+ should be considered on sub-national or national level (Joy, 2010). During the December 2009 UNFCCC in Copenhagen (COP-15), the Copenhagen Accord was drafted which states that (paragraph 8) *“Scaled up, new and additional, predictable and adequate funding as well as improved access shall be provided to developing countries, in accordance with the relevant provisions of the Convention, to enable and support enhanced action on mitigation, including substantial finance to reduce emissions from deforestation and forest degradation (REDD-plus), adaptation, technology development and transfer and capacity- building, for enhanced implementation of the Convention. The collective commitment by developed countries is to provide new and additional resources, including forestry and investments through international institutions, approaching USD 30 billion for the period 2010-2012...”* (UNFCCC, 2010a). It also includes reference to mobilising \$100 billion by the year 2020 from public, private, bilateral and multinational sources. Though noted, this accord was not adopted and it was unclear if the signatory countries will meet to these commitments. So there was no concrete agreement on reducing GHG emissions (words, but no real action).

Nevertheless REDD+ is continuously being drafted under AWG-LCA which helped to expand negotiation from REDD to REDD+ at COP-15. Although COP-15 did not arrive at tangible agreement with AWG-LCA, it did extended AWG-LCA mandates, and adopted decision 4/CP.15 which provided guidance on REDD+ methodology based on SBSTA's work which was adopted in Bali in 2007 (decision 2/CP.13) (Joy, 2010). The

AWG-LCA 8th report laid down principles for REDD+ initiative to contribute to UNFCCC objectives; both country driven and results-based, and promote participation of all stakeholders while supporting the enlisted ‘safeguards’ such as: effective and transparent forest governance structure; effective involvement of all stakeholders with the inclusion of local communities. SBSTA was also requested to examine land use and land use changes in forest activities in tropical countries with the necessary guidelines for REDD+ initiatives (UNFCCC, 2010a). Developing countries were to design a national strategic plan, baseline emission reference level and a monitoring system while the Copenhagen Green Climate Fund was set-up as a financial mechanism operative unit.

The Cancun agreement in 2010 (UNFCCC, 2010b) adopted a REDD+ operational mechanism in three-phases:

- *Preparation and readiness phase - development of REDD+ strategy at country level, building capacity, developing institution and demonstrating activities.*
- *Early action phase consisting of piloting and testing of strategies, improving capacity, setting reference level, portfolio development of REDD+ projects, and building infrastructure for MRV.*
- *Performance based payments - full implementation of REDD+ with quantifiable emissions reductions, certified emission reduction and equal benefit-sharing.*

In 2010, during the Oslo Climate and Forest Conference, an ‘Interim REDD+ Partnership Agreement’ to ‘fast-track’ REDD+ was formalised. Donor countries were committed to make available \$4 billion to support developing countries in their effort in developing strategies, building capacities and participating actively to fight deforestation (OsloCFC, 2010). The REDD+ partnership document is a set of robust principles to make sure they all pull together with same development, humanitarian and environmental goals with total commitment to full transparency on actions, finances and results (public database) to enable effective coordination while ensuring that finances flow where it is likely to yield the greatest benefits. This enables speeding up actions on financing for REDD+ initiatives.

The AWG-LCA met in August 2012 in Bangkok for an in-depth discussion on financing results-based REDD+ initiatives: guidelines and procedures, private sector participation and financing framework for implementing results-based REDD+ (UNFCCC, 2012). One of the crucial issues of REDD+ has been MRV and monitoring of carbon stocks. At the UNFCCC 18th Conference of Parties held in November 26, 2012 to December 7, 2012 in Doha, this point was deliberated upon (WRI, 2012). Discussions were suspended in Doha because Papua New Guinea and the Coalition of Rainforest Nations stood behind Brazil to object to an independent, international verification systems of deforestation related emission reduction as proposed by Norway - one of the international donors of REDD+. Brazil and its followers preferred to monitor their own emissions and called for the creation of a REDD+ Committee to coordinate discussion on mechanism and funding of REDD+. The issue of drivers of deforestation was also postponed to COP-19. Despite little financial progress, developing countries are not losing hope.

The European Commission organised a two days EU-REDD+ project meeting on the 3th and 4th of July 2012 to update EU funded REDD+ projects (by GIZ and Norway) and exchanged information and experiences in REDD+ implementation such as: how to measure REDD+ performance (MRV); stakeholder engagement and local communication, land tenure and planning processes; and how to finance sustainable land use in addressing deforestation and land degradation. This meeting helped in identifying challenges of REDD+ implementation, encouraging proactive projects that builds partnerships, shares information and experiences while EU delegates provide feedback to European Commission.

In June 2013, the UNFCCC inter-sessional meeting held in Bonn negotiated under SBSTA and came-out with three draft decisions on how to address the drivers of deforestation and forest degradation; national forest monitoring modalities; and frequency of presenting how social safeguards are respected and addressed (Lawrence & Denier, 2013). Private sectors were encouraged to reduce drivers of deforestation, though no concrete action was suggested and importance of tackling the root causes of deforestation was not highlighted (Davies, 2013). National forest monitoring systems

were to be guided by recent IPCC guidelines with transparent and consistent data suitable for MRV. Modalities for MRV were drafted alongside procedures for technically assessing reference levels. There was no concrete outcomes from financial discussion (market or non-market based payment). The role of agriculture was also highlighted.

At the COP-19 held in Warsaw on Nov. 2013, the ‘Warsaw Framework for REDD+’ was adopted (Climate Law & Policy, 2014). These adopted decisions with those of previous COPs act like a rulebook to guide the full implementation of REDD+. Five decisions on REDD+ technical guidance were concluded by SBSTA; modalities on national forest monitoring systems (Decision 11/CP.19), safeguards information systems (Decision 12/CP.19), reference levels (Decision 13/CP.19), MRV (Decision 14/CP.19), and drivers of deforestation and forest degradation (Decision 15/CP.19). A joint work programme was also concluded between SBSTA and SBI and Parties were encouraged to establish a ‘focal point’ to liaise between national REDD+ and UNFCCC (Decision 10/CP.19). Decision 9/CP.19 completed the results-based payment by clarifying potential financial sources (private, public, bilateral and multilateral) and establishment of UNFCCC information hub with information on results and payments.

Although the COP-20, held in Lima (2014), failed to address issues of non-carbon benefits (social, environmental and governance), non-market payments and further guidance on reporting mechanism of social safeguards; the main outcomes coming from the ‘Lima Call for Climate Action’ highlighted the need to limit global warming below 2°C, reference to ensure net zero emissions by 2050, information submission procedure for combating climate change (to be adopted at COP-21) and outlined future agreement. The Standing Committee on Finance (decision 6/CP.20) laid down general forest activities’ modalities which highlighted forest financing from different policy approaches. Parties were encouraged to use domestic policies in reducing emissions and reports it’s Intended National Determined Contributions before COP-21 to the UNFCCC secretariat. In June 2015 at Bonn, progress was made with agreement on the UNFCCC REDD+ mechanism and a comprehensive negotiation text supported by all countries was structured. REDD+ has now become a pillar of climate change mitigation

as the SBSTA contact group for methodological guidelines finally agreed on decisions concerning safeguards, non-market-based approach and methodological issues related to non-carbon benefits of REDD+.

## **2.1 REDD+ within the Africa context**

During the Addis Ababa African Union Summit in 2007, the Africa Declaration on Climate Change and Development was adopted by Environment and Climate Change African Conference of Ministers, promoting and encouraging African common position on REDD+ and this was also discussed at the Nov. 2008 climate change declaration in Algiers. In June 2008 in Johannesburg, a special session on climate change, reaffirmed to apply a detail framework of Africa climate change programmes at various levels amongst which was REDD with the inclusion of rewarding or motivating forest conservation, avoided deforestation and sustainable forestry through a market-based mechanisms (Joy, 2010). In May 2009, the African Environment Ministers adopted the Nairobi Declaration and concerns were raised on socio-economic and environmental impacts in Africa, as found in the fourth IPCC report which states “*while Africa has contributed the least to the increasing concentration of greenhouse gases in the atmosphere, it is the most vulnerable continent to the impacts of climate change and has the least capacity to adapt,*” (UNEP, 2009). With the above concern, main opportunities and challenges in climate change negotiations were highlighted while providing a platform for African countries to defend their stand at COP-15 held in Copenhagen, Dec. 2009. The aims were for African countries to have a common climate change vision at COP-15; recognise the role of tropical forests in surviving communities, enhancing economies and stabilizing climate; and to massively support African countries in addressing emission reduction issues.

According to Annex IV of the conceptual framework for African climate change programme, implementing programmes that will lead to sustainable development, alleviate poverty and also attain the Millennium Development Goals were a top priority. Adaptation and mitigation are the two major implementation areas which need to be enabled by building capacity, financial accountability and enhancing technology

because Africa is the most vulnerable with little adaptive capacity. This requires the participation of all stakeholders and partnership with civil society to improve its economic competition toward sustainable development. It was also agreed that the process of climate change discussion be based on laid-down principles of equality, different responsibilities and capacities. The need of a coherent financial architecture, equitable governance and simplified access procedures were also highlighted in the declaration. To support and enable the adaptation and mitigation of climate change, three measures were identified; technology development and transfer, capacity building and finance.

In this declaration, ministers agreed to the common position of Africa as basis of negotiation, and climate change mitigation efforts and actions to reduce deforestation and land degradation, especially those played by African tropical forest regions. The Congo Basin was agreed to be considered for incentive mechanisms in reducing emissions. Other mitigation measures like those geared towards complementing the UN Collaborative Program on REDD+ in developing countries were to ensure full and effective involvement of African countries and all stakeholders including small land users. Adaptation measures were to be integrated into the national and regional development strategies and policies to ensure adequate adaptation while the Rio convention was urged to provide optimum synergies between deforestation, loss of biodiversity, climate change and emission reduction efforts.

During the Kinshasa Central African Forest Commission (COMIFAC) conference which took place in September 2009, the countries' position on REDD+ in the negotiation of post-Kyoto climate regime based on the Bali Action Plan and a financing mechanism was harmonised, and ready for negotiation at Copenhagen. In Nairobi, November 2009, a 'Workshop on REDD+' was held to inform African position on REDD+ at Copenhagen (UNEP, 2009). It was the first capacity building workshop for negotiators and stakeholders on REDD in developing countries. It helps improved African forest sector negotiators and stakeholders understanding on international REDD+ negotiations issue based on climate change agreement; and also acts as a

platform for sharing lessons learned and experiences in REDD+ implementation in Africa and South-South cooperation (IISD, 2009).

This workshop concluded on a holistic approach that takes into account negotiations in both REDD+ and other agricultural approaches such as the Clean Development Mechanism (CDMs), National Appropriate Mitigation Actions amongst others. Forest law enforcement and governance were to be improved and co-benefits were to be captured in ways that does not create barriers to REDD+ with local communities benefiting such as poverty reduction, increase in biodiversity and ecosystem services. Methodologies, guidance and exploration of IPCC guidelines for REDD+ were to be improved and the need of funds, market mechanism and financing approaches were highlighted. While there is need to demonstrate projects on REDD+ at sub-national level, it was noted that the success of REDD+ depends on developed countries' emission targets and their willingness to pay. The involvement of communities in REDD+ design were to be considered with inclusion of traditional knowledge.

One of the benefactors was the `Indigenous Peoples of Africa Coordinating Committee, who received a budget of \$69,246 to train 12 trainers to check how the Readiness Preparation Plans (R-PPs) can impact the local communities and to determine the role of local communities in REDD+. These 12 local community activists came from Cameroon, Gabon, Uganda, Kenya, Burundi, DR Congo, Republic of Congo to South Africa (Training the trainer workshop), for a five-day study on REDD+; carbon cycle, sequestration and financing; mitigation and adaptation policy; more sustainable land tenure and protected areas practices (IISD, 2012). A REDD+ training kit was developed to improve knowledge, raise awareness and understanding of REDD+ and ways to better engage local communities in REDD+ design and implementation through a participatory approach.

Supported by the Norwegian Agency for Development Cooperation (NoRAD), the International Institute for Sustainable Development (IISD) went into partnership with ASB-ICRAF in 2009 to build capacity for REDD+ stakeholders amongst countries with UN-REDD programmes in Africa and Asia. This was aimed at increasing the

understanding of the REDD+ negotiations and strengthen capacity while encouraging South-South information exchange on REDD+. This project was undertaken in three phases from 2009-2012 as detailed by McFatridge et al. (2012). Phase I (2009-2010) was made up of four workshops on capacity-building (two both in Vietnam and Kenya), with the November 2009 (Nairobi) workshop exploring the main REDD+ concerns in COP-15 and the March 2010 (Nairobi) discussing COP-15 outcomes and the ways to move ahead on international negotiation. Phase II (2010-2011) was made up of REDD+ Development Dividend Task Force meeting; a capacity-building workshop in Douala, Hanoi and Vietnam; development of two policies papers and supporting South-South information sharing on REDD+ by the launching of a web platform. Phase III (2011-2012) seeks to develop and implement safeguards information systems as well as to foster private sectors involvement in the REDD+ value chain. The April 2012 Nairobi REDD+ meeting of experts sought to build policy capacity for negotiators and forest managers through information sharing and lessons learned. It was concluded that there was opportunity for REDD+ to build on existing architecture and the success of REDD+ would depend on private sector involvement and financial accountability. These projects helped in informing decision-making and strengthening tropical countries engagement in REDD+ principles and strategies development; improved understanding on international and national processes through exchange of lessons learned; improved knowledge to bridge gaps between international development and national design and implementation strategies; and sustained South-South interactions (McFatridge et al., 2012).

In an event carried out by the 'Alternative Slash and Burn' (ASB) partnership for Tropical Forest Margins which took place 10 November 2012 at the World Agroforestry Centre (ASB-ICRAF) and the International Institute for Sustainable Development (IISD), Tony la Niña, a REDD+ facilitator at UNFCCC COP-18, pointed out that a landscape approach has more potential to reduce ambiguity and uncertainties which threatens the implementation of REDD+. This only goes as far as to affirm emission reduction from all land uses which is being implemented by ASB-ICRAF.

## **2.2 REDD+ in Cameroon**

Since 2005, Cameroon has been involved in international REDD+ negotiations (Fig. 2.1) and is among the pioneer countries to have supported the incentive mechanism strategy in tropical forests conservation (Bali Decision 2/CP.13) (Ngendakumana et al., 2013). Its first REDD+ pilot project started in 2007 in Yaounde and Ebolowa and was established by the German company GAF-AG to estimate and monitor deforestation and degradation, estimate carbon stock and create the National Steering Committee. The government sees REDD+ activities as a viable option in providing the opportunity for her to meet its obligations of managing Cameroon's forests in a sustainable way while responding to alleviate poverty, mitigate and adapt to climate change. A national REDD+ strategy has been developed to guide and coordinate implementation of forest policies, processes and activities geared towards sustainable human development.

Cameroon belongs to the Central African Forest Commission and was engaged in preparing and communicating five Congo Basin country's submissions to the United Nation Framework Convention on Climate Change. It supports a historical reference emission level and a two phase approach with funds and markets. Cameroon is also a member of the Rainforest Coalition, an intergovernmental organisation providing diplomatic leadership to address complexity of environmental sustainability in tropical rainforests through capacity building within nations (technical capacity, research, advice, policy development, coordination and implementation). Cameroon became a member of the Forest Carbon Partnership Facility (FCPF) in July 2008 (FCPF, 2013), and is also involved in the fight against illegal logging after signing the Voluntary Partnership Agreement (VPA) in 2010 with EU FLEGT (The REDDDesk, 2014; Fig. 2.1).

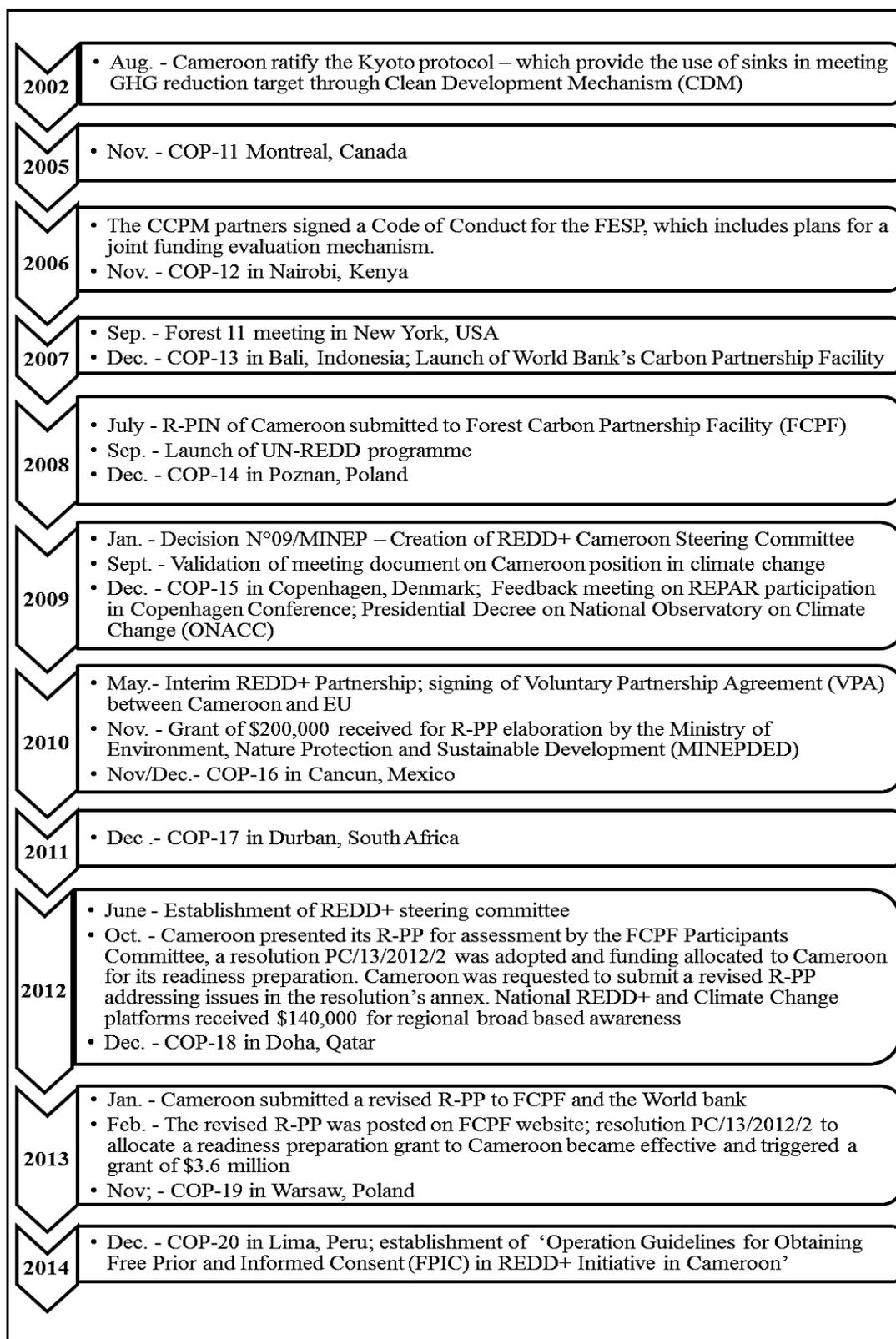


Figure 2.1: Road map of REDD+ in Cameroon

The EU Forest Law Enforcement, Governance and Trade programme (FLEGT) was initiated by EU in 2003 to enable tropical countries to improve governance and avoid illegal exploitation of timber through improved legal and sustainable forest management, governance and trade in legally harvested timber. REDD+ being an international mechanism to provide incentive to developing countries that restore forest carbon stock, can benefit from FLEGT since improving law enforcement and forest governance enhance forest degradation. VPA; a bilateral agreement between a producing or processing timber country and EU; is a strong market mechanism which enhances forest governance permitting exportation of only licensed timber underpinned by a Legality Assurance System which must be consistent with the environmental and social standards of EU states. FLEGT favours only timber imported from countries that have negotiated VPAs.

There are similarities in negotiating VPAs, enhancing forest governance and strengthening institutions to REDD+ Readiness. They all are national level voluntary initiatives taken by a country in anticipation for strengthening forest governance and economic benefits. REDD+ is developed to increase carbon stocks and mitigate climate change, while VPAs ensures the legality of imported timber; and FLEGT is implemented by VPAs between tropical countries and EU. But they all enhance sustainable management of forest resources through improved forest governance. Simultaneous implementations increase transparency, enhance participation of local communities, and law enforcement, hence a major boost in tenure reforms.

As reported by Emelyne & Maidell (2011) through the EU FAO FLEGT programme: *“the significant advancement of FLEGT in Cameroon after the country signed a VPA in 2010 has provided stronger forest governance structures on which to build REDD+ readiness efforts. In turn, REDD+ has brought a renewed momentum to carry through the legal reforms necessary for the forest sector to engage in new initiatives, such as REDD+ and FLEGT”*. The report of their findings from the Central Africa sub-region states show that VPA’s and REDD+ implementations are based on stakeholders engagement, tenure clarification, sensitisation, review of legal framework, capacity building and involvement of private sector which are all part of forest policies. So

sharing of information and lessons learned; and identification of common activities is vital in building synergies on FLEGT and REDD+ through a participatory approach, though one of the main challenges remain lack of information sharing across processes and actors. Therefore, national forest policies and laws should be revised to integrate VPA and REDD+ for sustainability of both initiatives.

### **2.2.1 REDD+ management and consultation process in Cameroon**

In Cameroon the main stakeholders involved in REDD+ activities are the Ministry of Environment and Nature Protection - MINEP (in charge of climate change issues) and the Ministry of Forestry and Fauna - MINFOF (overseeing protected areas and forest), NGO's (IUCN, WWF, GIZ) and it is only the sub-regional level that local communities are linked-up to co-manage the project (Fig. 2.2). Cameroon's Readiness Plan Idea Note (R-PIN) was written by MINEP, Office National des Forêts Internationale and the World Wildlife Fund (WWF) with inadequate engagement of the civil society and local communities (Dkamela, 2011). Under the Central African Forest Commission are 21 REDD+ projects in Cameroon. They are working on a wide range of activities from biodiversity conservation and poverty alleviation in developing a national accounting system. The main objectives are to develop tools for REDD+ accounting, identify opportunities for efficient national incentives schemes, strengthen forest governance, legislations, land tenure rights, and facilitate exchange of information with international organisations providing both financial and technical support.

COMIFAC oversees REDD+ initiatives in the Congo Basin (Fig. 2.2). In 2007, the German Cooperation (GAF, AG) initiated the first pilot prototype project for COMIFAC in Cameroon (Yaounde & Ebolowa) to estimate and monitor deforestation and degradation, carbon stock estimation and to establish a National Steering Committee. REDD+ Steering Committee is a REDD+ decision-making panel which was created on June 13, 2012 by order No. 103/CAB/PM and is responsible for the following:

- Making policy and proposing REDD+ strategies;
- Issuing reasonable opinions related to REDD+ implementation strategies;

- Developing criteria for selecting project for validation at the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED);
- Evaluating and submitting project promoter’s ideas for approval by MINEPDED;
- Promoting REDD+ activities;
- Validating work and approving action plan of the Technical Secretariat (REDD+ process implementation body).

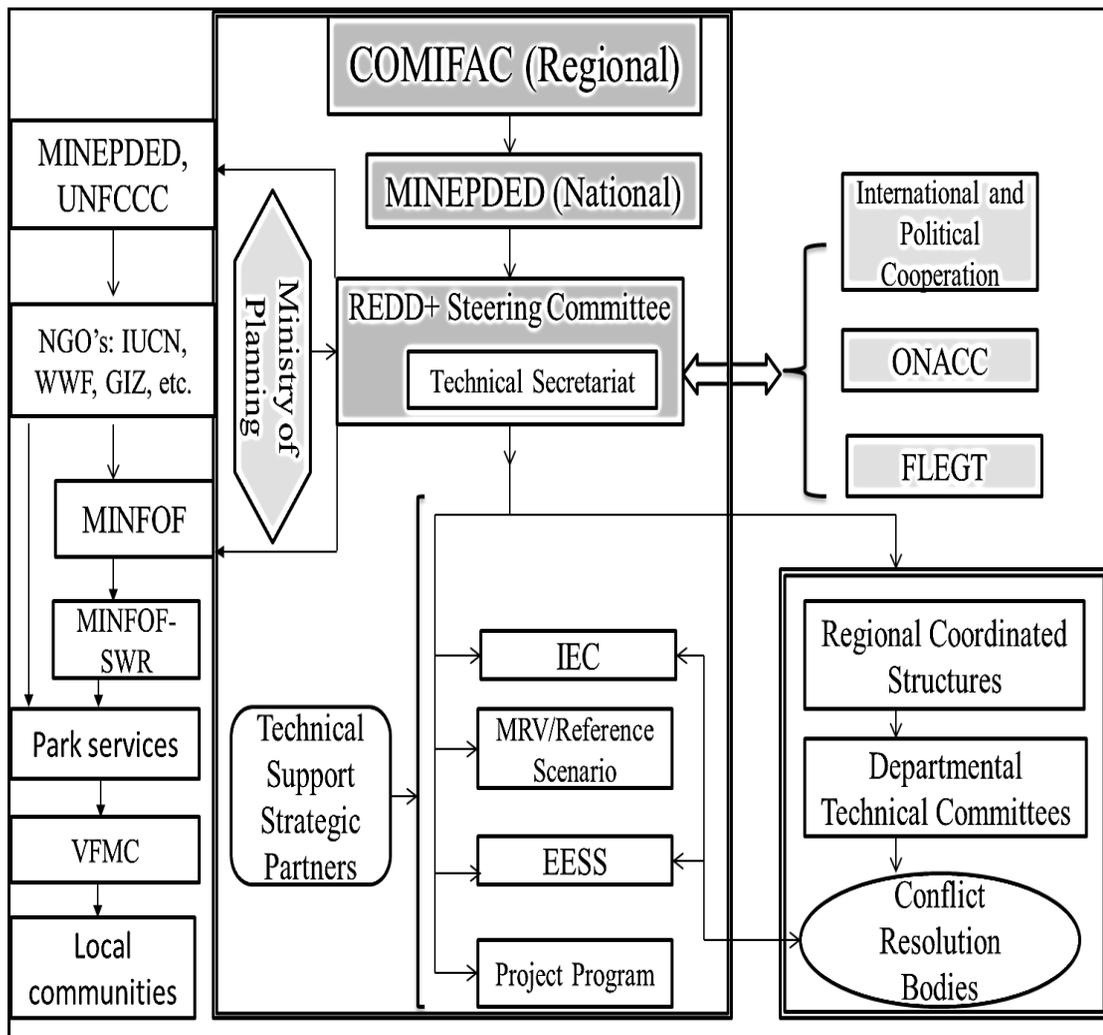


Figure 2.2: Organisational chart of the REDD+ process management institutions in Cameroon showing the interaction between proponents revealing a top-down governance approach with local communities at the end of the chain (adapted from Cameroon R-PP, 2013).

The Ministry of Environment and Nature Protection (MINEP), now Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED), deals with development of environmental policies, implementation and coordination of both international and regional environmental policy, sustainable management of natural resources, sensitisation and awareness raising, and liaising with organisations that are engaged in natural resource exploitation (The REDDDesk, 2014). MINEPDED host the Ecological Monitoring and Control Unit and its climate change unit is the national UNFCCC focal point which is directly responsible for national level REDD+ activities. Therefore, MINEPDED acts as the technical and operational Ministry responsible in executing climate change adaptation and mitigation strategies. The UNFCCC Focal Point office at MINEPDED is responsible as a Designated National Authority (DNA) for climate change issues (Decision No. 00214/MINEF/CAF). Michealowa (2003) supports the idea of maintaining focal point as DNA in countries with few projects and to contract consultants only when there is increase in the number of projects. The Focal Point is therefore, the main link between Cameroon and the international REDD+ process and acts as a compliance point for the country's projects.

The Ministry of Forestry and Fauna (MINFOF) deals with the management and monitoring of permanent forest, inventory of all forest resources, usufruct rights and forest benefit issues. It liaises with all forest related organisations while maintaining all international state's ratified conventions. The Consultation Circle of Partners of MINFOF/MINEPDED (CCPM) carried out coordination and consultation by bringing together donors and international organisation to support the environmental and forest related initiatives. Here the budget from MINFOF and MINEPDED is used to bring together international, technical and developmental partners and funding bodies.

The international NGOs like Bio-Climate provides strategies for reducing poverty in tropical countries through capacity building and payments for ecosystem services generated by sound forest and land management activities to local communities. After Plan Vivo was reorganised in 2008, Bio-Climate redefined its role to focus on assisting organisations to make Plan Vivo programmes and projects happen. The WWF Central

Africa Region Programme Office focuses on the Congo Basin providing technical support to projects in Cameroon.

The National NGOs like Planet survey puts Cameroon Forest and Environmental Sector Policy at a public platform, facilitating involvement of non-government actors with recent development in forest policy and implementation. This function was handed over to Planet survey in May 2011 by the Netherlands based development agency. The Africa Centre for Applied Forestry Research and Development (CARFAD) specialises in sustainable development and environment protection. The Common Initiative Group (CIG) such as the Mount Cameroon *Prunus* Common Initiative Group (MOCAP-CIG) is responsible for the organisation and monitoring of sustainable exploitation and management of *Prunus africana* at village level around MCNP.

The Cameroon government is highly divided into different sectors. MINEPDED, MINFOF and the Ministry of Energy exist as different ministerial departments, so there is need for a strong participatory process through which decision and responsibility are taken. There exists a division of labour across different ministries that hamper coordination. While emission reduction activities in both permanent and non-permanent forest are carried out by the Ministry of Forest and Fauna, the Ministry of Environment and Nature Protection take a lead in monitoring, verification and reporting. The absence of other ministries like finance, agriculture, mining and budget in REDD+ discussions show inadequate REDD+ coordination in Cameroon. Also, the absence of the Parliamentarian Network which is a formal forum of discussion made up of members of parliament shows that Cameroon has no common position. All state actors should have the opportunity to vote draft legislation or implement state regulation instead of the observed divide and rule system.

For community forests, the sub-directorate review and recommend approval to MINFOF and this is advantageous because other ministries at divisional and sub-divisional levels are involved (MINEP, 1998). The revised Readiness Preparatory Proposal (R-PP) offers a coordination structure within the ministries and other stakeholders such as donors,

private sectors and civil society and this coordination depends on the capacity (both technical and financial) and engagement of all stakeholders.

### **2.3 Focus of the study - the state of Cameroon**

The Central African Congo Basin will play a vital role in the success of climate change policy because it comes second in forest area cover after the Amazon Basin. Its two million km<sup>2</sup> of humid tropical forest extend from West Atlantic coast to the Eastern Albert Rift mountains and contains between 25-30 billion tons of carbon (CIFOR, 2008). The Congo Basin forest also holds 70% of the total plant cover in Africa with Gabon (17.7%); the Republic of Congo (12.4%); Cameroon (11.8%); Central African Republic (3.4%); Equatorial Guinea (1.3%) and Democratic Republic of Congo (>50%) (CBFF, 2006).

Cameroon consists of six agro-ecological regions that range from its Southern humid dense tropical forest through different types of savannah to the northern Sahelian drought vegetation. The country is extremely rich ecologically and culturally, with more than 200 ethnic groups and a high flora and fauna biodiversity (WRI, 2001). More than 40% of Cameroon is forest and homes to 40,000-50,000 indigenous people whose livelihood and wellbeing depends on the forest (Freudenthal, 2011). According to Earth Trends Country Data (2008), 37,182,000 ha of land in Cameroon is forested area which include Mount Cameroon. The 42% forest cover in Cameroon makes it a high potential target country for implementing REDD+ concept (Ngendakumana et al., 2013). Deforestation rate in Cameroon was 1% per annum between 2000 and 2005 with demand for wood estimated at 4.5million m<sup>3</sup> hard-wood and 15 million m<sup>3</sup> for fuel-wood (CIFOR, 2008). This high reliance on wood contributes to 30% of non-oil export providing 20,000 livelihoods which causes conflict with state's commitment to implement and enforce forest legislation (OneWorld, 2010).

According to CIFOR (2008), there has been some reforms in the forest sector for the last decade as far as sustainable forest management is concerned, and forest and wildlife has also contributed to alleviate poverty and enhance economic development. In spite of this, continuation of corruption and illegal logging has led to degradation of the environment,

loss of state revenue and conflict. Building synergies between forest governance, equitable benefit-sharing mechanism and reducing emissions through sustainable forest management will yield a tangible reduction in deforestation; improve local communities' livelihood and enhance carbon stocks in Cameroon. Therefore, forest and climate change decision-makers, local authorities, local communities' enterprises, international investors, private sectors, financial institutions and carbon off-set brokers must be targeted.

More reliable field data on carbon stock, emissions and trends is necessary to determine the baseline scenario for REDD+ as a start-off point for measurement and verifying emission reduction to clarify both cost and benefit-sharing. Cameroon has systems in place for remote sensing inventory, but lack field data due to limited financial and technical resources and remote and inaccessible forest areas. There is need to understand the land-use planning and drivers of deforestation among others to better formulate baseline scenarios and establish an accurate REDD+ monitoring systems to assess strategies.

Cameroon relies on the Forest Stewardship Council to manage its monitoring activities and members of communities are not involved in the initial development of REDD+ programme. Ezzine et al. (2009) argue that effort to strengthen community ownership has instead resulted to more timber exploitation in remote forest. The market-based global timber model developed by Sohngen et al. (1999) accounts for both below and above vegetative carbon stock in quantifying potential emission reduction, and costs may be used to check the potential of avoided deforestation in reducing emission costs. With the help of the German International Corporation (GIZ) and the German Development Bank (KfW) the carbon stocks have been accessed and capacity training on GHG accounting carried out to establish a pre-operational carbon accounting system to support the readiness process of REDD+ initiative. The guideline for this activity is as recommended by the Subsidiary Body for Scientific and Technological Advice (SBSTA) and COP and was based on the IPCC guidelines for Good Practice. Deforestation mapping has been carried out to verify cost effective methods of monitoring forest cover using optical satellite (1990, 2000, and 2005). Using Landsat

TM/ETM and Disaster Monitoring Constellation (2005) satellite images, the cloud cover contamination for each of these epochs were detected on a minimum mapping unit of five hectares and crown cover threshold of 10% (Hansen, 2008). The changed areas were classed as: cropland, grassland, wetland, settlement and others, and this stratification helps in enhancing accuracy in carbon accounting with Cameroon's Tier 1 and Tier 2 data sets. Cameroon test area results showed that the rate of deforestation between 1990 and 2000 was 3.45 % and 3.44 % between 2000 and 2005 (Hirschmugl et al., 2014).

The forest in Cameroon is occupied by two sets of communities, the minority Pygmies (hunter-gatherers) and the majority Bantu (agriculturalist) who lived as indigenous peoples with communal rights. Today the pygmies face a challenging transition to modernisation since wild resources alone are not enough to sustain large communities of hunter-gatherers because of scarcity of wild tubers (Survival International, 2013). With the need to cultivate these tubers, some pygmies work for agriculturalist while others are fast turning to agriculture to sustain their livelihoods. The Bantu are very knowledgeable about plant and animal resources and also clever hunters. Though the slash-and-burn agricultural lifestyle of the Bantu people has been claimed to destroy the forest, its shifting cultivations seeks to favour rotating regeneration (stimulate biodiversity) as farmers cut down only selected trees during farming. In this study, the Bakweri and Bomboko Bantu communities living in the tropical forest at the foot of MCNP REDD+ project serve as a case study.

### **2.3.1 Mount Cameroon National Park**

Mount Cameroon is an active volcano, which erupts almost every two decades and lies in the Gulf of Guinea. The volcanic mass is 46 km long and 30 km wide running South West to North East with main peak at altitude 4,095 m. It covers a total surface area of 58,178 ha and it is located within four sub-divisions (four management clusters): Buea (Buea), Muyuka (Muyuka), Mbonge (Bomboko) and Idenau (West-Coast) which is just two km from the sea in its Southern boundary (Map 1.1). The three protected areas close to the park are; the Mokoko Forest Reserve, the Meme River Forest Reserve and the

Forest Management Unit. To the South and South Eastern of the park are four community forests (CF); Woteva (1,865 ha), Etinde (4,976 ha), Bakingili (905 ha) and Bomboko (6000ha). State's large scale rubber and palm plantations (Cameroon Development Cooperation) as well as privately owned plantations are also closed to the park.

A study carried out by the Cameroon Mountain Forest Conservation Foundation in 2001 to evaluate Cameroon Mountain potential for carbon programme showed that carbon sequestration is possible through re-growth and forest conservation on 4300 ha of forest area and the MCNP TREMA database is made up of geo-referenced forest inventory with 20,000 data sets from 300 samples with built in functions to derived indices of "bio-quality" which can be modified for carbon management purposes (EcoSecurities, 2002). This qualifies the Mount Cameroon National Park as a hot spot for REDD+ activities. The Mount Cameroon National Park REDD+ project (Map 1.1) has been chosen as a case study for the following reasons:

- It is a humid forest with 5-10% of the forest areas managed as community forest;
- It records highest deforestation (46.2%) between 1987 and 2010 in Cameroon;
- There is clear focus on reduction of emission, carbon stock enhancement and sustainable management of natural resource in this area;
- There are clear site boundaries;
- It has a reasonable chance of REDD+ incentive implementation (Sunderlin et al., 2008).

### ***2.3.1.1 Physical environment***

**Topography, geology, soils and hydrography:** Mt. Cameroon is an active Haiwan type of volcano erupting about every two decades. The volcanic eruptions recorded within the last century were in 1906, 1922, 1958, 1982 and 1999/2000. According to Payton (1993), Etinde, sometimes called Small Mount Cameroon (about 1715m), is geologically the oldest part of the mountain massif - a conspicuous subsidiary southwest flank of the mountain peak with much older tertiary lava, different in composition to the Holocene basalts of Mt Cameroon. Mt. Cameroon slopes are steep and rugged right

down two km from sea level, and are marked by lava flows of different ages. The soils around Mt. Cameroon are very fertile and are composed of sandy, clay, and loam soil types dominated by sand that originates from young volcanic rocks with poor water retention capacity. The hydrology is made up of seasonal and permanent streams, rivers, springs and crater lakes.

**Climate:** The rainy seasons (April to October) and dry season (November to March) characterised the annual rainfall regime. The annual rainfall ranges from less than 2,000 mm in the North-East (around Munyenge Metombe) to more than 10,000 mm at Cape Debundscha (Eben, 2011). Average annual rainfall decreases with altitude to approximately 4,000 mm at 1000m and to less than 3,000mm above 2,000m. The higher up the mountain, the colder it becomes. For each 100m ascent, the average temperature drops by about 0.6°C. The temperature at the top of Mt. Cameroon records a 4°C when in Limbe at the base it is 32°C. Payton (1993) points out that the humidity remains at around 75-85% due to the marine influence and the incidence of mist.

**Vegetation, flora and fauna:** The Western slope of the mountain is the only area in both Central Africa and West Africa with unbroken vegetation gradient from low-land evergreen rainforest at sea level through its montane forest to the montane grassland and alpine grassland near its summit, thereby, making it the most diverse and richest area in flora. Six main vegetation types have been identified with their corresponding key characteristics from past survey (Table 2.1) (Thomas & Cheek, 1992). Mt. Cameroon contains more than 2,300 species of plants (800 genera, 210 families) of which more than 49 are strictly endemic and 50 are near endemic species (Cable & Cheek, 1998; Cheek et al., 1996; Beentje et al., 1994) which may be due to the fact that the mountain is part of an important Pleistocene refuge. It is due to this uniqueness in rich and diverse vegetation, that Mt. Cameroon has been recommended for a Centre of Plant Diversity (Beentje et al., 1994). Mt. Cameroon harbours more than 85 species of mammals, 363 species of birds (including eight threatened species and two strictly endemic species - *Francolinus camerunensis* and *Speirops melanocephalus*), 130 species of butterfly (including three endemic species), 76 species of dragon flies and one third of the reptilian fauna (86 species) in Cameroon (Beentje et al., 1994). Due to hunting and

deforestation (loss of habitat), the population of chimpanzees, drills and elephants have been fast decreasing.

*Table 2.1: Vegetation types of Mount Cameroon and their main characteristics (Thomas & Cheeks, 1992).*

Vegetation	Altitude	Main characteristics
Lowland Rainforest	0 - 800m	Species-rich, evergreen forest with tall continuous canopy (25-35m) and large emergent trees, rich in lianas, and non-woody climbers. Buttressing and cauliflory are common.
Lower montane (or sub-montane) rain forest	800 - 1,600m	Species-rich, evergreen forest with closed or discontinuous canopy (20-25m), frequently cloud covered, very rich in bryophytes, ferns and vascular epiphytes. With patches of meadows and scrubland dominated by tall Acanthaceae, tall herbs with scattered shrubby trees and tree ferns.
Upper montane rain forest	1,600 - 1,800m	Species-poor, open forest with fairly discontinuous canopy of medium sized trees (up to 20m high), large stranglers, dense epiphytes cover and few climbers.
Sub-alpine rain forest or Montane scrub	1,800 - 2,400	Species-poor, poorly developed open forest with discontinuous canopy of small sized trees (1-15m), and open layer of small shrubs, herbs, climbers and ferns underneath in fire protected hollows.
Montane Grassland	2,000 - 3,000m	Species-poor, rich in temperate genera, dominated by tall tussock grasses, with scatted stunted and dwarf shrubby fire resistant trees.
Sub-alpine Grassland	3,000 - 4,095m	Species poor, dominated by short tussock grasses, with isolated patches of dwarf and gnarled shrubby trees.

### **2.3.1.2 Socio-economic context**

There are about 350,000 people living around MCNP most of whom live in peri-urban areas and villages. The village communities are made up of mainly Bomboko and Bakweri tribes deriving their livelihood mainly from the mountain. There has been an increased population due to immigration from outsiders who are attracted to fertile soil for agriculture. Predominant activities carried out in this area are farming, hunting, timber, trading and fishing along the Atlantic coast. The Cameroon Development Cooperation and Pamol agro-plantation in this area have also attracted workers who are employed to work in the plantation. At retirement most of them remain settled in nearby villages with their families, keeping-up with subsistence farming and trading. The most important source of livelihood is food-crop farming with farm sizes ranging from 0.25ha to more than 10ha. Agriculture employs about 95% of the population while some carried out timber exploitation, hunting, animal-husbandry and trading. The surrounding forest provides timber and firewood for household use. Illegal timber and firewood exploitation are rampant in the reserve and orchestrated by outsiders from nearby towns of Buea, Limbe and Muyuka.

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### **3 Community forest relationships and how they are influenced by the Mt. Cameroon National Park REDD+ projects**

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**Keywords:** Land tenure, Local communities, Customary rights, Social safeguards, Natural resource management.

**Abstract:** *“No forest without trees and no trees without tenure.”* An effective REDD+ scheme should intersect with local socio-economic and land tenure system to avoid marginalisation of local communities and enhance local engagement. But few studies have been done to investigate the level of REDD+’s interaction with community forest relationship. This study examines community forest relationship and how it is influenced by REDD+. Cluster multi-stage random sampling was used to collect data from 259 respondents that were analysed using Chi-square, descriptive analysis and NVivo. This study shows that the government has overall ownership and control over forest and these have led to tenure insecurity which is significantly influencing participation in MCNP-activities. The absence of recognition of traditional rights to own land and restricted access to forest resources have resulted to land scarcity, conflict and decline in production of forest products and these may hinder the effectiveness of MCNP-project. The social and livelihood expectations of REDD+ may be threatened if land tenure reforms which are pre-condition of carbon payment and community engagement are not fulfilled during planning and implementation of REDD+. REDD+ could play a potential role in tenure reforms which need to be consistent with customary systems where local communities’ rights and access to use natural resources are respected.

### **3.1 Introduction**

The main aim of REDD+ is to conditionally reward carbon sequestration and compensate lost opportunities. However, there is fear that unclear tenure system may result to exclusion of indigenous people and land grabbing, prohibiting forest users from accessing forest resources for their livelihood. For REDD+ to be effective, insecure tenure, contestation and ambiguity must be addressed early (Stern, 2006; Westholm et al., 2011), otherwise, REDD+ proponents will keep intervening on tenure, which at present is not yet systematically documented (Sunderlin et al., 2014). The Cancun agreement also spelt out the importance of tenure in community safeguards. REDD+ may help protect forest ecosystems, goods and services with high expectation of positive social and livelihood outcomes; and land tenure reforms are seen as preconditions for REDD+ payment (Karsenty, 2011), equity in benefit-sharing and a way of decentralising forest resource management (Awono et al., 2014).

Tenure is very important to forest dwellers because it is local communities that are going to practically implement REDD+ and the methods of implementation will either benefit or impact them greatly. Africa's state laws in comparison with international treaties show that there is absence of customary institutions and rights to resources, land and forest in Sub-Sahara Africa (Awono et al., 2014) and 75-85% of tropical forest is still formally owned and controlled by formal government (Agrawal, 2008). Secure tenure is a determinant of who uses what resources, under what conditions and time frame (FAO, 2010); else the effectiveness, efficiency and equity in REDD+ will be undermined. Insecure tenure will result to limitation in policy, unequal benefit-sharing, make local users feel discriminated and increase conflict (Sunderlin et al., 2010). Secure tenure renders local communities to become effective conservation agents (Chhatre & Agrawal, 2009) and clear resource rights encouraged sustainable use of natural resources empowering forest users to claim ownership and prevent illegal exploitation by outsiders (Lawlor et al., 2010). Sunderlin et al. (2014), identify four reasons crucial for addressing tenure before the commencement of REDD+ projects:

- Identification of the right holder - since those who enhance the carbon sequestration of forest are to be rewarded, the right holder or benefactors need to be identified beforehand.
- Identification of the responsible party - REDD+ incentives are paid on condition that the right holder is held accountable if he/she fails in his/her obligation.
- Prevention of resource rush - clear and legitimate responsibility and rights in REDD+ in fair allocation to benefit stream to avoid resource rush when REDD+ finally gives value to carbon stored in trees.
- Protection of rights and livelihoods - restriction in use of forest resources should not summarily violate the pre-existing rights and the livelihoods of local communities.

Sunderlin (2014) goes further to argue that to assure efficiency, effectiveness and equitability of REDD+ projects, three tenure related actions must be undertaken: tenure clarification, local people participation at decision-making and strong national policies and measures to secure tenure. These will help identify tenure challenges, those involved in implementation and benefits stream, clarify forest carbon tenure and help exclude competing land uses which are crucial for REDD+ to achieve its goals (Wunder, 2005). The source of tenure insecurity rest in the national processes, strategies and policies that cannot be resolved at local level, so local activities and intervention should be embedded in national effort to address tenure issues.

Cameroon land tenure is under-pinned by the Indicative Land Use Framework, the 1974 Land Ordinance and the Local Cultural and Traditional Land tenure systems. According to the 1974 Land Ordinance, all uninhabited forestland without land title is owned by the state and is conceptualised with the notion of collective ownership. The Indicative Land Use Framework categorised forest into non-permanent and permanent forest. The non-permanent forest estates are further subjected to local customary rights and this poses a great concern of overlaps in both rights and entitlements. Forest tenure condition therefore, tends to be insecure, overlapping and contested (Sunderlin et al., 2008). Ellsworth & White (2004) further state that “*lack of local control over forest use and management decisions is a lasting legacy of state*

*appropriation*". Chiefs have got both political and ritual powers to claim sovereignty over land in the non-permanent forest according to local traditional regimes. The traditional ownership of these lands can be by virtue of first occupation for original family lineage; by birth, marriage or local access through family lineage, elders, traditional councillors; migrants or non-natives can pay tribute to chiefs to grant them usufruct. This makes it common for strangers to think that state ownership implies getting access to these areas without local level approval. It is this duality between national and local levels and the overlaps of rights and entitlements that pose risks to forest project development and management. Some local communities have got customary claims over forest land that are under state ownership and these overlapping claims are seen between government and private investors, private owners and local communities as well as within local communities (Holland et al., 2014); thereby, leaving communities in a state of dilemma when government contracts are signed without Free Prior-Informed Consent of the local indigenous communities. While local communities cannot legally sue the government in a court of law for matters concerning community forest (Vabi et al., 2000), the minister reserve the right to halt or stop any 25-year communities' forest management contract if the management plan is not respected. So the Ministry of Forestry and Fauna (MINFOF) has discretionary power over forest and lack of clarity on earnings from forest ecosystem services and inadequate benefit-sharing mechanism to re-distribute forest revenue right down to local communities (Minang et al., 2007), obstruct implementation of sustainable forest projects that are geared toward poverty alleviation and improved livelihood of indigenous people for local development. According to Freudenthal et al. (2011), "*REDD+ readiness planning activities in Cameroon disregard issues of land tenure, customary rights and benefit-sharing.*"

Forest is defined by the 1994 forestry law of Cameroon as "*any land covered by vegetation with a predominance of trees, shrubs and other species capable of providing products other than agricultural products*", without any parameter of minimum area of land, height of tree or crown cover. According to Minang et al., (2007), "*the forest definition issue requires careful data analysis of the carbon sequestration potential of various agro-ecological regions in the country, as well as*

*comparative cost implications for various threshold crown cover values*". In Cameroon, forest reforms (revision of 1981 forest law) which started in 1988 led to the development of Tropical Forest Action Plan with five national forest policy strategies and objectives (The Government of Cameroon, 1996) meant to:

- Safeguard and protect the biodiversity, forest heritage and environment;
- Strengthen community engagement in conservation and forest management, so as to link conservation efforts to income generation and improved livelihoods;
- Improve production of forest resources and their contribution to Cameroon GDP while preserving some species;
- Regenerate natural forest resources to enhance its potential; and
- Set-up institutional framework to revamp the forest sector.

The new 1994 forest law was enacted and the Prime Minister later signed its implementation decree in 1995 (Decree no. 95-531-pm, 08/1995) which laid out a new classification of forest, logging rights, norms and conditions of forest management. It was based on these rules, conditions and norms laid out by the 1994 law that the Indicative Land Use Framework was enacted in 1995 (Plan de zonage no. 95- 678-pm of 18/12/1995) to plan the various forest types, though as of 2008, only 30% has been zoned. One important aspect of the 1994 Forest law is the division of forest into Permanent Forest and Non-Permanent Forest Estates (Dkamela, 2011) (Table 3.1). There are regulatory weaknesses with respect to entitlements to carbon benefits, due to inadequate definition of forest products. The 1994 Forestry Law defines forest products as: *“mainly wood and non-wood products as well as wildlife and fishery resources derived from the forest. Certain forest products such as ebony, ivory, wild animal horns, as well as certain animal, plant and medicinal species or those, which are of interest, shall be classified as special. The list of special products shall be fixed, as and when necessary, by the competent ministry”* (Section 9:1-2). If carbon services are included into the list of special products, then local communities cannot sue the government on carbon. Even when local communities have got statutory rights over forest, they are not likely to be enforced nor respected (RRI, 2012a). The importance of resolving tenure ambiguity and assuring local community engagement has now been recognised

(Westholm et al., 2011). This study examines community forest relationships and how they are influenced by MCNP-REDD+ project.

*Table 3.1: Summary of forest types and conditions in Cameroon (Minang et al., 2007).*

<b>Category</b>	<b>Forest type</b>
A	<b>Permanent Forests or classified forests:</b> Forests set aside for long-term use and should constitute at least 30% of total forest area in the country
I	<b>State Forests:</b> Comprise protected areas including national parks, forest reserves and sanctuaries with conservation as primary objective. Management plans required
Ia	<b>Production forest reserves:</b> To enable sustainable lumber production. Forest concessions can be granted for an area of up to 200,000 ha to licensed timber operators in these areas. Management plans required
Ib	<b>Council Forests:</b> Planted or natural forests managed by municipalities in their area. Planned logging and restoration/afforestation activities are allowed in these forests.
B	<b>Non-permanent Forests:</b> Includes all unclassified forests that could be converted temporarily or permanently to purposes other than forestry.
I	<b>Private Forests:</b> Planted forests belonging to individuals in which logging, tree planting and management activities are allowed. Management plan required.
II	<b>Communal Forests:</b> This is a residual class of forests including all forests not included in permanent or private forest estates.
IIa	<b>Community Forests:</b> Forest area within the communal forest estate, which is the object of an agreement between community and state. Maximum area is 5000 ha per forest. Management contracts run for 25 years renewable. It is the only forest estate communities own and is fully entitled to revenue from natural forest products. Communities may open their community forests to a sale of standing volume and other activities, provided they are agreed upon and included in the management plan.
IIb	<b>Sale of standing volume:</b> An area of not more than 2500 ha for which logging rights have been granted to a Licensed Timber Operator. No management plan is required.
NB: Communities have usufruct rights to all forest types in the country ( <i>Minang et al., 2007</i> )	

## 3.2 Methodology (See 1.6)

## 3.3 Results

### 3.3.1 Land tenure - ownership and control of forest

The local communities see the government as having overall ownership (Fig. 3.1a) and control (Fig. 3.1b) over forest leading to tenure insecurity. Participation is highest among forest dwellers that have the perception that local communities own the forest (Fig. 3.1c) and control the forest (Fig. 3.1d). Results show a significant relationship between participation in MCNP-activities and local communities' ownership statute ( $\chi^2=4.853$ ,  $p=.028$ ) as well as control ( $\chi^2=7.385$ ,  $p=.007$ ) of forest.

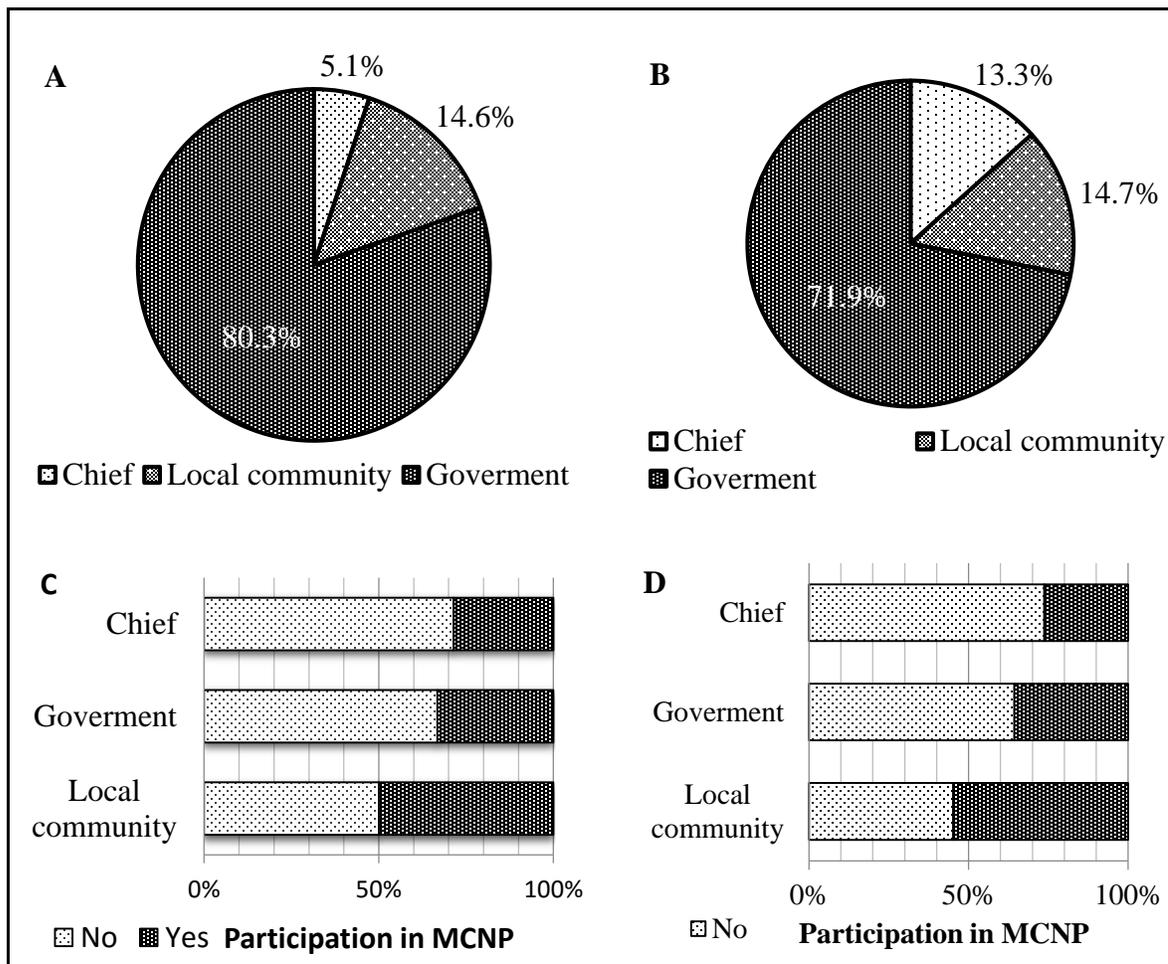


Figure 3.1: Percentages of perception of forest ownership (a), control (b) and relationships between participation and perception of ownership (c) and control (d) over forest within MCNP-initiative

The Most Important Products (MIPs) from the forest were:

- Firewood or charcoal → Firewood (100%)
- Timber or other wood → Timber (Mahogany/Iroko) (100%)
- Food from the forest → Plantains (100%)
- Medicine from the forest → *Prunus africana* (100%)

Firewood is harvested in private, open access and community forests; timber is harvested in both state and open access forests, plantains in community and private forests while *Prunus africana* is harvested in state, community and private forests (Fig. 3.2a). Fig. 3.2b shows that firewood is harvested in both managed, plantation and agroforestry types of forests while timber and *Prunus* both come from reserved and managed forests. Plantains are cultivated in managed forest, agroforestry and crop land.

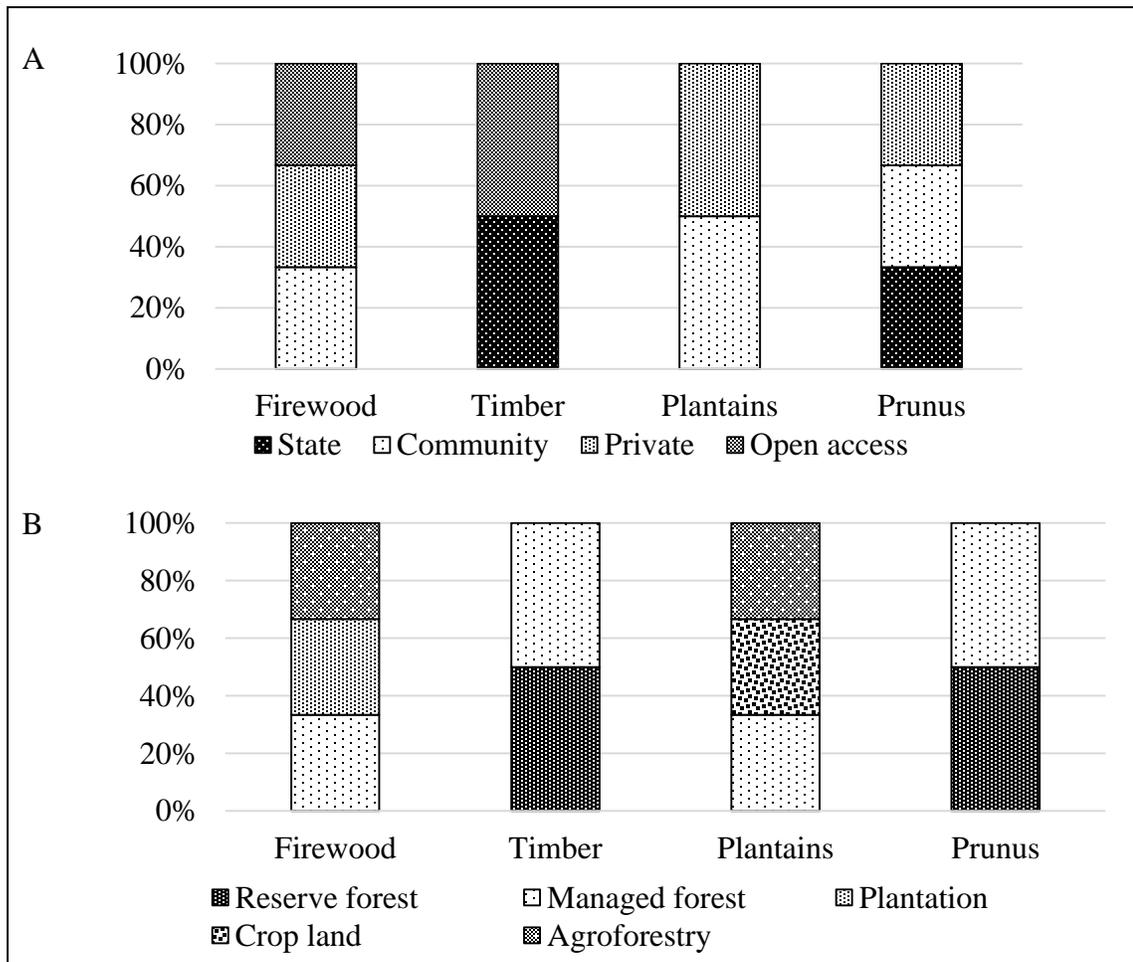


Figure 3.2: Percentages of ownership statutes (a) and forest types (b) for most important forest products.

### **3.3.2 Influence of REDD+ on community forest relationships**

Results show that all respondents have experienced a decrease in MIPs due to government restriction on reserve, large scale projects such as plantation and infrastructure, increasing market potentials for forest products and outsiders attracted by fertile land that buy land and restrict access (Fig. 3.3a). The main reasons for the decline in firewood are large scale forest projects and government restrictions for accessing forest products within the park. The decline in the use/production of timber is due to government restriction and increased marketing potentials. While the decline in plantains production is blamed on large scale projects and increased market potentials, the decline in use/benefit of *Prunus africana* is as the result of government restriction. To increase benefits in use or cash from MIPs, local communities seek to invest in planting trees/forest products, gain better access (more use rights) to forest/ MIPs, better access to market and reduce price risk, better access to credit/capital and equipment/technology, better protection (avoid overuse) of forest/MIPs and better skills/knowledge on how to collect/use MIPs (Fig. 3.3b).

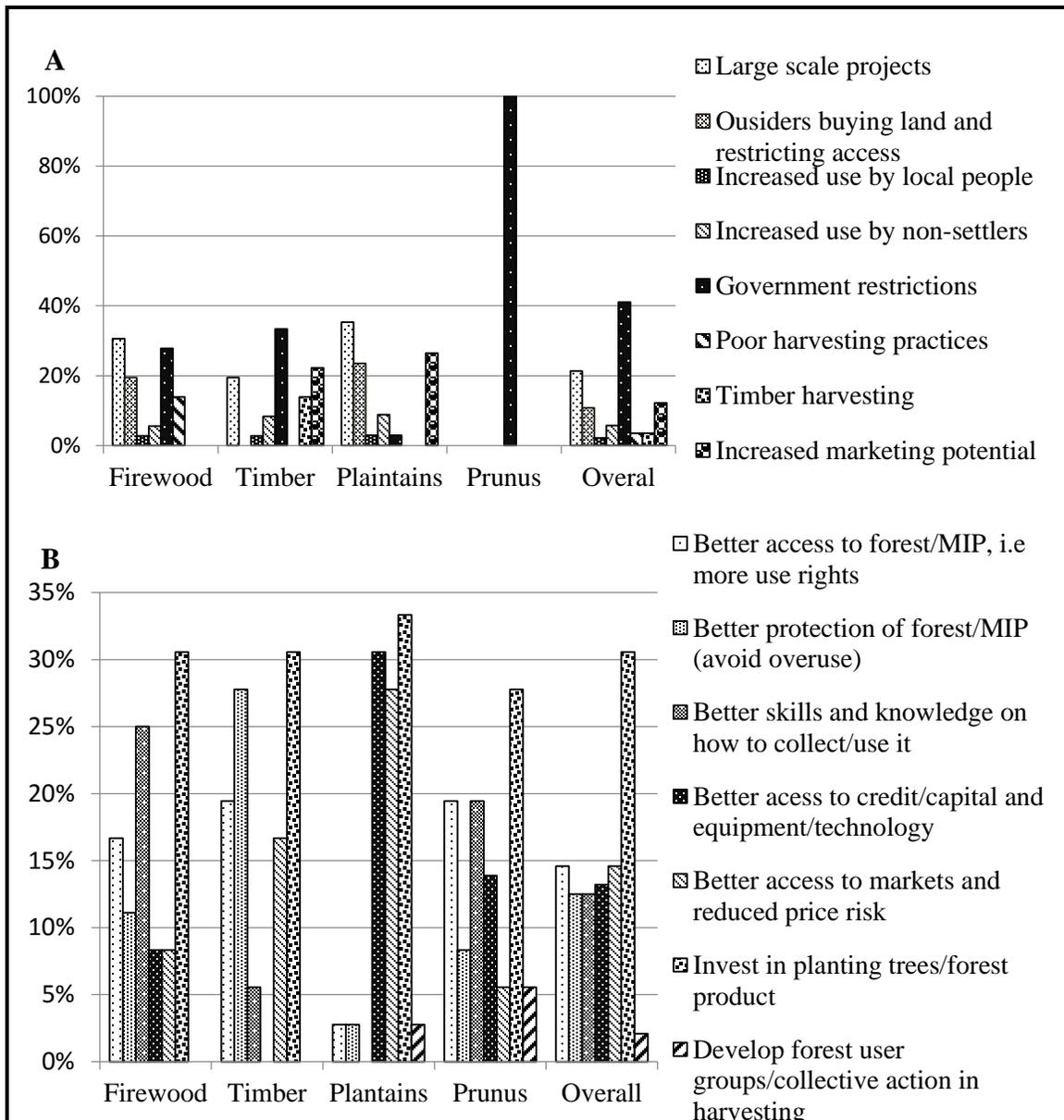


Figure 3.3: Percentages of reasons for decline in most important forest products (a) and ways to increase benefits from these products (b) in MCNP.

**Firewood:** The production of firewood which is the basic fuel source in local communities is also reducing due to emergence of large scale projects such as plantation and new settlement, government restrictions for forest conservation, and influx of outsiders that are buying land for resource exploitation and restricting access (Fig. 3.4a). There are large scale projects going on in Buea, West-Coast and Muyuka clusters and government restriction in Bomboko, Buea and Muyuka, while outsiders are buying land and restricting use in West-Coast resulting to a decline in firewood.

Local communities seek to increase planting of trees, improve skills and knowledge on how to collect/use firewood and have better access to forest and more use rights (Fig. 3.4b). Muyuka respondents wish to improve their skills and knowledge on how to collect/use firewood and planting more trees while Bomboko cluster seeks to invest in tree planting and avoid over-use of firewood. The Buea cluster wants better access to firewood as well as better skills to collect/use firewood, while West-Coast seeks to invest in tree planting, better access to market for firewood and better access to capital and technology in tree planting.

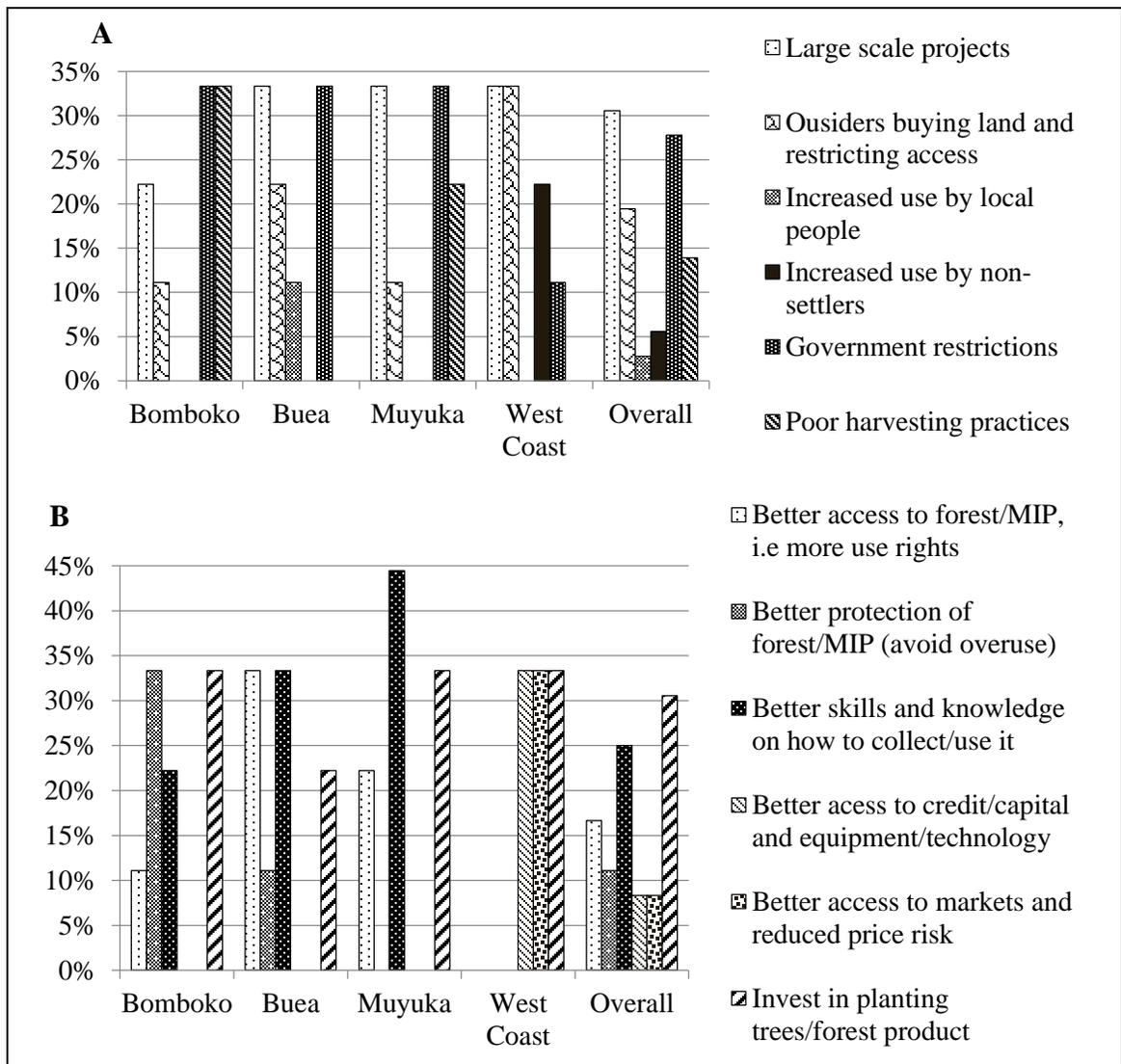


Figure 3.4: Percentages of reasons for the decline in firewood (a) and ways to increase benefits from firewood (b) within MCNP-clusters.

**Timber:** In all clusters, government restriction and increased market potentials are the main reasons in the decline of timber production. Large scale project in Buea, West-Coast and Muyuka, increased use by outsiders in the West-Coast, and timber harvesting in Bomboko and Muyuka has resulted to a decline in timber production (Fig. 3.5a).

Investing in tree planting, avoiding over harvesting/use and better access to forest are needed to increase production and benefits of timber (Fig. 3.5b). While Buea, Bomboko and Muyuka seek more usage rights/access to timber, Bomkoko, Muyuka and West-Coast seek better access to market, and Bomboko and Buea seek better skills and knowledge in harvesting/usage to enhance benefits from timber.

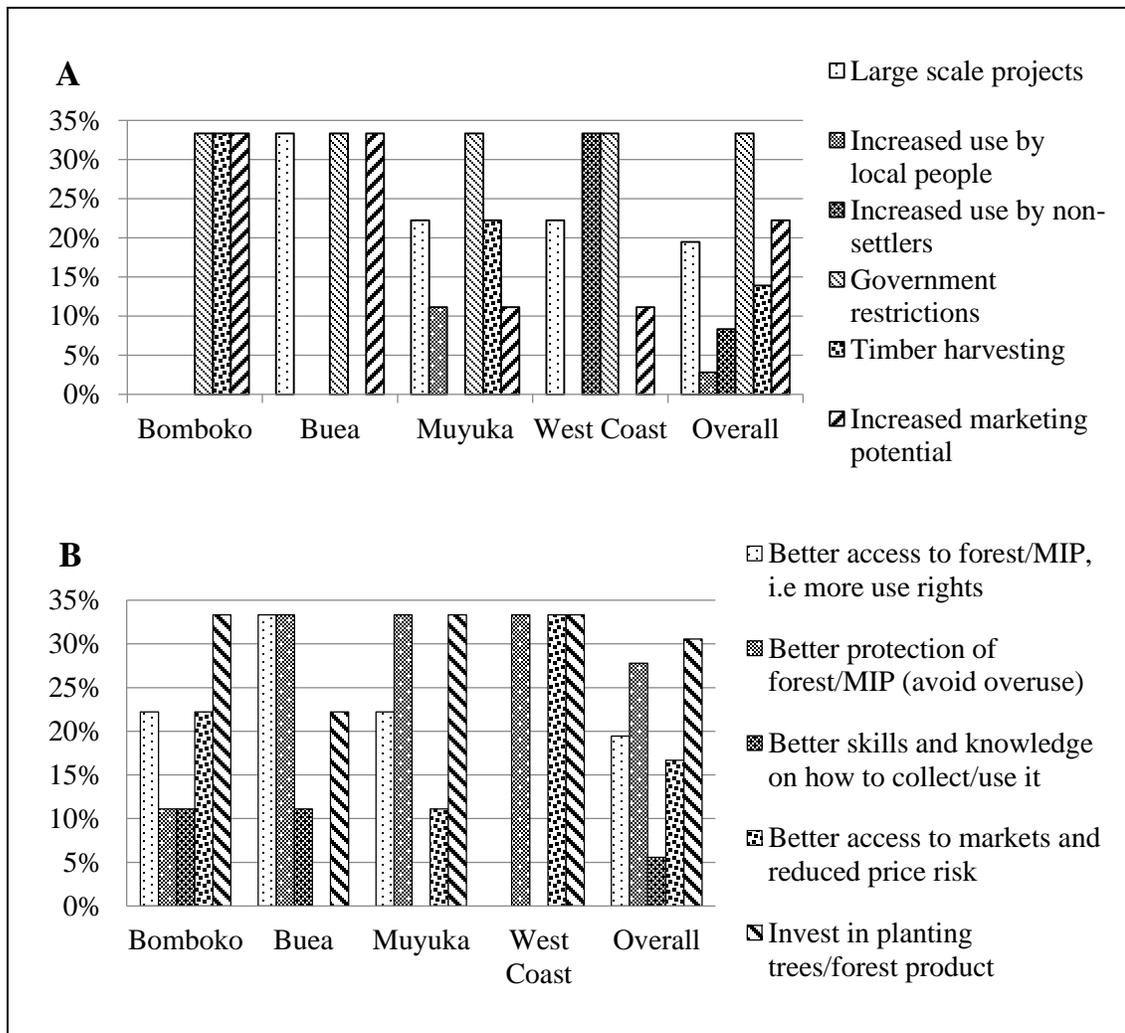


Figure 3.5: Percentages of reasons for the decline in timber (a) and ways to increase benefits from timber (b) within MCNP-clusters.

**Prunus:** The decline of the commercially most important medicine - *Prunus africana* is solely due to government restrictions for forest conservation (Fig 3.6a). Investing in planting *Pygeum* is seen as the main action needed to enhance benefits in use/cash from *Prunus africana* (Fig. 3.6b). Better access (more use-rights) to forest, better skills/knowledge on sustainable harvesting and better access to capital/credit and equipment/technology were recorded as ways to enhance production/benefits from *Prunus africana*. All clusters seek to invest in planting *Prunus* and better access to forest. Buea, Bomboko, and Muyuka seek better skills/knowledge to harvest/use and to avoid overuse while West-Coast seeks better access to market and reduced price risk. It should be noted that in all three MIPs (firewood, timber and *Prunus*), West-Coast seeks for improve access to market as a way to increase benefits from products.

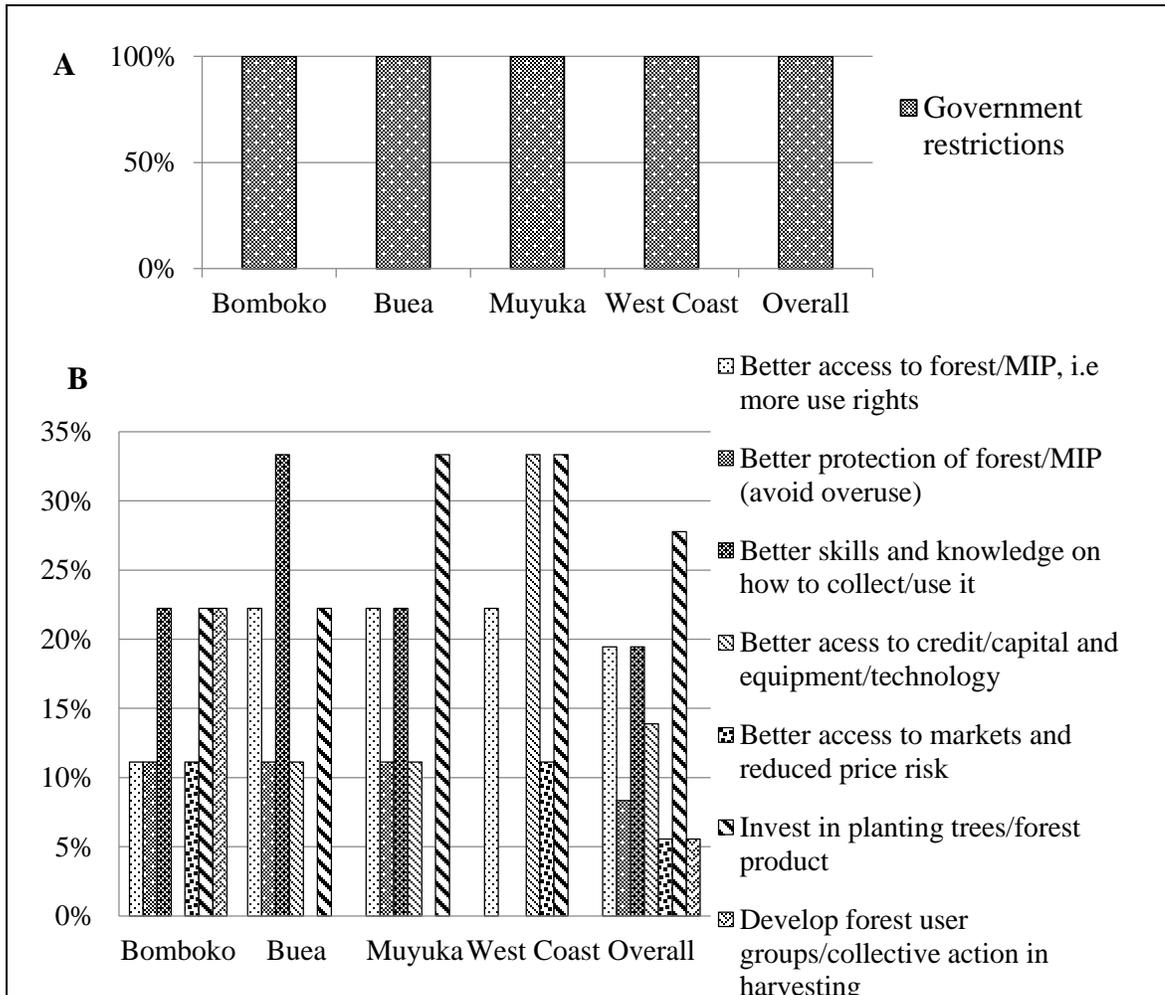


Figure 3.6: Percentages of reasons for the decline in *Prunus* (a) and ways to increase benefits from *Prunus* (b) within MCNP-clusters.

### 3.3.3 Qualitative results

The word clouds shows that respondents talked mostly about forest, community, farms, trees, activities and permission (allowed) (Fig. 3.7a), from where four themes were established: Cameroon forestry law (A), community forest conservation activities (B), park encroachment (C), and farm crops (D). Table 3.2 and Figure 3.7b further show the types of comments from different levels of stakeholders.

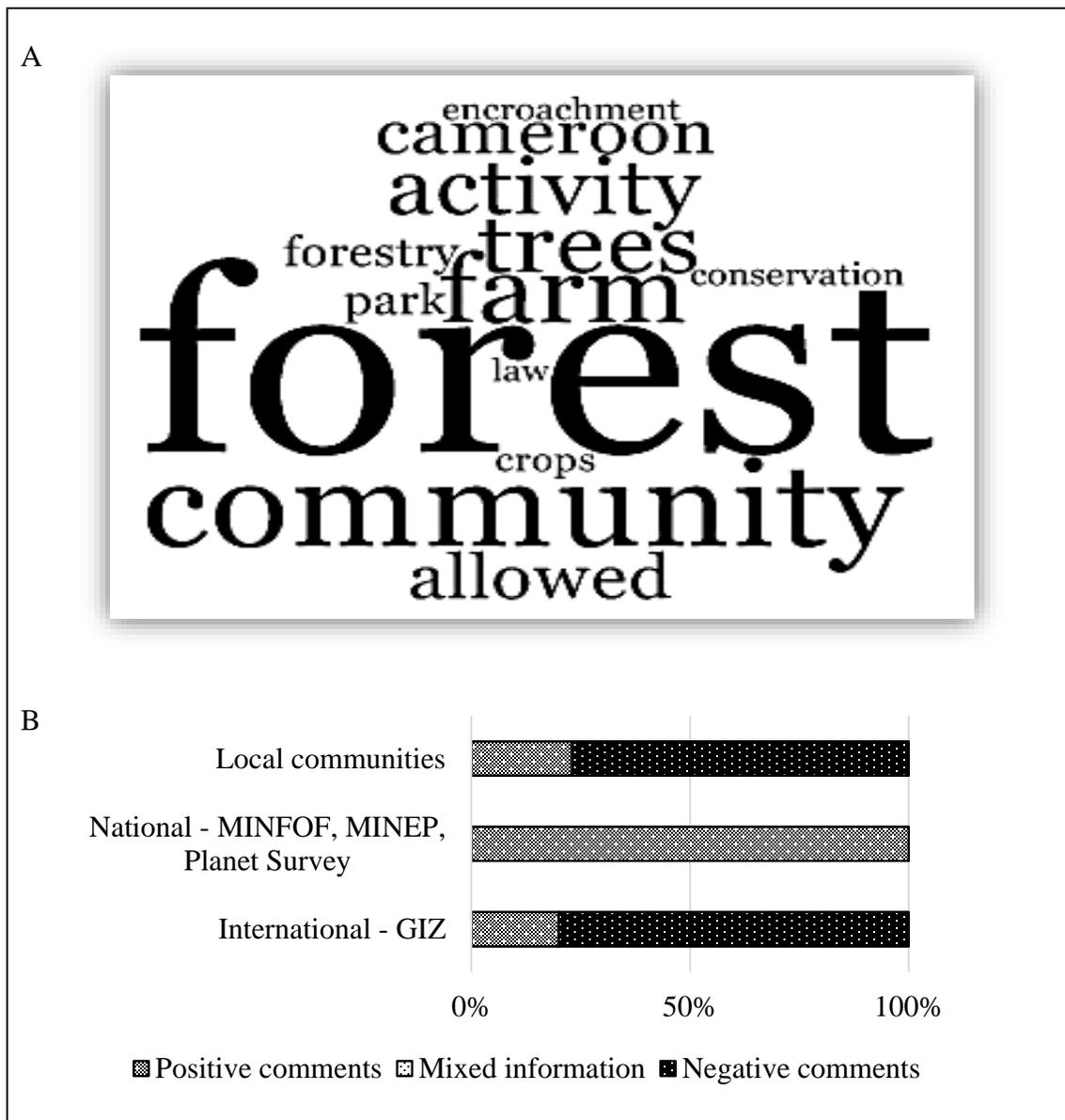


Figure 3.7: Word clouds showing most mentioned words from the interview (a) and types of comments provided by different levels of stakeholders (b) on tenure issues around MCNP.

### **3.3.3.1 Cameroon forestry law**

While GIZ-respondent confirmed the complexity of Cameroon forestry law and the lack of understanding at local setting, members of local communities were concerned about state ownership of forest.

GIZ: *“There is not much understanding of the Cameroon forestry laws in the communities... NTFP users are also sometimes very confused with what is allowed and what is not allowed. What they can collect and what not. This is what we are trying to achieve through this conservation development agreement and defining roles and responsibilities”.*

LC: *“We don’t have community forest; the government owns the forest...”*

### **3.3.3.2 Community’s forest conservation activities**

National stakeholders think they are trying to enhance communities’ involvement while GIZ feels that members of local communities have the ability to fight for what they want if they are interested. But members of communities believe they are the ones preserving the forest though they are faced with livelihood challenges as a result of restricted access to the park and population increase.

National: *“We try to involve local community in identifying the key drivers of deforestation and land degradation.”*

GIZ: *“When the MCNP was created, the community fought for 6000 hectares of land all the way to the prime minister for their own use. So if there is something really of interest, they actively fight for it.”*

LC: *“These communities are the ones preserving the forest... If we have to rate ourselves in the involvement of forest activity we would get 4/5.”*

LC: *“There are some areas with medicinal plants so nobody farm there again. The area is being conserved and preserved...”*

LC: *“We practice forest management.”*

LC: *“About 100 people have moved here as strangers (per year) and the population has*

*increased.”*

*LC: “The forest is our only source of survival, but now that we have been restricted from using the forest, the people restricting us have to provide us with other means of living or give us jobs.”*

*LC: “At first, we used traps for hunting, and then sell the meat so we can buy other things, but now nothing.”*

*LC: “So I don’t see any magic that will stop us from harvesting from the forest because that is the only activity and source of survival that we have, except we have alternatives.”*

### **3.3.3.3 Park encroachment**

The major threats around MCNP remain encroachment for agriculture and poaching which are carried out mostly by outsiders. GIZ and local communities’ respondents were all concerned about these issues.

*GIZ: “The main threats in the park are encroachment for farming, timber exploitation and hunting. I think the biggest threat at the moment is farm encroachment.”*

*GIZ: “Efolofo have a lot of conflicts about encroachment. They are saying that chiefs are selling lands.”*

*GIZ: “In Bomboko you really have pressures from outsiders trying to take land. Recently we had two elephants killed at Bomana and there is a lot of encroachment in the area here.”*

*GIZ: “The area around is on a very high pressure zone. Not even the indigenous community are encroaching in the park. It is only people from outside coming and looking for land. We have a lot of migration from areas like the North-West and South-West coming here to settle down because the soil is very fertile here. And in this area land is very scarce, so this is also a challenge to the community.”*

*LC: “There are heady people who encroaches the forest and cut down any tree even the Mahogany, whether it is big or small they just cut it and that is not good. So when they brought up the idea to create a community forest, we agreed to that because if we cut down all the trees, the next generation will not meet the trees. I personally helped my*

*husband to build this house with wood from mahogany, but now only premature mahogany is available because all the strong and mature ones have been cut down.”*

#### **3.3.3.4 Farm crops**

Local communities’ respondents expressed concerns about shortage of food since the establishment of MCNP in 2009 due to state land grab and climate change.

LC: “...*food has reduced in the past five years because MCNP has taken most part of our land.*”

LC: “*The most important products from the forest are fire-wood and food, but they are reducing because of climate change. The crops are not doing well.*”

### **3.4 Discussion**

The right to land and territories to local communities is an element of the right to property applicable to REDD+. According to UNDRIP, “*Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired*” (Wiessner & Historical, 2009). One of the key challenges perceived by the Forest People Programme and the United Nation REDD+ Programme is tenure reforms because state control and ownership of forest result into tenure insecurity and disregarding customary claims create uncertainty in terms of meeting up with the requirement of REDD+ social safeguards (Larson et al., 2010a; 2010b; 2010c).

The 1994 Forestry law regulates ownership of land in Cameroon, “*the state, local councils, village communities and private individuals may exercise on their forest and aqua-cultural establishments all the rights that result from ownership subject to restrictions laid down in the regulations governing land tenure and state lands and by-laws*”. Until 2009, the government had not adequately taken care of Mount Cameroon reserve area for about 30 years and this encouraged people to gradually encroach and extend their agricultural practices (Awono et al., 2014). This land which was once regarded as being under the control of the chiefs and local communities now poses threat of tenure insecurity for forest dwellers. 2009 saw the birth of MCNP, and the

boundary demarcation of this park has led to land rights claims from villagers and some of these lands claims are located right inside the national park. The total area of MCNP is 58,154 ha out of which 24,000 ha lies on the encroachment belt and risk being converted into agro-forestry (Awono et al., 2014). The land categorised around MCNP are reserve forest, managed forest, plantation, agro-forestry and pasture; practising four tenure systems: state, community, private and open access. All reserves are managed by the state.

### **3.4.1 Land tenure - ownership and control of forest**

Local communities follow traditional/customary laws which are not included in legal state laws (Larson et al., 2012a; 2012b; 2012c) and this has made land tenure systems insecure. The Cameroon Land Tenure Ordinance determined land ownership. Article 1, Decree No: 76/165 states that “*Land certificate shall be the official certificate of real property rights.*” Local communities cannot claim ownership of land without a land certificate no matter how long they have lived and/or used the land. The Land Tenure Ordinance do not recognise customary title to land, thereby, creating uncertainty in land ownership and tenure rights. Section 17 ironically gives rights to occupy and use land that have been occupied/used since August 1974, but they still need to apply for a land certificate. Customary community ownership rights are not aligned with requirement of obtaining land certificate and the process is even expensive, complicated with corrupt procedures. These make most local communities unable to afford private or community land certificate. The government have overall ownership and control over forest and these have led to low participation in the project. When local communities claim ownership of project they fully engage in realising it. The low female participation rate in MCNP-activities may be linked to cultural practices that deprive them from ownership to land. Communities do not require state full ownership recognition to facilitate sustainable use of resources (Ostrom, 2010), but if accorded long term harvesting rights on some species, they would most probably engage in monitoring forest activities (Schlager & Ostrom, 1992). *Prunus africana* is the only NTFP sustainably harvested by Mount Cameroon *Prunus* Common Initiative Group (involving 33 of the 41 park villages as of now).

According to the 1994 Forestry law, all natural resources belong to the state. The 1998 Water Law gives exclusive rights of all fresh water within its national territory to the state while the Mining Code of 2001 (section 2) gives ownership of all mining resources to the state except where there exist private land certificate. Government ownership of forest often results to insecure tenure, disregarding customary claims and thereby, creates uncertainties in fulfilment of REDD+ social safeguards (Larson, 2010b). So land tenure is key in determining ownership of natural resources. The 1994 Forest law stipulates that all natural resources found in state or communal forest are owned by the states, those of council forest belongs to the council, while those found in private forest are privately own as stipulated by section 39(1) and the 1974 Land Tenure Ordinance, but private ownership is limited by section 39(5) which gives the state right over all forest products found on private natural forest land. Since the state has full ownership of MCNP-REDD+ project, it is evident that the benefits will be only for the state, thereby excluding community out of the benefits stream.

### **3.4.2 Community resource tenure challenges**

Securing tenure and enhancing local engagement is critical for increasing local communities' resilience or adaptive capacity to climate change (Somorin, 2012; Chatre & Agrawal, 2009; Lawlor et al., 2010). For forest to be considered a sustainable natural productive assets for communities, tenure needs to be secure with clear rights and responsibility, land properly conserved, managed, enriched and improved for provision of constant flow of benefits and products providing added value (Barry et al., 2003). Tenure rights are insecure at MCNP REDD+ project because of human settlement around the park boundaries without rights to harvest timber, medicine, food nor NTFP for their livelihoods. Abandoning their traditional activities requires adequate compensation, but there is doubt if REDD+ mechanism can provide such compensation. Time will tell of what will happen to the 6000 ha of cocoa plantation and other crops that have been carved out of the MCNP to Bomboko cluster. Local communities are involved in crop harvesting, hunting and timber exploitation for survival. Restricting access to forest resources has caused a decline in MIP which is affecting their livelihoods. To increase the benefits (in use/income) from MIPs, local communities are

seeking for better access to forest resources and more usage rights; better protection of forest products through avoiding overuse of resources; better access to markets and reduction in price risk and above all to fully engage in planting forest products.

There is no clear regulation on carbon ownership in Cameroon and the legal carbon seller has not been identified (Sama & Tawa, 2011). The legal system does not make any distinction between carbons stored in trees and trees itself. By deduction, the owner of the resources that stored the carbon should own the carbon and subsequently the carbon credit. The uncertainty in land tenure system poses a problem in determining carbon ownership. Although local communities have claimed customary rights over land within their territorial boundaries for centuries, most forested areas still belong to the government because of no land certification title. Therefore, it is likely that most carbon credits will go to the government. Forest dwellers are direct custodian of the forest where they have lived for centuries and derived their livelihood. Cameroon is a signatory of the Convention of Biological Diversity and therefore, has a duty to protect local knowledge, and customary use of forest and its resources. Strict land-tenure law enforcement may deprive local communities from engaging in MCNP-REDD+ activities.

Fobissie et al. (2012) state that the Cameroon government is slowly, but surely increasing local control over forest land through strengthening of local and customary rights and encouraging private and collective ownership through community forestry. With the financial incentives potential of REDD+, the government of Cameroon may centralise forest and land tenure ownership (Phelp et al., 2010) that will help define carbon ownership in future REDD+ initiatives or implement REDD+ within its current legislation aimed at strengthening communities' right. Local communities around MCNP have no official rights to resources within the protected area. Those indigenes that have farmlands within the park could become frontline guardians if the government could map out these areas from the park and give it back to customary rightful owner on condition that there is no further encroachment. Local communities derive their livelihood from forest resources, although they have no statutory rights, their customary rights should be taken into account to preserve their carbon rights because they see

REDD+ as an opportunity to conserve forest and generate income. Improved agricultural techniques are needed to improve yield to meet up with population growth.

Lack of carbon rights may make forest dwellers to question the efficiency of REDD+ in improving livelihood through forest conservation (Somorin et al., 2012). Though mitigating climate change is important, improving livelihoods and forest conservation improve adaptive capacity of forest-dwellers to climate change. REDD+ success depends on integrating the adaptive needs and priorities of forest dwellers in its implementation, of which food production is one of them. Securing tenure rights and effective engagement in decision-making at cluster platforms are essential in realising MCNP-REDD+ objectives and community adaptive capacity to climate change. Tenure reforms should be consistent with customary systems where communal ownership should be recognised rather than private or state ownership (Brown et al., 2001), but local ownership rights should involve capacity to manage. Cameroon has not yet defined property rights to carbon (Awono et al., 2014).

According to local communities, they have rights over forest land they have managed for livelihood provision and leaving their farmlands simply jeopardises their livelihood (Awono et al., 2014). Though members of MCNP-clusters have claims over the farmland within the park, they seem to be flexible because they are aware of the fact that they were not supposed to encroach into the reserve. Fertile soil for food and cash crops has led to the influx of migrants and population growth to farm on fertile agricultural soil to meet-up with livelihood challenges. Scarcity of farmland combined with state laxity and livelihood challenges are some of the factors that caused them to establish plantations and farmlands on reserve area at an acceptable risk. It would be better if communities are financially compensated for investment already made which was partly due to state laxity to control forest reserve. While the indigenous people are observing transformation of 'their' land into national park, settlers and/or outsiders are challenging the decision and keep encroaching the forest for farmland which is unfair to indigenes that cannot stop settlers and/or outsiders from encroaching into the park. Migrants hold that the park belongs to the state and only the state can stop encroachment not indigenes. Indigenes have lost their traditional rights over the park. Local communities are seeking

better access to forest products. Apart from government controls over the park, the Cameroon Development Corporation also extends plantations into villagers' farmland with financial compensation without alternative land for them to farm on. This has resulted to conflict as land becomes scarce.

### **3.5 Conclusions and recommendations**

For REDD+ to succeed, forest dwellers need to be able to appreciate its importance and the Land Tenure law need to be revised to include appropriate incentives, opportunities and customary rights to local communities. Indigenous people have customary rights over the land they have cultivated over a long time for their livelihood demands, and leaving their farmland would jeopardise their livelihood. Insecure tenure will put them out of REDD+ benefits because power disparity lead to inequality in benefit-sharing among stakeholders (Sikor & Nguyen, 2007; Schreckenberg & Luttrell, 2009). Local communities considered REDD+ as having the opportunity to conserve forest as well as generate income. They have been users of land and forest resources for centuries. Although they lack statutory rights to land, it is possible to build on customary rights and recognise local rights to own carbon. The social safeguards specification of REDD+ might provide better incentives for local community engagement.

Strict REDD+ obligations are not yet defined within MCNP project because it is still in its early stage and carbon has not yet been sold or bought. There is still much uncertainty over communities' access to natural resources, rights and land ownership. The 1994 forest law allows local communities to apply for and obtain community forest through stringent conditions; like developing management plan, annual report writing, and recording inventories; which are cumbersome and hard for local communities to comply. This has been one of the major constraints to land ownership and carbon ownership rights to local communities. Though forest dwellers sometimes lack adequate capacity to implement sustainable forest management and development strategies (Njamnshi et al., 2008), western forest management strategies may not suit customary lifestyle. There is therefore, need to build capacity to enhance community leadership to defend their rights,

interest and lifestyle. Capacity building and training on REDD+ support both conservation and millennium development goals.

The Government of Cameroon officially recognises traditional rulers and authorities, and this has helped to use chiefs and their councillors in liaising between the government and the members of the community during forest projects. The strengthening of customary rights over forest through community or private land title should be continued. Organisation and leadership of local community will enable them stand-up for themselves and have a say at discussion table. Customary rights of local communities need to be protected and better developed. Adequate measures need to be taken to ensure full and effective engagement of all stakeholders and most especially forest dwellers for effectiveness and efficiency in REDD+. For REDD+ to achieve its objectives, forest dwellers should be allowed access to natural resources as well as the customary rights to ownership.

To meet-up with the REDD+ requirement for social-safeguards, states may grant permit for community forest to park villages. Community forestry has the potential of achieving biodiversity conservation, carbon sequestration and supporting local development (Smith & Scherr, 2003), therefore, it has the potential for effective REDD+ scheme. The institutional establishment of community forest is recognised by the 1994 Cameroonian forest law though; there is still contradiction between the law and social safeguard short-circuiting tenure complexity (Wily, 2011). The management of community forest is characterised by sustainable resource use and socio-economic factor. Therefore, a legal community forest which is managed by local communities following state laws will be a better option. The right holders will be the MCNP villagers, responsible person will be the chiefs, benefactors will be communities, there will be no resource rush since they are the original custodians, local livelihoods and rights will be protected, thereby, balancing the benefit of REDD+ to the needs of local people.

The zoning plan should be reviewed with clear mechanism of land sharing. Zoning and land-use-planning help to avoid conflicts among different natural resource users, be it conservation, agriculture, or forestry concessions. Local communities may also engage in planning and implementing the zoning process. Co-management of MCNP should

allow local communities to have access to protected areas and carry-out their decade-old traditional lifestyle (hunting and gathering), else the government could map-out part of the permanent forest areas and allocate it to local activities. Local communities' usufruct rights should be respected. Formal law limits local use rights leading to conflict between customary and state law and the link between communities and forest cannot be formally made without recognising customary claims.

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## 4 Assessing the interaction of REDD+ with family farming around Mt. Cameroon National Park

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*Keywords: Food production, Local communities, Improved livelihood, social safeguards, Family farmers.*

**Abstract** - Family farming systems play a major role in climate change mitigation, though, family farmers are often overlooked in government policies. Therefore, improved food security and adaptation capacity should accompany mitigation, but few studies have been done to examine how REDD+ project intersects with family farming in enhancing local livelihood in Cameroon. This study examines how participating in Mount Cameroon National Park (MCNP) projects relates to food production and livelihood of family farmers and also identifies constraints faced by family farmers in enhancing food production within MCNP-clusters. Cluster multi-stage random sampling was used to collect data from 259 respondents that were analysed using Chi-square, Mann-Whitney, t-test, Kruskal-Wallis, Jonckheere-Terpstra tests and NVivo. This study shows that all respondents are cultivating on croplands with 81% of respondents predominantly practising family farming. The main crops cultivated/harvested are plantains, cocoyams, vegetables, oil palms, cocoa, bush-pepper, njansanga and bush-mango with cash-crops production being the main form of income generation. The study found a significant relationship between participation in MCNP-activities and livelihoods in animal husbandry, plantation-worker; cultivation of groundnuts, egusi, maize, beans, vegetables, sugar-cane, tea and harvesting of kola-nuts. A decline in food production over the last five years is due to large scale projects and increase in market potentials. To increase benefits from products, local communities mainly seek to invest in planting food products, gain better access to markets, credit/capital and equipment/technology. The number of landholdings directly correlates with participation in MCNP activities and annual income also shows a direct relationship with landholding and labour force. Family farmers play a significant role in sustainable development and sustainability of MCNP-REDD+ initiatives that depend on the sustainability of crop production should be tackled conjointly to avoid leakage.

## 4.1 Introduction

Reducing Emission from Deforestation and Degradation (REDD+) is considered as having the potential to mitigate climate change and improve livelihood of local communities in forest ecosystems (Mustalahti et al., 2012; Minang & van Noordwijk, 2013), but there is fear that it will result to land grabbing and marginalisation of local communities as forest gets further commodified. It is assumed that local communities are keys to forest management and improving tenure security is crucial for carbon sequestration potential of a forest. Some REDD+ projects restrict access of forest dwellers to project area which are sources of carbon additionality and revenue, so conditional performance based compensation is applied as incentives to local communities.

Africans depend mostly on natural resources from forest and non-forest ecosystems. According to FAO (2009), 80% of all farms in Africa are managed by family farmers making a total of 33 million farms, on less than two hectares of land. The economic decision to convert forest into agriculture for improvement of livelihood might be a rational one; therefore, mitigation should be linked to rural development which aimed at sustaining life and at the same time reducing carbon emissions. The link between poverty, deforestation and reduction in CO<sub>2</sub> emissions is very critical to strike a balance between mitigating climate change, providing food security and improving livelihood. According to Ngendakumana et al. (2013), conversion of land for agriculture is a survival strategy which is also a source of carbon emissions (Neerly & Leeuw, 2012). Sunderlin (2014) also argues that one of the institutional levers for early tenure concern, is in “*response to a broad donor consensus predating REDD+*” which is important in assessing development and environmental target like poverty alleviation, local or regional economic growth and landowners resource and land investment strategies. Forest dwellers manage a greater portion of the world’s forest and therefore, should play a significant role in climate change mitigation and poverty alleviation strategies.

The basis of African food systems are family farmers providing food security and protecting natural resources and they have proven to be great innovators, developing

technologies controlled by them to benefit them (Goïta et al., 2013). Family farming plays a major role in sustainably managing natural resources, conserving/protecting ecosystems, providing food security, alleviating poverty, enhancing livelihood which are all geared toward sustainable development. This makes family farming to be at the centre of agricultural, environmental and socio-economic policies. Its activities include agriculture, forestry, fishery, animal husbandry and aquaculture which are owned, operated and managed by a family (men, women and children). It is the main form of agriculture in Cameroon, and rural communities have developed out of family farming.

Family farming occupies 97% of the agricultural workforce and account for 95% of food products in Cameroon (Zechariah, 2014). Agriculture and forestry also contribute to 20% of GDP and employ 62% of the active population (Massarenti, 2014). Thus, tenure needs to be addressed to enhance the capacity of family farmers in increasing food production in order to meet up with livelihood challenges and the millennium development goals. Family farmers contribute to climate change mitigation, therefore, improved food security and adaptation capacity should accompany mitigation (Wollenberg et al., 2012). Although they are major contributors to local livelihoods and wellbeing, family farmers are often overlooked in government policies. When family farmers control resources, it gives them an autonomy and resilience which is a necessity for sustaining family system of food provision. Thus, tenure needs to be addressed to enhance the capacity of family farmers in increasing food production to meet livelihood challenges and international commitments such as the Millennium Development Goals and the developing Sustainable Development Goals.

This study assesses how MCNP-REDD+ project intersect with family farming and food production around Mount Cameroon National Park villages by:

- Examining how livelihoods, food-crops, cash-crops and non-timber forest products produced within family farming systems all relate to participation in MCNP-activities;
- Examining the challenges faced by family farmers in increasing food production around MCNP;

- Identifying ways of increasing benefits from food production within family forestry;
- Investigating how size of landholding relates with participation in MCNP activities; and
- Identifying the factors influencing income/livelihood of family farmers.

## **4.2 Methodology (See 1.6)**

### **4.3 Results**

The family farming system around MCNP is made up of household, cropping, animal, soil and non-agricultural components which are all inter-related and influenced by external biophysical and socio-economic components such as size of landholding, labour, tenure systems, financial credit availability, farm-to-market roads, large scale project and increased market potentials. Family farmlands within MCNP are of three types: home gardens, cash-crop plantations and farm-land (shifting cultivation food-crop field). Swamps and bottom of valleys (Lamba) are also used during the dry season for off-season production.

Ten major food-crops may be grown in association in the food-crops fields while cash-crops are grown mostly in plantations and NTFP are harvested from the forest. The main food-crops are planted in both home gardens and as farm land; cash crops are cultivated mostly in plantations while NTFP are mostly from the permanent or managed forest. Home gardens are easily accessible as being close to home and are often composed of domesticated forest trees like kola-nuts, fruits (plums, mangoes, oranges, grapes and guavas,), food-crops (cassava, banana, plantains and cocoyams) and domestic animals (goats, pigs, chicken, dogs and cats). Harvesting within family farms is done manually. Most of the harvests are for family consumption while surpluses are sold and the rest are kept as seeds for the next planting session. Processing of local food is also done manually, though cost efficient, it consumes much time and lacks effective method for preservation.

### 4.3.1 Relationship between participation and livelihoods

This study shows that all respondents are practising family farming - cultivating food-crops on croplands. While 81% of park-villagers are predominantly practising family farming, 11% are involved in business selling mostly farm products, 4% work as civil servants and 4% as plantation workers (Fig. 4.1a). Cash-crop production is the major source of livelihood followed by harvesting of NTFP, business, timber, fishing and animal husbandry. While Bomboko and Muyuka derive their livelihood from mainly cash-crops, West-Coast takes a lead in NTFP, animal husbandry, fishing and plantation workers. Hunting is predominantly carried out in Muyuka, and Bomboko is highly involved in timber harvesting while the Buea cluster is also predominant with civil-servants and businessmen. The study shows that those effectively participating (>50%) in MCNP are those carrying out animal husbandry, plantation workers and civil-servants (Fig. 4.1b). Result shows significant direct relationships between participation in MCNP-activities and main livelihood in animal-husbandry ( $\chi^2=5.054$ ,  $p=.025$ ) and as plantation-worker ( $\chi^2=3.920$ ,  $p=.048$ ). A significant direct relationship is also registered in West-Coast for plantation-workers ( $\chi^2=5.953$ ,  $p=.015$ ), while a significant inverse relationship is recorded for business-men ( $\chi^2=4.580$ ,  $p=.032$ ) in Bomboko.

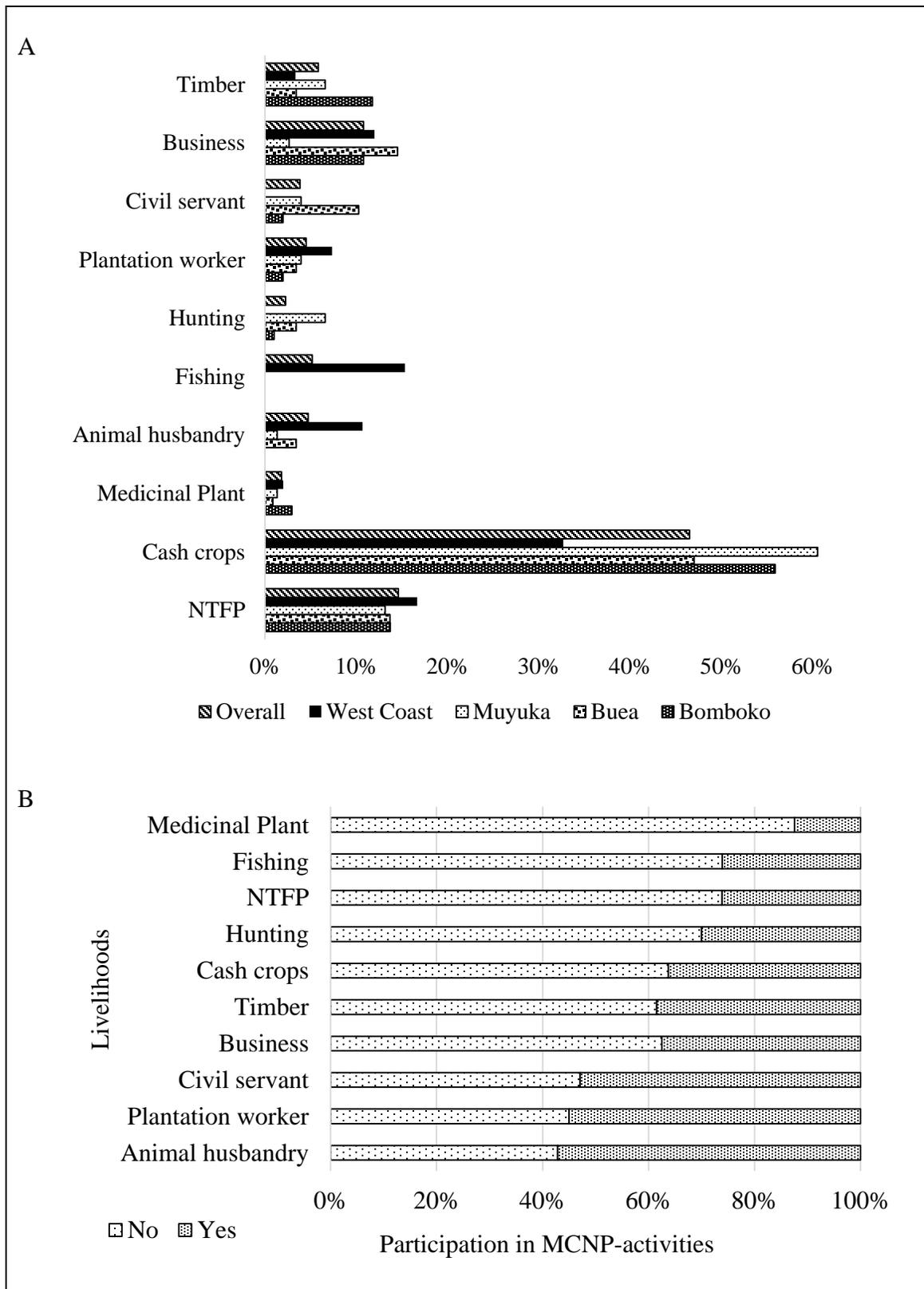


Figure 4.1: Percentages of main livelihoods within MCNP-clusters (a) and relationships between livelihoods and participation in MCNP-activities (b).

The seven main food crops (Fig. 4.2a) cultivated in MCNP villages include plantains, cocoyams, vegetables, cassava, banana, yams and maize. Plantains, groundnuts and egusi are predominantly produced in Muyuka; while cocoyams and banana are highly cultivated in Buea. Bomboko takes a lead in vegetable and potatoes production while production of maize, fruits, cassava, yams and beans are high in West-Coast. Results shows that participation in MCNP-activities was significantly related to cultivation of groundnut ( $\chi^2=39.951$ ,  $p<.0001$ ), egusi ( $\chi^2=24.601$ ,  $p<.0001$ ), beans ( $\chi^2=12.178$ ,  $p<.0001$ ), maize ( $\chi^2=4.457$ ,  $p=.035$ ) and vegetables ( $\chi^2=5.519$ ,  $p=.019$ ) (Fig. 4.2b).

Results show significant direct relationships between participation in MCNP-activities in Bomboko for cultivation of vegetables ( $\chi^2=7.327$ ,  $p=.007$ ) and egusi ( $\chi^2=6.491$ ,  $p=.011$ ); in Buea for cultivation of maize ( $\chi^2=6.721$ ,  $p=.010$ ), groundnut ( $\chi^2=12.599$ ,  $p<.0001$ ) and beans ( $\chi^2=7.592$ ,  $p=.006$ ); in Muyuka for cultivation of groundnuts ( $\chi^2=8.199$ ,  $p=.004$ ) and egusi ( $\chi^2=6.533$ ,  $p=.011$ ); and in West-Coast for cultivation of groundnut ( $\chi^2=14.804$ ,  $p<.0001$ ) and egusi ( $\chi^2=15.358$ ,  $p<.0001$ ). The study also registered significant inverse relationships between participation in MCNP-activities in Buea for cultivation of plantains ( $\chi^2=6.969$ ,  $p=.008$ ) and in West-Coast for cultivation of cassava ( $\chi^2=5.913$ ,  $p=.015$ ) and banana ( $\chi^2=8.00$ ,  $p=.005$ ). All other relationships were non-significant.

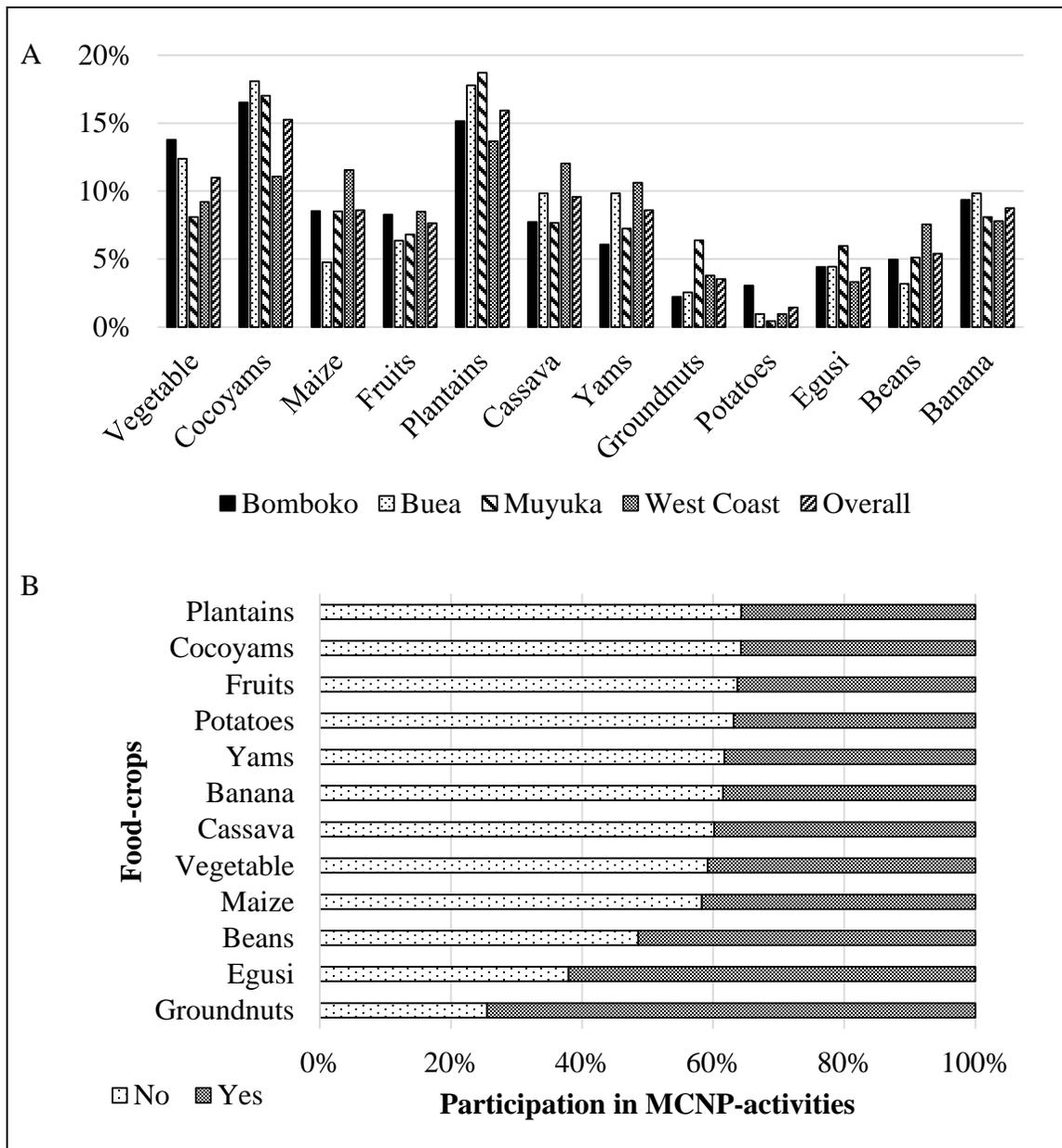


Figure 4.2: Percentages of main food crops cultivated within MCNP-clusters (a) and how these relate to participation in MCNP-activities (b).

Figure 4.3a shows that oil palms and cocoa are the main cash crops cultivated within MCNP-clusters. Sugar-cane is also cultivated in Bomboko, Buea and West-Coast while tea, coffee and rubber are cultivated in Buea. The study shows a direct relationship between participation in MCNP-activities and cultivation of sugar-cane ( $\chi^2=12.441$ ,  $p<.0001$ ) and tea ( $\chi^2=4.228$ ,  $p=.040$ ), but an inverse relationship with cocoa cultivation ( $\chi^2=4.328$ ,  $p=.038$ ) within all clusters (Fig. 4.3b). In West-Coast, participation is also

directly related to sugar-cane cultivation ( $\chi^2=7.270$ ,  $p=.007$ ). In Buea, participation directly correlates with sugar-cane ( $\chi^2=7.839$ ,  $p=.005$ ) and tea ( $\chi^2=5.868$ ,  $p=.015$ ) cultivation, but inversely related to palms cultivation ( $\chi^2=7.728$ ,  $p=.005$ ).

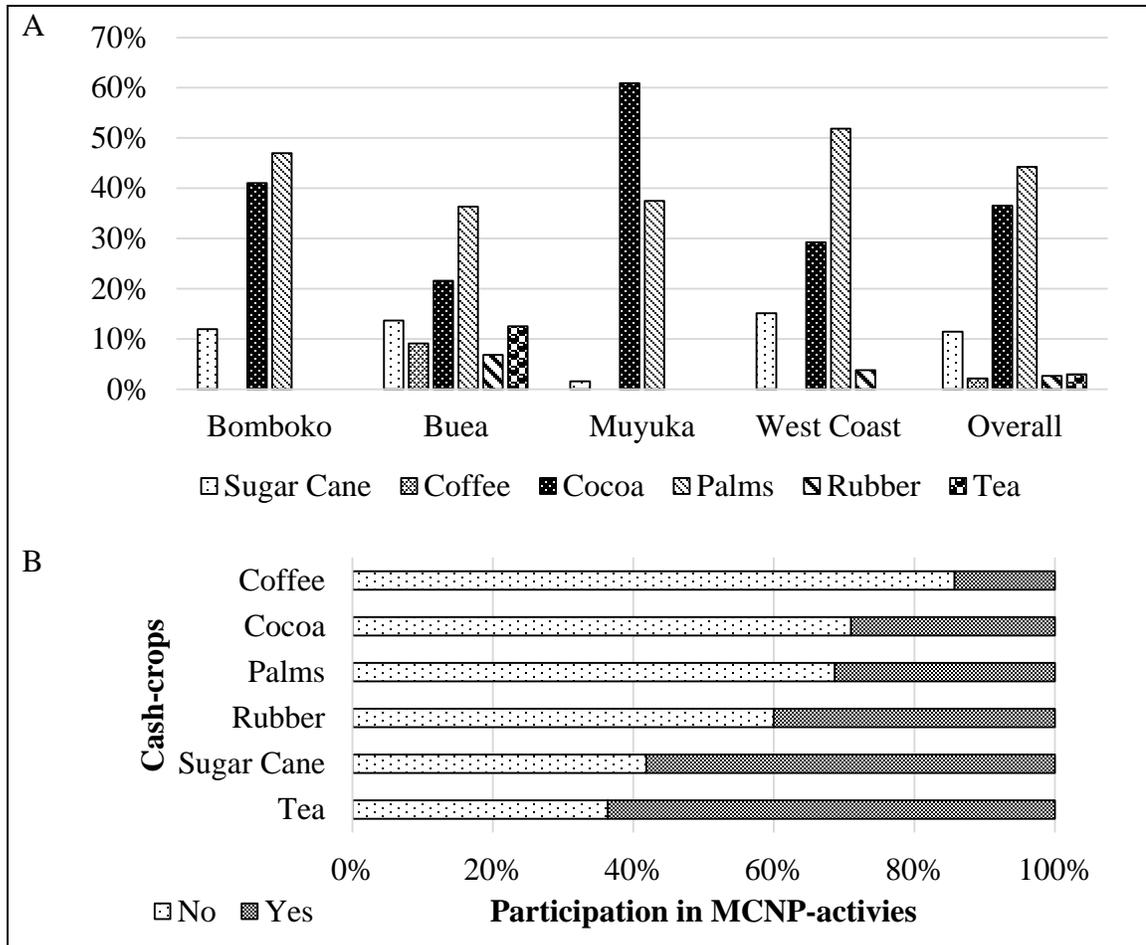


Figure 4.3: Percentages of main cash-crops cultivated within MCNP-clusters (a) and how these relate to participation in MCNP-activities (b).

Apart from *Prunus africana* which is now sustainably harvested by Mount Cameroon *Prunus* Common Initiative Group, figure 4.4a shows that the major NTFP harvested are njansanga, bush pepper, bush mango, eru, casu and kola-nuts. Three major NTFP in Bomboko are njansanga, bush-pepper and bush-mango while in Buea we have njansanga, eru and kola-nuts. In Muyuka and West-Coast, we have bush-pepper, njansanga and bush-mango. The study shows a direct relationship between participation in MCNP- activities and cultivation of kola-nuts ( $\chi^2=35.086$ ,  $p<.0001$ ) in MCNP-clusters as well as in Bomboko ( $\chi^2=11.902$ ,  $p=.001$ ), Buea ( $\chi^2=7.839$ ,  $p=.005$ ), Muyuka

( $\chi^2=5.168$ ,  $p=.023$ ) and West-Coast ( $\chi^2=10.681$ ,  $p=.001$ ). The study also reveals an inverse relationship for participation in MCNP-activities and cultivation of bush-mango in Buea ( $\chi^2=4.961$ ,  $p=.026$ ) (Fig. 4.4b). All other relationships are non-significant.

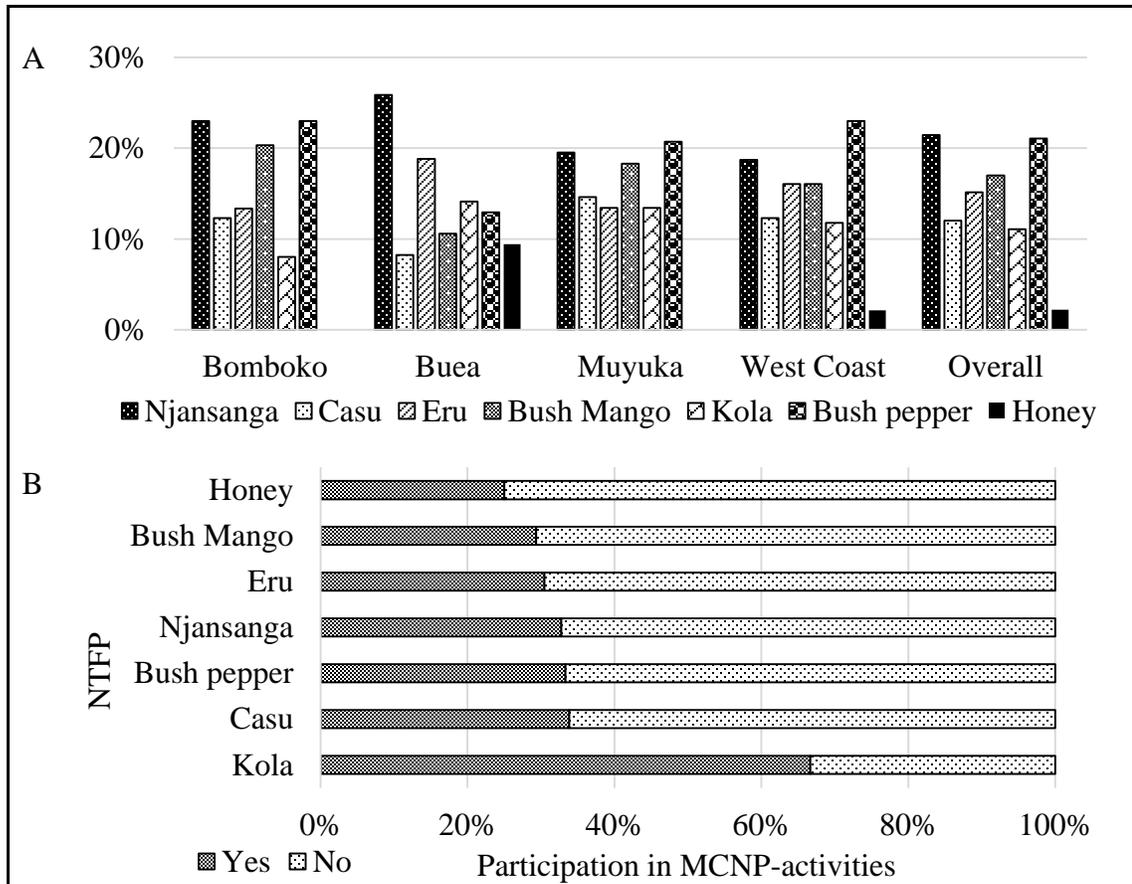


Figure 4.4: Percentages of main NTFPs harvested within MCNP-clusters (a) and how these relate to participation in MCNP-activities.

### 4.3.2 Livelihood challenges faced by family farmers

The production of food-crop is declining within MCNP-clusters since 2009 as a result of increase in large scale projects such as infrastructure and plantations; increased market potentials due to population growth and outsiders, whose land purchase for exploitation further restricts access to local communities (Fig. 4.5a). In the West-Coast, both large scale projects and influx of outsiders buying land contribute to overall decrease in production. Result shows an increased use by non-settlers, increased use by local people and government restriction on land in Buea.

The three main actions needed to increase the benefits from food-crops includes increase cultivation of products, better access to credit/capital and equipment technology to increase yield and better access to market and reduced price risk in MCNP-clusters as well as in each cluster (Fig. 4.5b). Bomboko seeks better protection/avoid overuse of products while Buea wishes a better access to the forest for agriculture and development of forest users group for collective harvesting of products.

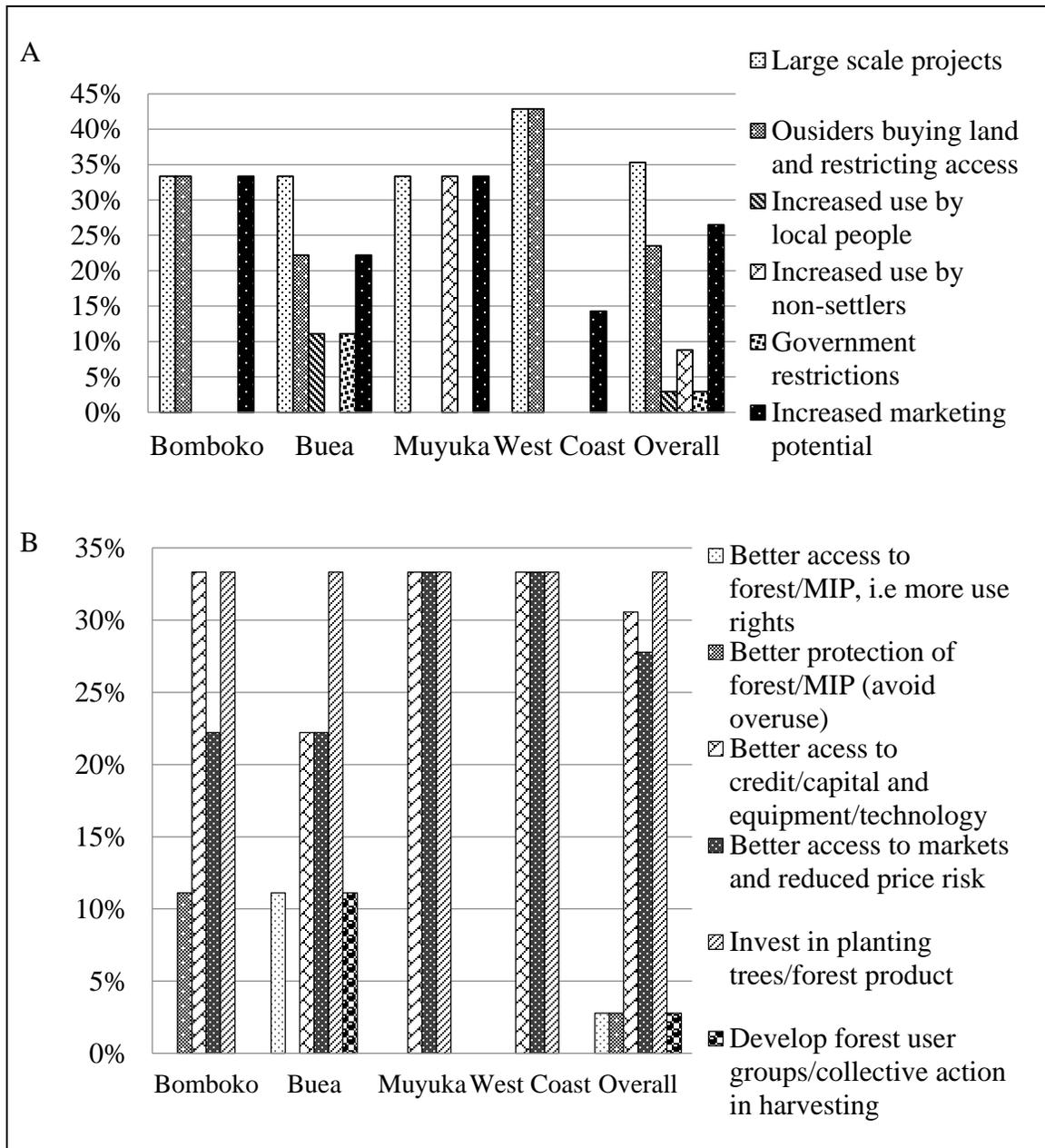


Figure 4.5: Percentages of reasons for the decrease in food production (a) and ways to increase benefits from food (b) within MCNP-clusters.

Other challenges faced by family farmers in enhancing food production include energy availability to process and store food, formal/informal credit/capital to invest in equipment technology and improve farm-to-market roads (Fig 4.6). The study shows that only West-Coast members have access to formal credit. The participatory villages in Muyuka have neither electricity nor formal/informal credit to invest in food production with poor roads-to-market. The average distance to the nearest district market where farm products are sold are 34km (Bomboko), 6km (Buea), 10km (Muyuka) and 26km (West-Coast).

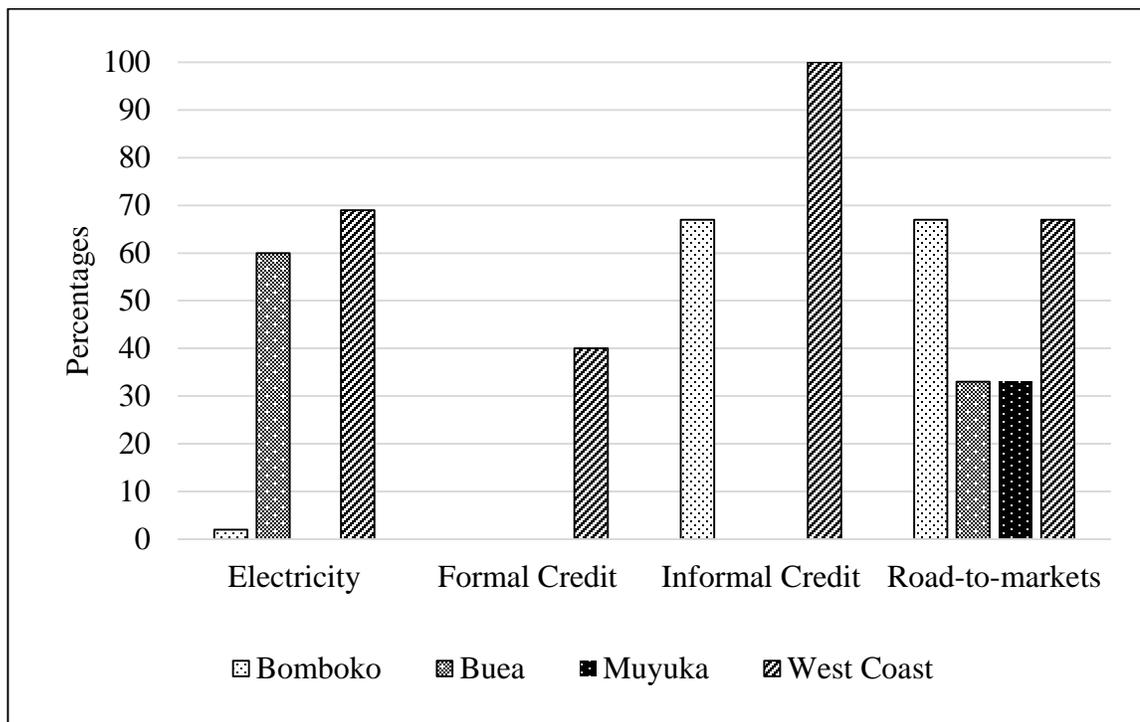


Figure 4.6: Challenges faced by family farmers in enhancing food production within MCNP-clusters.

### 4.3.3 Relationship between participation and landholding/annual income

The study shows that participation is significantly related to number of landholding within MCNP-clusters  $\chi^2(4) = 37.644$ ,  $p < .0001$ .

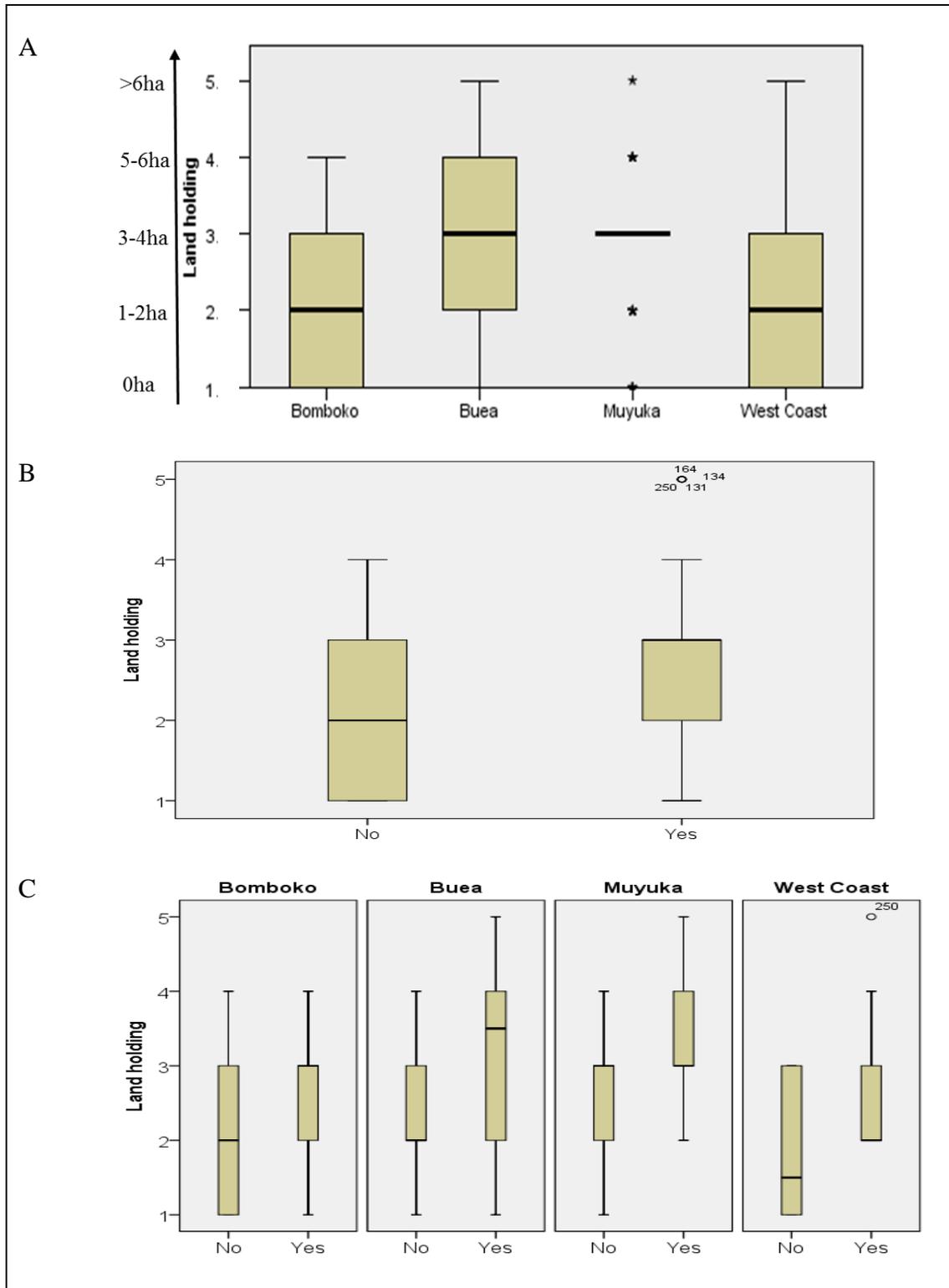


Figure 4.7: Kruskal-Wallis plot showing variance in landholding within clusters (a), t-test plots showing relationship between number of landholding and participation in MCNP (b) and within different clusters (c).

A kruskal-wallis test shows a significant difference between landholding in different clusters  $H(3)=24.106$ ,  $p<.0001$  (Fig. 4.7a) with a non-significant trends  $J=12174$ ,  $p=.633$ . Follow-up pairwise comparison shows significant differences between West-Coast and Buea ( $H=38.162$ ,  $p=.009$ ,  $r=.266$ ), West-Coast and Muyuka ( $H=54.09$ ,  $p<.0001$ ,  $r=.369$ ), Bomboko and Buea ( $H=-33.035$ ,  $p=.046$ ,  $r=-.231$ ), and Bomboko and Muyuka ( $H=-48.962$ ,  $p=.002$ ,  $r=-.058$ ).

Landholding is not normally distributed ( $p<.05$ ) (Table 4.2a). A Mann-Whitney U test shows that participation in MCNP activities is significantly related to number of landholding ( $p=.001$ ,  $r=.30$ ) as well as in Bomboko ( $p=.019$ ,  $r=.289$ ), Buea ( $p=.017$ ,  $r=.289$ ), Muyuka ( $p=.023$ ,  $r=.325$ ) and West Coast ( $p=.001$ ,  $r=.336$ ). The t-test shows a significant difference in landholding between non-participants and participants in MCNP activities' groups (Fig. 4.7b, Fig. 4.7c). Result reveals a significant correlation between participation and number of landholding ( $T=-5.507$ ,  $df=257$ ,  $p<.001$ , 95% BCa CI  $(-.944, -.447)$ ) as well as in Buea, Bomboko, Muyuka and West-Coast (Table 4.2b)

A regression analysis model (Table 4.3) to investigate how size of landholdings (L) influences participation (P) shows a direct correlation between landholding and participation in all clusters and also within each cluster. These models are explained by the following significant regression analysis equations:

- **Overall:**  $P=.981 + .325(L)$
- **Bomboko:**  $P=.928 + .294(L)$
- **Buea:**  $P=1.001 + .308(L)$
- **Muyuka:**  $P=.854 + .354(L)$
- **West-Coast:**  $P=.953 + .385(L)$

Where  $P$ =Participation and  $L$ =Size of landholdings

The study also shows a significant direct relationship between size of landholding and livelihood as cash-crops cultivators ( $\chi^2(4)=60.308$ ,  $p<.0001$ ), civil servant ( $\chi^2(4)=17.981$ ,  $p=.001$ ), NTFP-harvester ( $\chi^2(4)=13.346$ ,  $p=.010$ ) and plantation-worker ( $\chi^2(4)=9.750$ ,  $p=.045$ ); cultivation of food-crops like vegetables ( $\chi^2(4)=11.387$ ,  $p=.023$ ),

cash-crops like tea ( $\chi^2(4)=24.813$ ,  $p<.0001$ ) and NTFP like kola-nuts ( $\chi^2(4)=11.959$ ,  $p=.018$ ). All other relationships are non-significant.

Annual income significantly relates to landholding ( $\chi^2(16)=83.635$ ,  $p<.0001$ ) and labour ( $\chi^2(20)=36.715$ ,  $p=.013$ ). The linear regression models show that annual income is dependent on number of landholding and labour ( $F=29.926$ ,  $p<.0001$ ) within MCNP-clusters with a small fit of 18% (Table 4.4). Also in Bomboko ( $F=10.179$ ,  $p<.0001$ ), Buea ( $F=9.046$ ,  $p<.0001$ ), Muyuka ( $F=9.179$ ,  $p=.004$ ) and West-Coast ( $F=3.691$ ,  $p=.030$ ) with a small fit of 22%, 19%, 15%, and 7% respectively. The regression models show that size of landholding (L) has the highest predictor impact on annual income (AI) and the models are explained by the following significant equations;

- **Overall:**  $AI=.9 + .394(L) + .106(l)$
- **Bomboko:**  $AI=.661 + .474(L) + .059(l)$
- **Muyuka:**  $AI=1.094 + .404(l)$
- **West-Coast:**  $AI=1.697 + .207(L) + .154(l)$

Where AI=Annual income, L=Size of landholdings and l=labour

Results also show significant direct relationships between annual income and main livelihood as civil-servants ( $\chi^2(4)=28.191$ ,  $p<.0001$ ), food-crops like egusi ( $\chi^2(4)=12.541$ ,  $p=.014$ ), maize ( $\chi^2(4)=17.076$ ,  $p=.002$ ) and vegetables ( $\chi^2(4)=9.764$ ,  $p=.045$ ); cash-crops like sugar-cane ( $\chi^2(4)=10.384$ ,  $p=.034$ ); and NTFP like njansanga ( $\chi^2(4)=14.717$ ,  $p=.005$ ) and honey ( $\chi^2(4)=19.889$ ,  $p=.001$ ) harvesters.

#### 4.3.4 Qualitative results

Interviewees talked mostly about forest, farm and crops (Fig. 4.8a) from where three themes were been deduced: Cameroon forestry law (A), community forest activities (B) and farms food-crops (C). Table 4.1 and figure 4.8b further show the types of comments across different levels of stakeholders.

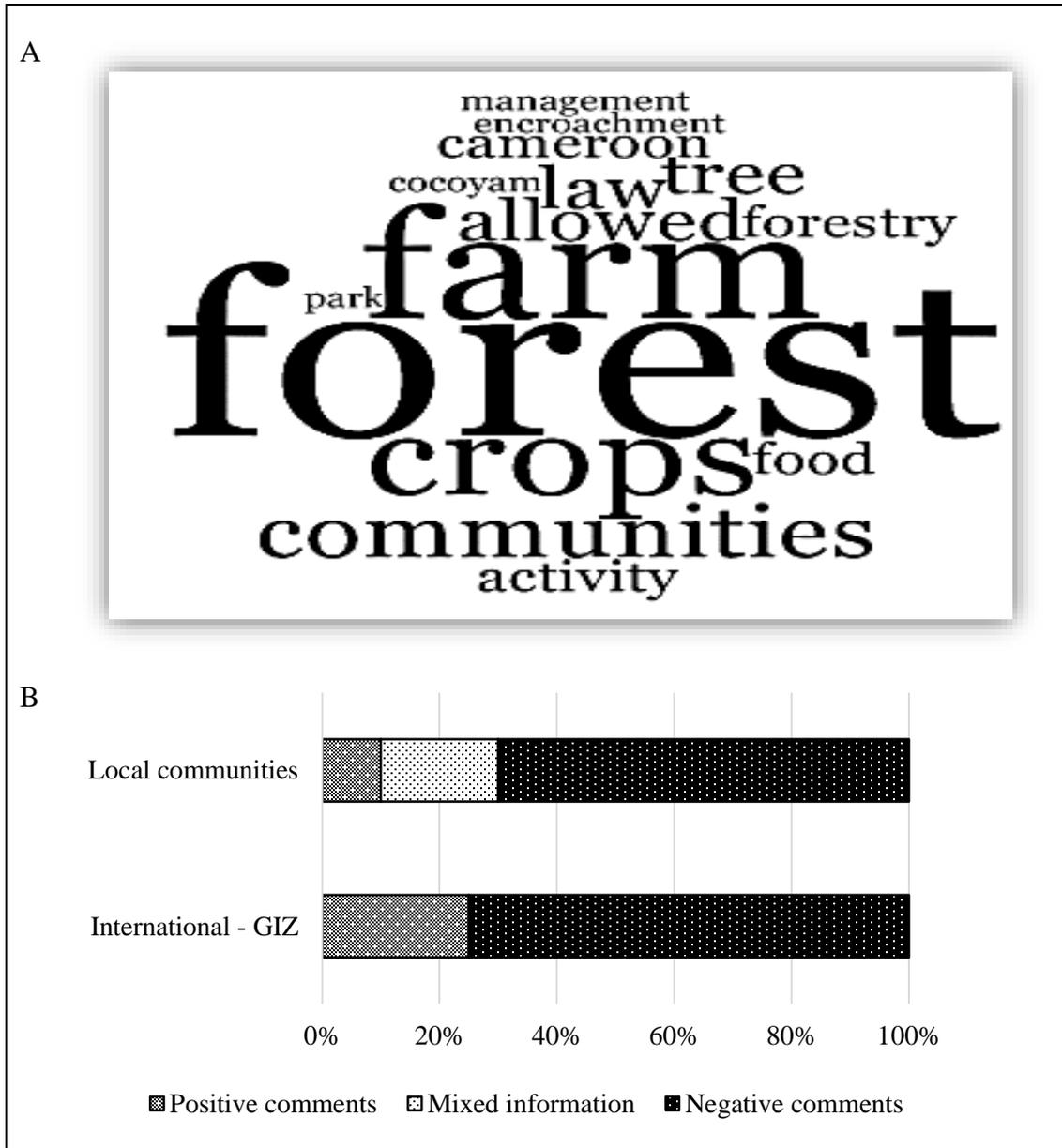


Figure 4.8: Word clouds showing most mentioned words from the interviewees (a) and types of comments provided by different levels of stakeholders (b) on family farming issues around MCNP.

#### **4.3.4.1 Cameroon forestry law**

Though GIZ tries to improve understanding of forestry law within local communities, they are still concern with the complex nature of this forestry law, which is practically impossible to implement. Family farmers are also concerned with the restriction aspects of the law.

GIZ: *“We are trying to sensitise the community (about forestry law) through every activity that we had.”*

GIZ: *“The Cameroon Forestry Law is so complex and complicated and not feasible in the field. It is not practically feasible. So sometimes, it does not encourage the people to follow it because it is impossible.”*

LC: *“Before the Mount Cameroon project we used to hunt right up to the forest, but now the law is restricting us...”*

#### **4.3.4.2 Community forest activities**

While the GIZ respondent thinks that members of West-Coast are not planting trees, communities are concerned about the need of permit to carry out their family farming activities in the forest.

GIZ: *“West-Coast is more of a fishing community and is not planting (trees).”*

LC: *“We need a permit to conduct any activity in the forest...”*

LC: *“We are planting trees and also cutting down trees.”*

#### **4.3.4.3 Farms and food crops**

The GIZ respondent blames encroachment to lack of livelihoods alternatives while local communities raise concerns about destruction of farms crops by animals from the park, long distance to markets and reduction in provision of forest products.

GIZ: *“Most of them lack alternatives for food provision....”*

LC: *“They ask us not to kill animals in this mountain, but these animals are destroying a lot. Chimpanzees and elephants are destroying all our crops.”*

LC: *“We sell our crops in Buea and Muea market which is very far from here.”*

LC: *“We plant crops like cassava, potatoes, cocoyams... in our farms and we harvest njangsanga, eru, ogwono (bush mango)... from the forest.”*

LC: *“We have only private farms where we farm....”*

LC: *“We need food, firewood and timber from the forest.”*

LC: *“The most important product from the forest is fire-wood and food, but they are reducing because of climate change.”*

LC: *“The crops are not doing well because we have more raining season than dry season.”*

#### **4.4 Discussion**

Climate change without potential for adaptation, negatively impact food production for a local temperature rise of 2°C, and decline in crop production in Africa affects livelihood and food security (IPCC, 2014). Therefore, there is need for access to credit and production resources for family farmers, institutional support for sustainable agriculture, agronomic and technological adaptation and livelihood diversification to reduce vulnerability. Africa registers the highest proportion of people facing food insecurity in the world (FAO, 2010). To meet-up with the challenges of poverty and environmental sustainability, foreign technologies innovations have resulted to short term gains in yields at the expense of long-term degradation of soil, water, biodiversity and non-cultivated land, so there is need to redirect research towards enhancing adaptive capacity by integrated participatory approach across stakeholders, scales and disciplines (Sayer & Campbell, 2003). The Convention of Biological Diversity (CBD) and the Consultative Group for International Agricultural Research (CGIAR) research centre argue that family farming system is more sustainable and resilient in confronting climate change challenges, though, there are concerns of meeting the Millennium Development Goals with 70% of Africa’s population relying on subsistence farming (Sayer, 2010).

#### **4.4.1 Main livelihood and food production systems**

The role of sustainable family farming is crucial in creating jobs and enhancing local economies while providing ecosystem services for improved livelihood. Family farming supports livelihood and wellbeing of communities through production of food for households, sale of surpluses and value addition. It is oriented to sustainably maximise value and maintain natural resources. It should be noted that even businesses within MCNP deals with sales of farm products, thereby, creating jobs for youth. The mixed cropping practises within MCNP is beneficial in maximising production in small area of land, ecological interaction, risk management, plant nutrition, and human nutrition (Christine, 2013). Home gardens also play an important role in diversifying food-crops and conserving useful plant species threatened by forest exploitation. Although crops destruction by domestic animals remain a major threat to home gardens, it continuous supply of food to families makes this farming system indispensable. In Tanzania, agricultural activities carried out at the bottom of valleys (Lamba) contribute to 15% of food provision and 55-95% of annual household income, thereby, significantly enhancing livelihoods, food security and biodiversity (Munishi et al., 2011). Therefore, crop cultivation in swamps and Lambas should be encouraged.

Food insecurity is one of the greatest challenges within the MCNP-clusters and is resulting in conflict between state and family farmers as well as between private owners and family farmers. Forest and customary farming systems play an essential role in food provision, improved livelihood and wellbeing of local communities, and above all sustainable development. There is need to provide alternatives to climate change like training in animal husbandry and providing jobs in civil service or agro-forestry for provision of alternative livelihoods.

#### **4.4.2 Livelihood challenges faced by family farmers**

Access to land, water, energy, seeds and agricultural biodiversity within local territorial control are fundamental for family farmers (Goïta et al., 2013). Insecure land tenure systems have resulted to land grabbing for large scale projects; like the MCNP REDD+ projects and the Cameroon Development Cooperation (plantation); which has led to

steady decline in food production. Other contributing factors include increased market potential of products as a result of population increase and increased use by outsiders. According to Green et al. (2012), population pressure is a better variable than anthropogenic pressure for predicting protected area management costs and should be used in scenarios of population growth and migration areas like MCNP. The native animals and crops species that are preserved by family farmers form a rich diversified productive resource. Though access to energy (electricity) is low within MCNP-clusters, access to alternative sustainable energy sources could enhance their livelihoods. There is need for local energy provision like small-scale solar projects and improved cooking stoves to improve livelihoods and local food system.

*"Coming together in forest and farm producer organisations can help overcome their isolation as well as other very real constraints such as lack of secure forest tenure and financial and business development instruments"*, said FAO Forestry Officer, Jeffrey Campbell. *"They must compete with large-scale businesses that often receive preferential treatment, access to markets, financing and resources"* (EC, 2010). Forest enterprises and forest users groups can be a viable option in influencing policymakers and support at discussion tables while alleviating poverty and improving forest-dependent livelihood. Family farmers need to have control over financial resources generated by them, but tenure clarification is key to equitable benefit-sharing. The lack of access to formal and/or informal credit (especially women) to family farmers can exploit and trap them into debt. There is need for family farmers to be organised into associations to produce, process and market their products and enhance their ability to access credit/funds thereby, reducing individual competition with large scale farmers.

Lack of farm-to-market roads hinders farmers' ability to market their surplus production. Family farmers, especially women still struggle on narrow path to and from the farms, carrying about 35kg of cassava, yams or cocoyams basket on their backs or heads. Though increasing market potential of products has resulted from food shortages within the park villages, some crops get abandoned in the farms due to lack of transport facilities. To avoid this risk, some farmers even sell their crops on the farms, but when transformed and safely stored, it makes a huge difference in profit. Demand and supply

is the backbone of any economy. Market infrastructures and facilities need to be developed. Park villagers are seeking for better access to market and reduce price risk of products. Better education/skills, infrastructure and access to market enable agricultural strategies that best fit their needs and enhance family farmers' adaptive capacity to climate change. Farmers will be able to deal with bad cropping seasons if they can accumulate capital in good times (Walker et al., 2010).

Large scale projects are mostly operated by outsiders some of whom buy large areas of land and restrict access. These factors accompanied by increased use of products by outsiders have resulted in food scarcity. Around 1960, chiefs welcome settlers to settle in their territory providing labour force in cultivating large area of land, with the scarcity of land, migrants are no longer welcome. Migration is due to population growth and livelihood challenges (Grimault, 2010) which now attract people to fertile land for cultivation. The state might have failed in predicting demographic changes. Population growth exerts pressure on communities making food security a priority, so agricultural techniques should be enhanced. There is need to check the implementation cost of forest conversion aimed at addressing the problems of leakage, by enhancing agricultural yield on already existing cropland (Fisher et al., 2011), therefore, innovative technological improvement for enhance crops production should be encouraged. There is need for improved agricultural skills and technology to enhance production and feed the growing population. Communities are seeking more access to forest especially in Buea, for harvesting of food products.

Better skills and knowledge to harvest products and process foods are needed to ensure sustainability of family farmers. The Buea community hopes to establish enterprises or forest users groups with training on sustainable agro-forestry centred on building of sustainable production/harvesting systems that meets the growing demand of products. We need to radically shift from the corporate top-down control systems to approaches that allow more responsibility and decision-making powers to local farmers, and research should be based on specialist and local knowledge which enhance autonomous learning and actions which give more transparent oversight (Michel, 2007). A combination of indigenous knowledge on agriculture and modern agro-forestry,

livestock rearing and fishing techniques have the potential to substantially increase productivity on small pieces of land.

#### **4.4.3 Annual income's relationship with landholding and labour**

From the regression analysis, size of landholding significantly correlates to participation in MCNP-activities ( $p < .05$ ). Therefore, securing farmland for food cultivation instead enhances participation. Family farmers turn to support REDD+ initiatives when there is food security and local livelihoods are not impaired. There is need to balance human livelihood needs and conservation for sustainability of MCNP-projects. Annual income also directly correlates to number of landholding and labour force (household size). For conservation to succeed, the livelihood of the local population who depend on natural resources should be a main priority in REDD+ strategies.

This study shows that providing alternatives to climate change like training in animal husbandry and jobs in agro-forestry/civil-service will enhance participation in MCNP-activities. While cultivation of groundnut, egusi, maize, beans, vegetables, sugar-cane, tea and harvesting of kola-nuts enhances participation in MCNP-activities; cultivation of cassava, plantains, banana, palms, cocoa and bush-mango harvesting discourage involvement in MCNP-activities because they do better in newly established farms. Civil-servants, plantation-workers, kola-nuts harvesters and cultivators of vegetables and tea have larger size of landholding and more involvement in MCNP-activities while civil-servants and cultivators of egusi, maize, vegetables and sugar-cane also earn high annual income with significant involvement in MCNP-activities, therefore, these activities enhance livelihood as well as engagement in MCNP-activities.

#### **4.5 Conclusions and recommendations**

Family farming enhances food production, socio-environmental sustainability and safeguards livelihood for many communities. Therefore, it plays a significant role in the sustainability of the REDD+ initiative which depend on sustainability of crop production and should be tackled jointly to avoid shifting cultivation. Forest management strategies need to be ecologically sound, socially acceptable, technically

feasible and economically viable to improve livelihood and well-being which are all geared toward sustainable development. Though the government failed to predict demographic pattern during the creation of the National Park, migration trends, population growth, restricted access to park, large scale projects and land grabbing may lead to expansion of agricultural land in other areas (leakage).

Increase in market potential of products, population growth and large scale infrastructure have significantly influenced agricultural pressure on forest land. Therefore, sustainability of crop production should be carefully evaluated before carrying out REDD+ activities. Restricted access to large scale project areas and extension of state owned plantation and Cameroon Development Cooperation which is also giving a one-off financial compensation to forest dwellers, have left family farmers with less land for agriculture. There is need to reposition and embed the role of family farming into national socio-economic policies by identifying gaps and opportunities to enhance equity in development. Knowledge sharing on agricultural techniques as well as inclusion of forest users group in forest policies may enhance food production within MCNP. Incentives should be given to support family forestry and facilitate networking between farm enterprises. Family forest and farm enterprises should have access to financial credit to improve agricultural techniques and negotiate fair market prices while states should improve farm-to-market roads.

Food security should be linked to climate change and poverty reduction initiative, such as REDD+, because forest and farm products provide basic livelihood for forest dwellers and enhance sustainable use of natural resources, allowing family farmers to collect, process and market a variety of products. This provides a climate-smart alternative to improve the resilience of forest dwellers to climate change while decreasing vulnerability of forest dwellers to climate change. Family farmers play a significant role in sustainable development because they sustainably use natural resources; develop production techniques that are adapted to their limited resources to produce enough to feed their families and sell surpluses to cities; provide jobs and maintain youth in villages through transportation and wholesales marketing of food products to cities; use of environmentally friendly tools with less devastating effect to

fauna and flora; deliberately protecting some tree species in home gardens; provide social peace by resolving land conflict (since family farms are handed over from one generation to another); extend friendly social relationship between families through 'Njangi (working in each other farms in turns); and above all support and participate in MCNP-REDD+ projects. Sustainable forestry projects like the MCNP conservation projects should support ecological, adaptive, bio-diverse, and resilient models of agriculture that value family farmers, improve livelihoods and build on local knowledge and skills. A holistic approach is required to mitigate and adapt to climate change; and critical understanding of the socio-economic relation with forest cover loss and the role of family farmers will enhance the fulfilment of REDD+ social safeguards and social disconnect in Cameroon.

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## **5 Examining forest governance policies and regulations enforcement within Mt. Cameroon National Park REDD+ projects**

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*Keywords: Forest legislation, Mount Cameroon, Local communities, Customary Law, Social safeguards, REDD+*

### **Abstract**

Knowledge of Cameroon's forest policies regulations and effectiveness of law enforcement are necessary to assess local involvement, evaluate effectiveness of schemes aiming for reduction in emissions and quantification of carbon stock, but few studies have been done to examine the extent to which local communities interact with forest legislation. This study identifies how local communities' level of involvement in policy-making affects engagement in MCNP-projects. It further evaluates the effectiveness of law enforcement within MCNP and examines the contribution of land-rights to participation. Cluster multi-stage random sampling was used to collect data from 259 respondents that were analysed using Chi-square, Mann-Whitney, t-test, ANOVA, Kruskal-Wallis, Jonckheere-Terpstra tests and NVivo. Results show that the government decides forest policies, but local communities' engagement in deciding policies would enhance local participation in MCNP-activities. There are state rules and customary rules regulating exploitation and use of timber and *Prunus*, which are both enforced and respected with requisite permission for exploitation. The memorandum of understanding is also respected, except within the West-Coast cluster. Result shows a direct correlation between perceptions of enhanced land-rights and participation in MCNP-activities. Sustainability of the MCNP-REDD+ projects requires state and customary rules/regulations with enhanced governance framework that recognises local communities' rights over land, enhances local capacity to engage in deciding forest policies, claims ownership of project and enhances local engagement in conservation projects.

## 5.1 Introduction

*“Even if REDD+ doesn’t bring the money, let it bring good governance”* (Augustine 2013). We just cannot talk about rights and effective tenure without governance because tenure is conditioned by and relies on it. Supportive policy and institutional systems in support of wise forest management without forest use rights may be wasted and so too, rights without effective sanctions is insufficient. Securing tenure, traditional rights, community access to and control of natural resources are keys to rural poverty reduction. Local communities require effective sanction and disempowerment of forest defaulters plus ability to develop enterprises and self-determination to be able to defend their rights. The old classic conservation strategies favouring ecological and economical dimensions have had little social impact on local settlements (Minang & van Noordwijk, 2013) because it undermines societal norms, values and cultural differences that might have influence on biodiversity of protected areas. While local communities are being blamed by government for deforestation, the same government is also accused of establishing a top-down policy which depletes the forest. To solve these issues, there is need to merge both conservation strategies and policies involving full participation of indigenous people, thereby, creating a better tenure security and benefit-sharing amongst all stakeholders (Hoang et al., 2013).

According to Foundjem-Tita et al. (2013), most state policies in Cameroon address agro-forestry and tree planting, but strategic legislation that are formulated to enforce policies often contradicts poverty reduction goals. The result of their studies showed that some conservation measures aimed at protecting forest products from being exploited instead discouraged farmers from planting trees. Thus, policies are now working in a zigzag manner, especially when the farmers are not responding to legislation with expected behaviour, resulting in the government getting unexpected results (Parker et al., 2014). The state needs to learn from these issues and re-develop appropriate national REDD+ policies and these policies should be adapted to local needs. But linking up local information and state data requires state willingness to transform governance with enhanced equity and transparency (Sikor et al., 2010; Doherty & Schroeder, 2011). REDD+ provides a framework for improved community forest governance,

management, livelihood and forest enterprise activities as well as equitable benefit-sharing to meet communities' developmental needs.

According to Enchaw (2011), one of the greatest reasons that indigenous people do not participate in sustainable forest management in Cameroon is 'monism' of tenure; and that mistaken policies are to be blamed for aggravated depletion of forests. Cameroon forest have a public utility statute and the present tenure system has eschewed the traditional tenure system and failed in recognising land rights and forest resource rights of local communities. Additionally conservation framework has not integrated the positive traditional tenure system and conservation strategies. Free, Prior and Informed Consent (FPIC) is a human phenomenon, so that non-integration of local communities in conservation process dissuades them from participating.

Although the local communities are paying the price of conservation, international institutions, states and NGOs still consider climate change/forest conservation as issues that need only technical and regulatory solutions originating outside indigenous peoples (Enchaw, 2011). Solutions that bring with them radical and fundamental changes in socio-political structure, technology, economic systems and methods of regulations that do not always conform to indigenous peoples and local communities. These solutions can cause a distortion in the socio-economic structures, cultural and spiritual values in the communities, thereby, destroying the harmonious relationship between the indigenous people and their forest land or territories. Whereas, it is this same relationship that had been helping to conserve, preserve and manage the forest, and enhancing carbon stocks before REDD+ programmes were even proposed. According to Evely et al. (2011), high level of participation in conservation projects increases sustainability and adaptability because they build capacity of participants to learn and better manage projects and also stakeholders' participation in developing policy. Implementing them encourages, both ownership and responsibility of environmental problems.

### 5.1.1 Legal policy framework

After the Rio de Janeiro Earth Summit in 1992, which was followed by the development of Tropical Action Plans, the integrated forest management model was born which became the basis of the Cameroon forest legislation enacted in 1994 (Nguinguiri, 1999). The 1994 Forestry Law and the Environmental Impact Assessment (EIA) laws, regulate natural resource management while the 1996 Framework Law on Environmental Management, regulates environmental management (WIPO, 2004). The 1998 water law, the 1998 tourism law and the 2001 mining code are some specific resource laws regulating, both environmental and forestry management while the land tenure law governs the national and state lands. Article 45 of the 1996 constitutions stipulates that international agreements and ratified treaties shall override any national laws; therefore, the UNFCCC and the Kyoto protocol amongst other multilateral treaties/agreements apply to Cameroon. According to the 1994 Forestry and Wildlife Law, which was developed under the auspices of the World Bank, local communities are allowed to acquire community forest in non-permanent forest, but this process remains ineffective due to little political will to devolve from management by the state, vertical policy instrument emanation and top to bottom ruling without FPIC of indigenous people. Conservationist used legal flaws to victimise indigenous peoples in justifying demands for conservation funds, thereby, alleviating their state of poverty. The outcome of this existing law is characterised by vertical and horizontal conflicts (AFDB, 2009; REPAR, 2009) which aggravated deforestation and divestment of local communities with exacerbation of poverty.

The World Conservation Union defines protected areas (Park or Reserve) as “*an area of land or sea especially dedicated to the protection and maintenance of biological diversity, natural and associated cultural resources, and managed through legal or other effective means*” (IUCN, 1994). As REDD+ goes to a fast-track implementation state in Cameroon, there is doubt as to how the forestry policy framework will effectively deal with the drivers of deforestation through total engagement of local communities that render REDD+ socio-ecologically successful. Alien social changes within local communities that develop as a result of imposed modern laws in

biodiversity conservation, prevent full engagement of local communities in the management of parks/protected areas. As cited by Ngbo-Ngbangbo et al. (2010), protected areas have existed in different forms within different culture as far back as pre-agrarian societies and sacred forest existed before in which extractive use of natural resources was prohibited. Royalty set aside land for game hunting which served as reserve that excluded commoners. The rise of colonialism brought about ecological changes which increased the creation of protected areas and conservation activities therefore, local communities should be considered in all forest projects where their rights to ownership are not infringed. Community rights, social safeguards and equity in benefit-sharing from REDD+ incentives should be seen to enhance health, biodiversity amongst other co-benefits.

In Cameroon, logging is allowed outside the reserves or protected areas, and most often, taxes are paid to the government by companies that exploit timber. Corruption and violation of rules have led to ecological concerns over logging and poaching, and indigenous people are left out of the compensation process because they are considered as low class in society. The 1994 Forest law states that “*The instrument classifying a state forest shall take into account the social environment of the local population, who shall maintain their logging rights*” and section 26(2) entitled local communities to compensation if their logging rights are deprived for the interest of the project. As pointed out in section 30(2), the classified forest shall have defined boundaries and management objectives as well as maintained local communities logging rights. Therefore, local logging rights and accessibility to natural resources for livelihood should be preserved in any forest type subject to REDD+ activities.

Based on policy and laws on paper, Cameroon has strong local tenure, but a weak local tenure, based on evidence from available literature ‘in practice’ (Sunderlin et al., 2014). The institutional establishment of community forest is recognised by the 1994 Cameroonian forest law, but there is still contradiction between the law and social safeguard short-circuiting tenure complexity. There exist dual realities of community forestry in Cameroon. A customary reality, where local communities use and manage forest resources in their own way within their territory, and state reality, where the state

allocates a piece of land to a local community or a group of local communities with fixed boundaries legally called 'community forest' and is managed by association (Common Initiative Group or cooperative) whose creation is voluntary and requires registration. The statutory system depends on government laws which are enforced by the government, while the customary system is determined by verbal agreement at local level that is passed down from generation to generations (Sunderlin et al., 2008). Modern law disregards customary systems and its usage in conservation projects often imposes social changes on communities and deters them from engaging in conservation initiatives. During the demarcation of MCNP boundary in 2010, some farmlands were included in the park resulting into villagers claiming land rights. Though the local communities recognise the fact that they had no legal rights on reserve forest, they still expected some form of compensation from the government. The delegation of the Ministry of Forestry and Fauna and the Competent Centre for Climate and Energy (GFA Envest) collaborated and focused on law enforcement.

One of the challenges identified during the National Dialogue on REDD+ Governance meeting held in Yaounde, January 2013, was how to build REDD+ on existing laws and policies (Costenbader, 2009). It was noted that Cameroon forest laws and policies need revision and Cameroon's Readiness Preparatory Plan proposed to design legislation on stakeholder engagement, carbon right and benefit-sharing (Crystal & Lauren, 2011) amongst others. The main causes of deforestation and land degradation often lies outside the forest sector, therefore, REDD+ national policies and measures are crucial in carbon sequestration (Wertz-Kanounnokoff & Kongphan-apirak, 2009). Corruption and illegality which are the main motivation behind large scale forest clearance (Alley, 2011), pose a major threat in implementing REDD+ (Barr, 2011) hence; it is compelling to work within local and national scale of governance (Doherty & Schroeder, 2011; Sikor et al., 2010). Drawing from present literature, it is evident that REDD+ policies and programmes might fail in the absence of adequate tenure incentives to local communities. From legal context, REDD+ mechanism will need to consider social fairness like community interests and smallholder potential benefits. Nevertheless, there is an on-going consultation to revise Cameroon forestry law since 2009.

Cameroon policy strategies deliberation has been interested to various actors such as WWF and the World Bank. Krajer (2004) argues that governance has finally become a key concept in public administration and political sciences with increased scientific attention. It entails the formation of institutional structure that establishes environmental goals, creates values, defines rules that influence actions, defines processes and finally produces policy outcomes that are geared towards resolving environmental issues (Vatn, 2010). The fundamental elements of governance are the types of actors involved, with define capacity, competencies and responsibilities; and institutions which define rules that facilitate interactions and coordination between actors (Vatn & Vedeld, 2011). Implementation of REDD+ presents many challenges which; even in countries with available donor support, better forest policies, laws, regulations and enhanced local forest management practices; often need to be resolve through well-coordinated partnerships between government, NGOs and local agencies (Burgess et al., 2010). Therefore, REDD+ strategies require full collaboration amongst all stakeholders and institutions that show interest in enhancing carbon, biodiversity and livelihood (Agrawal et al., 2011). Somorin et al. (2014) argue that, though REDD+ actors are polarised around priorities and issues, there is still an increase in roles and responsibility distribution among themselves which define strategies of engagement, mechanisms for expanding coordination, national safeguards standard and how to build on existing forest governance. This study examines the REDD+ governance policies, legislation and law enforcement strategies to better understand the effectiveness of MCNP-projects in mitigating deforestation by:

- Identifying forest policies makers and how this affects local communities' participation in MCNP-activities;
- Examining effectiveness of institutional policies, rules and regulation within MCNP;
- Examining effectiveness of Memorandum of Understanding within MCNP;
- Investigating contribution of perception of land-rights enhancement on participation in MCNP-activities.

## 5.2 Methodology (See 1.6)

## 5.3 Results

### 5.3.1 Influence of forest policies makers on participation.

The local communities see the government as having overall decision over forest (Fig. 5.1a), but participation is highest among forest dwellers who have the perception that they are deciding forest policies (Fig. 5.1b). The study found a significant relationship between participation in MCNP-activities and the perception that local communities are deciding forest policies ( $\chi^2=7.298$ ,  $p=.007$ ).

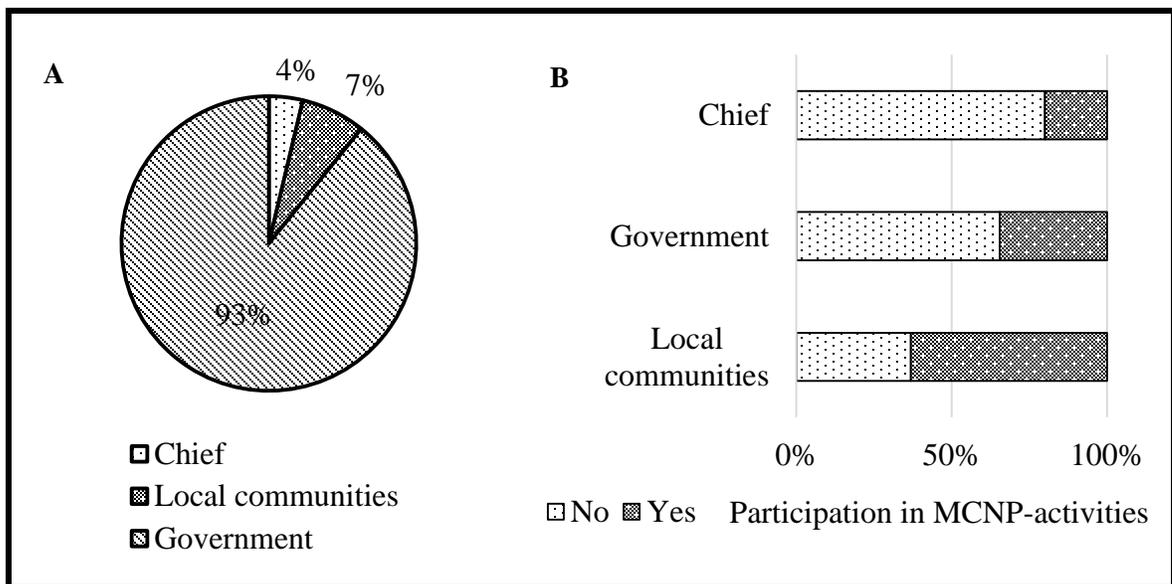


Figure 5.1: Percentages of who decides forest policies (a) and how this relates to participation (b) in MCNP-activities.

### 5.3.2 Rules, regulations, permission and law enforcement within MCNP

There are both state rules and customary rules regulating the exploitation and use of timber and *Prunus* (Fig. 5.2a), and these rules are both enforced and respected by members of the community (Fig. 5.2b). Permission is required for exploitation and exploiters need to pay to a forest officer who issues the permit granting exploitation rights. There are no customary laws regulating the use of firewood and plantains, nor

permission needed to exploit them, but there exist vague government rules regulating harvesting of firewood which are neither clearly enforced, nor respected.

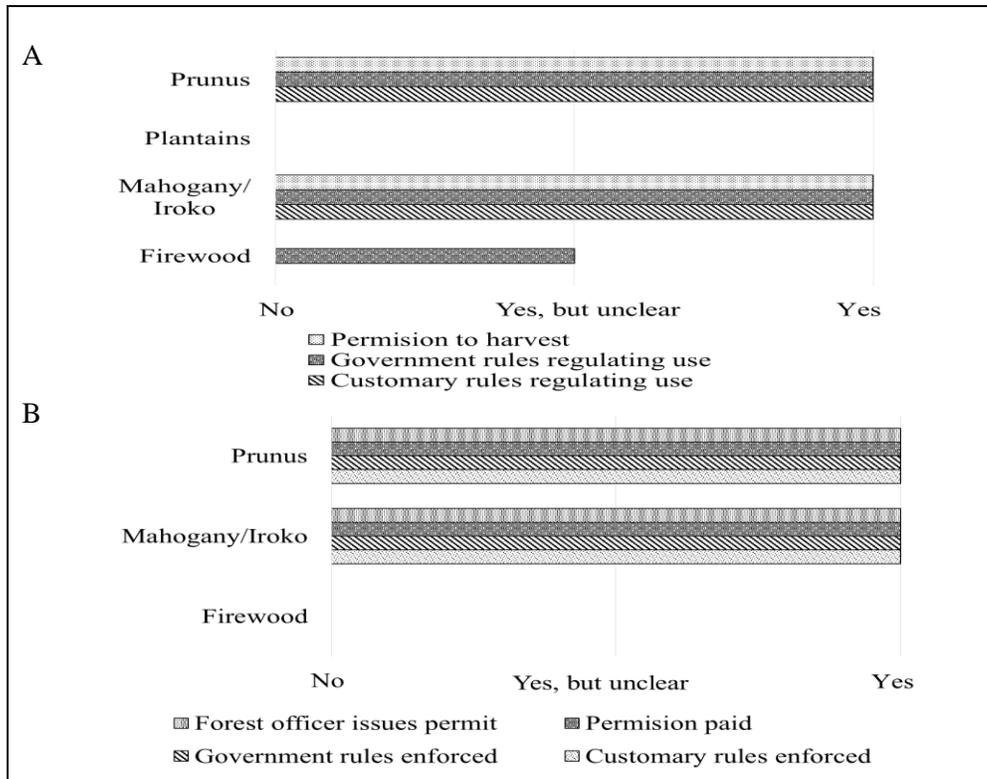


Figure 5.2: Rules for harvesting most important forest products and permission to harvest (a), indicating if rules are enforced or permissions are paid before permit are granted (b).

The memorandum of understanding which is signed between MCNP-villages and park services is sometimes violated by local communities’ members. Result shows a significant difference in violating the MoU between cluster ( $\chi^2(6) = 110.825, p < .0001$ ). Most respondents in West-Coast know that the MoU has been violated, followed by Buea and Bomboko, while no knowledge of violation exists in Muyuka (Fig. 5.3a). Result shows that all defaulters had penalty levied on them and executed accordingly. In Bomboko, the products were all returned while in Buea most defaulters paid fees (cash). In West-Coast, most defaulters’ equipment like engine-saw were confiscated (Fig. 5.3b). Amongst those unaware of any defaulters, the main reason why no one has been caught in Muyuka, Buea and Bomboko is the absence of defaulters while in West-Coast most respondents did not know why defaulters have not been caught (Fig. 5.3c).

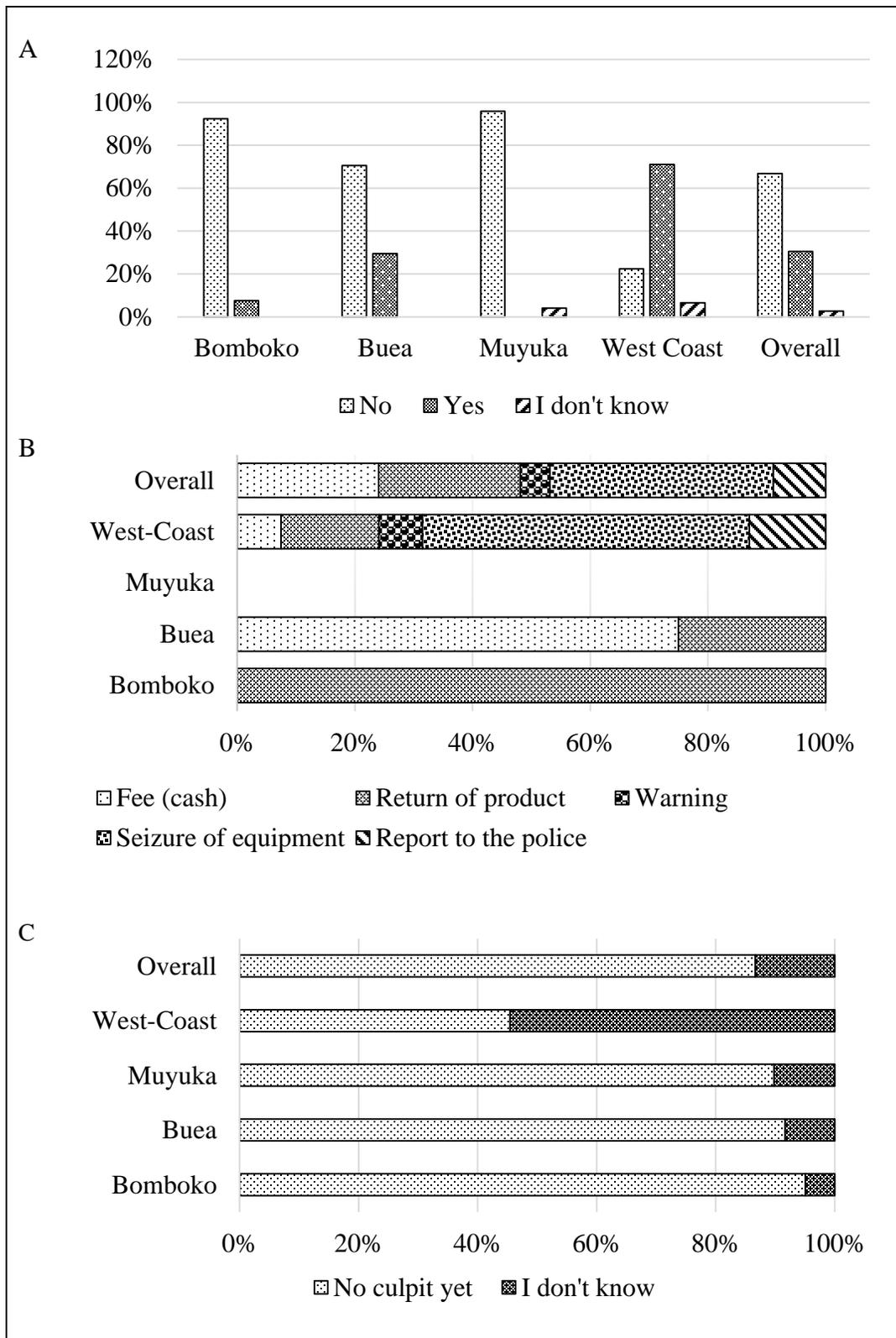


Figure 5.3: Violation of MoU within clusters (a), sanctions faced by defaulters (b) and reasons why no culprit has been caught (for those not aware of defaulters) (c).

Despite disparity in penalty levied on defaulters in West-Coast, results shows that participants in MCNP-activities are more aware of defaulters and that seizure of equipment is the main penalty levied on violators of the Memorandum of Understanding (Fig. 5. 4).

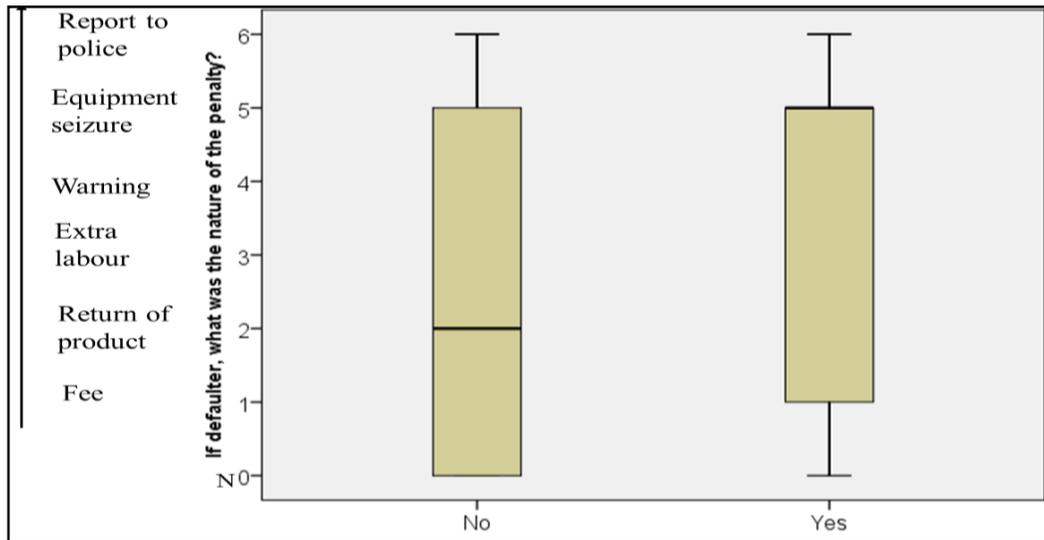


Figure 5.4: The nature of penalty between participants and non-participants of MCNP-activities' group for the West-Coast cluster.

### 5.3.3 Relationship between perception of land-right enhancement and participation in MCNP-activities

A Kruskal-Wallis test shows a significant difference in the perception that MCNP-projects will enhance community land rights ( $H(3) = 3.896, p < .0001$ ) as one of the reasons why local communities are participating in different clusters (Fig. 5.5a).

Pairwise comparison shows a significant difference between the following clusters: Buea-West-Coast ( $H = -53.030, p < .0001; r = -.380$ ), Muyuka-West-Coast ( $H = -43.337, p = .001, r = -.309$ ) and Bomboko-West-Coast ( $H = -37.015, p = .009, r = -.0673$ ).

Jonckheere-Terpstra test shows a significant trend between cluster ( $J = 13,326, p = .001, r = .210$ ) from Buea < Muyuka < Bomboko < West-Coast.

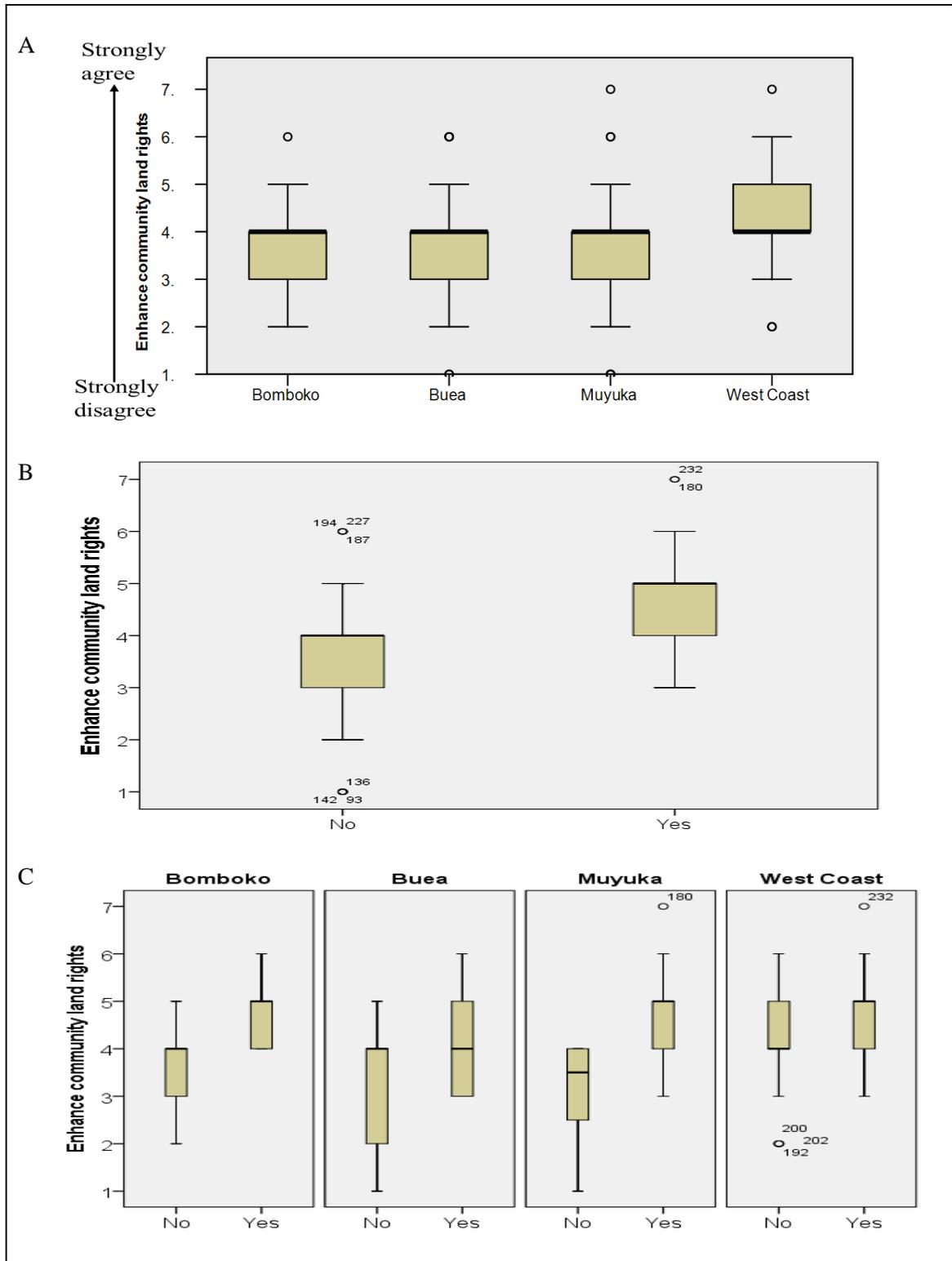


Figure 5.5: A Kruskal-Wallis plot showing perception of MCNP enhancing community land right between clusters (a), t-test showing relationship with participation in MCNP-activities in all clusters (b) and within clusters (c).

Mann-Whitney U Test shows that participation is significantly affected by perception that land rights will be enhanced ( $U=10,6770$ ,  $p<.0001$ ) with an effect-size ( $r$ ) of 45.2% in MCNP-clusters. Bomboko registers an effect-size of 63.9%, followed by West-Coast (50.3%), Muyuka (41.2%) and Buea (27.4%) (Table 5.2a).

The t-test shows a significant difference in perception that land-rights will be enhanced between non-participants and participants in MCNP-activities' groups (Table 5.2b). The study shows a significant correlation between participation and enhancement of land-rights ( $T=-7.714$ ,  $df=245$ ,  $p<.0001$ ) in MCNP-clusters as well as within each cluster ( $p<.05$ ). Significant linear regression relationships in Buea, Muyuka and West-Coast as well as in MCNP-clusters, present how perception of land-rights enhancement contributes to participation (Table 5.2c). The relationships are explained by the following equations:-

- **Overall:**  $P = .585 + .442LR$
- **Buea:**  $P = .841 + .334LR$
- **Muyuka:**  $P = .555 + .585LR$
- **West-Coast:**  $P = .635 + .342LR$

Where  $P$ =Participation and  $LR$ = Land-right enhancement

### 5.3.4 Qualitative results

It is evident from the word clouds that, interviewees talked mostly about community, park, forest, involvement, activity and management (Fig. 5.6a). Themes established from word clouds were; Cameroon forestry law (A), community involvement in Park activities (B), national and/or local committee (C), and REDD+ management (D). Figure 5.6b and table 5.1 further show the types of comments across different levels of stakeholders.

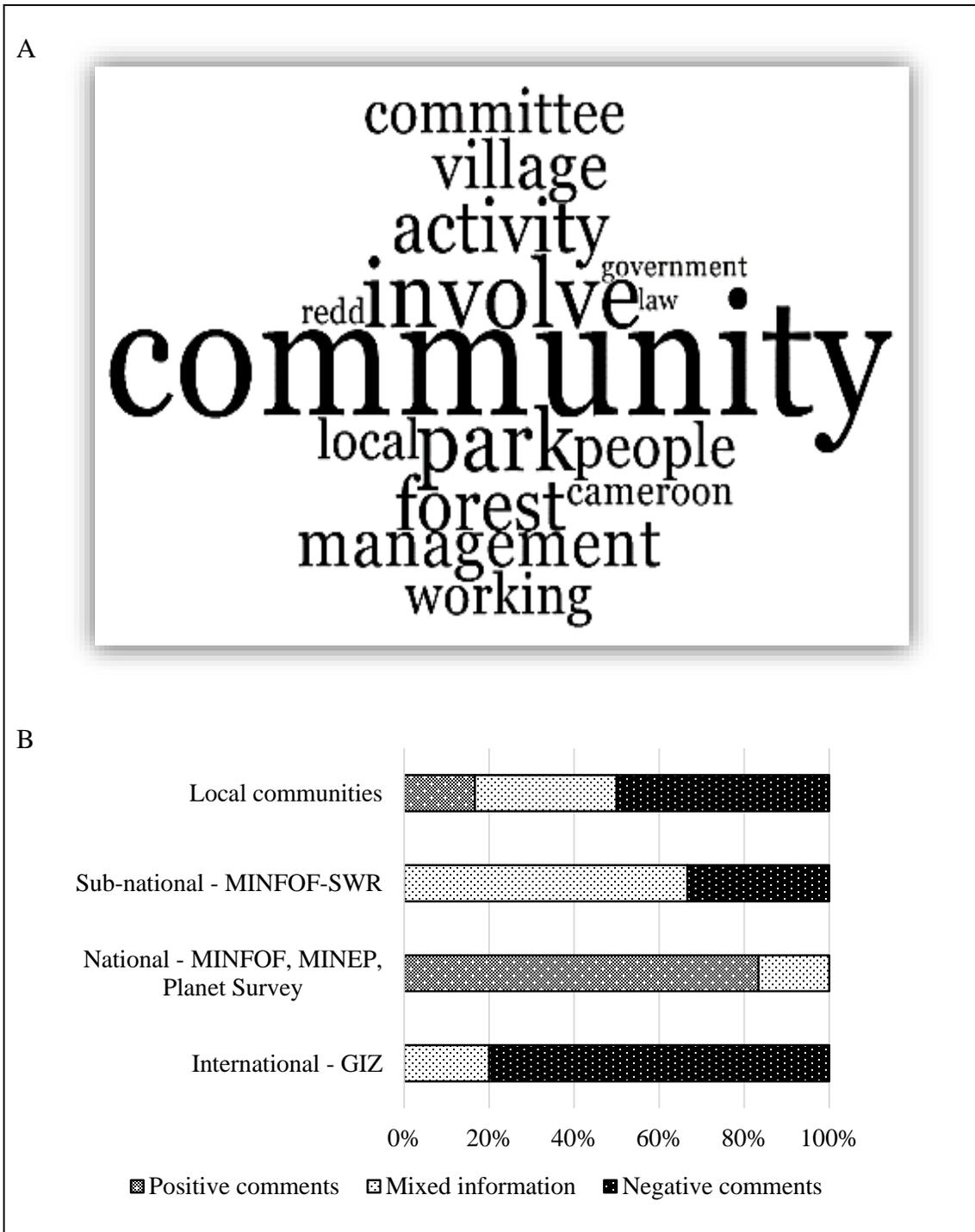


Figure 5.6: Word clouds showing most mentioned words from the interview (a) and types of comments provided by different levels of stakeholders (b) on governance issues around MCNP.

#### **5.3.4.1 Cameroon forestry law complexity**

GIZ respondent raises concerns about the complex and unsatisfactory nature of the forestry law, and the unfair nature of benefits allocation to local communities, while, MINFOF-SWR respondent shows scepticism over adequacy of forest management policies. But local communities' respondents express concerns about restricted forest access for livelihood provision.

*GIZ: "The Cameroon forestry law sometimes has not really satisfied the communities. The law is so complex and complicated and not feasible in the field. It is not practically feasible. So sometimes it does not encourage the people to follow it because it is impossible."*

*GIZ: "Villagers keep asking questions: "Am I not allowed cutting down my own tree in my farm to build my house?" If you have to cut a tree in your own farm, you have to ask the chief of forestry to come and look at the tree and the person is usually 10 villages away. So it is not really practical."*

*GIZ: "I sometimes feel sorry for members of local communities because the administration is not very fair. It sometimes takes long for them to expect (get) benefits, or for something to happen on the side of the government (allocate benefits)."*

*Sub-national: "With this 41 villages and a population of more than 100,000, there is no appropriate policy that we can put in place for the resources to be well managed."*

*LC: "Before the Mount Cameroon projects, we used to hunt right up to the forest, but now the law is restricting us and we need permit from them before we carry out any activity on the mountain."*

#### **5.3.4.2 Community involvement in Park activities**

GIZ blames the community for not taking adequate initiatives to stand up for themselves. The local communities argue that, they have been respecting the government while outsiders encroached the forest. They also blamed the state for corrupt practices and for not giving them rights to intercept violators.

GIZ: *“They don’t take initiative to do things...”*

LC: *“The villagers are also respecting the government, they need a permit to conduct any activity in the forest.”*

LC: *“We have a programme that teaches us how to manage a forest and we do that following the government and local laws.”*

LC: *“When people in this village are found guilty of doing any illegal activity in the forest, the village heads punish them first then hand them over to the government authority. The punishment is usually in the form of fine (money) and anything that has been harvested is confiscated. Most of the crime is committed by the youths from outside.”*

LC: *We are the ones preserving the forest. We caught some boys in the forest and called the park services, but when they came, they did not even check anything. The boys gave them some money and they allowed the boys to leave, making us look like enemies to the boys.”*

LC: *“We have asked them to give us the local people the authority to catch violators of Memorandum of Understanding, but they refused and said, they themselves will catch them. So how will they know when they are not living here?”*

#### **5.3.4.3 National and local committees**

Both the national and sub-national respondents perceive local communities as being highly engaged in REDD+ discussions at both national and sub-national levels, but description of local delegates’ functions at sub-national level prove that, committee members only help to harmonise engagement of local communities in following instructions set-out by park-services and report illegal activities. No tangible contribution.

National: *“Actually the R-PP has been validated and we have a national committee which has been put up by the Prime Minister in which indigenous people are members of that committee. It is the ministry and the civil society that are members of the national committee.”*

Sub-national: *“According to the law, the members of these committees are eight in each village community and they cut across the strata of every community. There are different strata with representatives, the president, the representative of the youth and the representative of women, the internal and external headlines. Internal headline is the chief. All the strata are outlined because they have to give their contributions to the management of the park. The committee has been put in place according to the law, and to bring them to really participate in the park management activities means we have to reorganise them again.”*

Sub-national: *“40 out of the 41 villages have a village sanction committee. One village because of chieftaincy problem has not been able to put in place its committee. These are local committees that are sanctioned by the forestry law. They are supposed to be the protocol to harmonise the intervention of the community in management of protected area. There is a discretionary committee stating the roles and responsibilities of this committee. There are about five of them. This committee is supposed to be collecting data and elaborating the management plan for the park. They also participate in implementing the park management measures that are deemed necessary by the park service. They are supposed to participate in patrols to make sure that things are put under control, so three of them are supposed to give us information on illegal activities.”*

#### **5.3.4.4 REDD+ management**

GIZ perceives REDD+ as not yet operational, but national respondents hail the communities' involvement in REDD+ design and implementation.

International: *“This has not been implemented in Cameroon to the best of my knowledge. REDD+ is still something building up in Cameroon, it has not yet been implemented.”*

National: *“REDD+ is a process in which local population have mostly been carrying out in Cameroon. It is original. I have never seen a process where the population is so involved.”*

National: *“REDD+ is not yet an effective idea because all activities of such deforestation and degradation are barely basic.”*

National: *“There are NGO in Cameroon where local communities are involved in*

*carbon sequestration like CED.”*

National: *“There is a national team working on REDD+ and we work together with local communities... we organise one meeting after three months, where we talk about REDD issues.”*

National: *“The big challenge with the REDD+ issue is still at the high level with the government and ministries because we have to see how we can improve the involvement of the local community.”*

## **5.4 Discussion**

REDD+ is a multi-level stakeholder governance process requiring specific interest and activities that involve many sources of informal and formal powers and authority influencing each other to arrive at a desirable outcome. It frames solutions to climate change that validate and legitimise certain strategies, stakeholders and solutions while marginalising some stakeholders (Thompson et al., 2011). Resource management problems are due to failure in governance (Pahl-Wostl, 2009), therefore, the success of REDD+ depends on effective governance. Presently, there is no international agreement on REDD+ thus, national REDD+ governance is seen as a constellations of informal and formal rules, regulations, norms and institutions that are relevant to REDD+ policy. As stated by Pahl-Wostl (2009), any governance regime depends on the relative strength of both informal and formal institutions.

Reducing deforestation while simultaneously enhancing socio-economic benefits through sustainable forest management is key in forest reforms where forest governance is at the centre of forest and environmental policies. Governance challenges like laxity in law enforcement, inadequate coordinated governance, lack of transparency and participation in decision-making processes all need to be addressed in achieving REDD+ goals (William, 2013). Governance initiatives like establishment of community forest (decentralisation), Forest Law Enforcement, Governance and Trade (FLEGT) and forest products certification schemes, are all geared toward enhancing sustainable forest management and reducing illegal exploitation (Dkamela, 2011). The Cameroon innovative forestry legal framework, such as 1994 Forest Law and 1995 Forest Decree,

put her at the forefront of Congo Basin countries in promoting sustainable management of natural resources through both conservation and resource production (Somorin et al., 2014). Cameroon is presently negotiating its REDD+ policy strategies and there is no formal law and regulations specified for REDD+. This study is therefore skewed toward existing rules, regulations and enforcement to examine their effectiveness within local communities. REDD+ policy strategies could build on existing institutions like certification schemes, FLEGT, voluntary partnership agreement, community forest and forest taxation schemes.

#### **5.4.1 Forest policies, rules, regulations, permission and law enforcement within MCNP**

Lineages have a strong management authority over the forest within their territories which do have defined boundaries. Acquisition of land, resource management and control are complex combination of family lineage and community rights interferences. Local communities claim to have authority over the forest in their jurisdiction, though, some do sell their resources at the expense of other members of the community. And some individuals do sell timber in their private land without consulting the chiefs. This has made the collective resource management through customary reality ineffective and mainly dependent on the claimed dynamics of fluid boundaries which may even go beyond community forest limits as lineages claiming land rights may even spread in several villages (Pierre et al., 2000). Local communities would not likely engage in forest projects whose policies are decided by the state alone. This study shows that increasing local communities' perception of engaging in decision-making around forest policies also enhances their participation/involvement in MCNP-REDD+ projects.

Land and forest are classified as state property and procedures for registering private lands and obtaining land titles have put indigenous people out of the stream (social exclusion), whereas, they depend on forest and land for daily livelihood and wellbeing. Allocation of forest concession is spelt out in Decree No: 95/531-PM which determines conditions of implementation of forestry regulations. In Cameroon, forest concessions are granted only to person who reside in Cameroon or big companies with known

shareholders and registered offices within the national territories. After a public call for tenders, the bidders are pre-selected and classified for consideration with minimum limit which is set by the Minister of Forestry (not established in any law) depending on envisaged investment, financial, professional and technical capacity. Good performance guarantees the success determined by a committee that also takes into account previous contract experience. The successful bidder, after payment of requisite fee into the state treasury, signs a provisional exploitation contract with the Minister. Under technical control, the concession owner develops all inventories of resources and schedules a five year management plan which enables the forestry service to issue a conformity certificate specifying the provisional exploitation contract. After this provisional contract, the owner can go further to request for a permanent exploitation contract which is valid for 15 years, renewable and gradable like any other forest concession contract granted by the Prime Minister's decree. The inter-ministerial committee that grants permit allocating harvesting of NTFP on a yearly basis, also discriminates against rural dwellers who often lack the resources, but favours financially-fit operators who can easily pay for permit and official quotas from selling their forest products; thereby, leaving the poor with no other choice than illegal activities (Ndoye & Awono, 2009). The process is orientated towards expert knowledge, with time and cost being a bone of contention that put local communities out of main streams leading to socio-economic exclusion in allocation of permit, which, at the same time enhances illegal exploitation.

Despite all these, some of the legal provisions that are clear and give access rights and ownership rights to local communities are never applied (Springate-Baginski & Wollenberg, 2010), thus, rendering the implementation of the 1994 Forestry and Wildlife Law difficult. Despite the lacunas, contradictions and omissions in the law, some provisions are still good, but lacked adequate enforcement and inadequate benefit-sharing mechanism (REPAR, 2009). Even when the state has the political will to act, external influence like the World Bank still frustrates its ambitions, for example, the 1994 Forestry and Wildlife Law has a lot of incoherence with the new Forestry Policy of 1995, but effort to mitigate the situation by adopting the Environmental code in 1996 could not be fruitful because of the conditionality given by its funding body the World Bank, therefore, weakening its bargaining power. The state therefore had no other way,

but to adopt legal instrument heavily laden with lacunas, incomprehensive clauses and full of contradictions with the interest and aspiration of local communities which does not suit climate change mitigation through forestry (Ngwasiri, 2000; Nguiffo & Djeukam, 2008).

In Cameroon, lack of clarity of ownership, overlapping claims, conflict between customary and state rights, weak law enforcement among others, have led to securing rights for dominating actors, elite capture and imposition of fines on members of local communities for deforestation which are caused by outsiders (Larson et al., 2013). This study shows strong law enforcement within MCNP-clusters where penalties are imposed on defaulters within local communities, but defaulters from outside communities go free. Timber harvesting in Cameroon is very profitable and meet-up with domestic demands at a competitive price, but also increases informal logging. One of the major concerns in Cameroon is illegal logging and practices from the issuance of fake concession permits to illegal exportation of timber which are always not in conformity to legal annual exploitation limit. With the establishment of Resource Extraction Monitoring Unit, which is aimed at monitoring forest exploitation activities in Cameroon, cases of illegal logging are now quarterly publicised with small proportion of purgative fines paid, which are often negotiated down to 70-80% of original amount (Dkamela, 2011). While defaulters of West-Coast had their equipment sized (most defaulters were outsiders), cash-fee were paid in Buea (salaried and rich cluster) and defaulters in Bomboko (poorest cluster) returned products to the village head (Fig. 5.3b). This disparity in penalties tallies with the fact that penalties are negotiable depending on socio-economic setting.

The MCNP-REDD+ initiative helps avoid further encroachment and does rehabilitate degraded forest areas, thereby, preserving biodiversity and increasing carbon stock. The MCNP-REDD+ initiative is established within a permanent (reserve) forest domain which is legally owned by the state. It is aimed at replacing forest conversion through conservation, by avoiding encroachment and increasing the carbon stock through forest rehabilitation. At the local community level are government actors, local communities claiming rights over land, immigrants who are attracted by fertile soil for agriculture,

and outsiders from neighbouring villages. Village agreements have been reached through participatory meetings and villagers who have invested in protected areas are advised to seek alternatives elsewhere. The local communities demarcated boundaries of the park, and are gradually participating in the MCNP-projects, though predominantly on reporting illegal activities. The high awareness of defaulters in the West-Coast cluster tallies with the high rate of immigrants and outsiders harvesting forest products in the West-Coast cluster. Respondents who were not aware of defaulters were asked to give reasons why there is no apprehension of defaulters. While most respondents in Bomboko, Buea and Muyuka responded that there has not been any culprit, more respondents in West-Coast said they did not know. This implies that, it is not because they have not been any culprit, but they did not know why the defaulters are not being caught, therefore, validating the results that the MoU has been violated in West-Coast by outsiders, immigrants or indigenes.

Indigenes complaint that forest policies does not grant rights or authority to catch or penalise defaulters from outside communities. Once outside defaulters are identified, they can only be reported to the park service which lies some 35km away and by the time the forest guards are sent to get the culprit, perpetrators must have exploited the forest and transported their goods away. This has left local communities frustrated and powerless to enforce law. Sensitisation and awareness are needed to educate and build capacity of forest dwellers to engage in decision-making during policy reforms in sustainable resource management, otherwise, they may likely resist REDD+ projects, fearing that their land rights could be violated, and thereby, threatening local agricultural practices, cultural values and traditional lifestyles and livelihoods. Currently, Cameroon is designing rules for informal engagement through stakeholder's platforms; a rule-making system to govern national REDD+ strategy; that would hopefully structure engagement of all stakeholders (especially local actors) with various interest and roles across different aspects of REDD+ (Somorin et al., 2014).

#### **5.4.2 Perception of community land-rights**

Clear resource rights enhance sustainable usage of forest resources and also empower forest dwellers with legal authority to stop outsiders from illegal forest exploitation (Lawlor et al., 2010). While the indigenous people are observing government decision to transform their land, the immigrants and outsiders challenge this decision and are encroaching into the land for agricultural activities and exploitation of forest products resulting to conflict. The outsiders claim that only the state has rights to evict encroachers and stop illegal exploitation, but members of local communities think it is their rights to protect their land, though, legally the park belongs to the state and its policies are decided by the state. Securing local communities land-rights directly relates to participation in conservation initiatives.

### **5.5 Conclusions and recommendations**

In Cameroon, a feasible effective REDD+ policy is desirable. The Cameroon government stakeholders need to involve the public in knowledge sharing, enhancing collaboration, networking, building on traditional experiences and moving towards national REDD+ strategy. Though they may confront challenges like inadequate institutional capacity, enforcement and monitoring systems. While Cameroon is still developing institutional framework, REDD+ planning process should integrate local institution and build local capacity to carry out REDD+ task. REDD+ has helped in generating increased political will and financial support to address socio-economic and institutional concerns that are contributing to deforestation. The customary law and land ownership should be recognised to facilitate lineage access to land. A Legal Act recognising local communities' right over land with a legal title may serve as land rights (property rights) certificate which can be used during conflict resolution as evidence of land ownership. Procedures for acquiring land certificate should also be simplified and the imposed taxes rate should be drastically reduced. This law should protect the interest of local communities and officials involve in corrupt practices during this procedure should be sanctioned and/or suspended alongside with those violating the rights of local

communities. Facilitating community land title procedure for local communities will enable them to secure space for their own generation and communities' activities.

Cameroon is currently designing a stakeholders' platform focusing on governance, benefit-sharing, effective communication, rights, capacity building, MVR, education, research, and national safeguard standards, that structure local engagement access to forest resources and tenure arrangement under REDD+. This policy strategy accentuates both informal and formal norms that are regulative in nature and constraining all stakeholders' activities. Cameroon has recognised the need for compatibility of present forest laws and policies with REDD+ and these forest laws and policies are undergoing reforms. Desirable outcomes require state rules and regulations with enhance legal and institutional framework. Mount Cameroon conservation initiative has successfully moved into a REDD+ projects, but customary tenure reforms need to be incorporated into the structure of REDD+ governance.

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## **6 Effective communication as a tool for enhancing local participation in Mt. Cameroon National Park**

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*Keywords: Participation, Social safeguards, Awareness, Cameroon, Forest conservation, Deforestation*

**Abstract:** - For forest projects to be effective, they need to fit the dynamic of local socio-economic systems, agro-forestry livelihoods and be sensitive to land use constraints. Deforestation and land degradation have been blamed for instigating inappropriate agro-forestry methods, but few studies have identified the factors that determine forest dwellers' awareness of or attitude towards agro-forestry. The decision to get involved in forestry projects is determined by communities' attitude, which in turn, is shaped by information received from within and outside the local community. This study examines how communication can be used to enhance local community participation for effective, efficient and equity in REDD+ projects around Mount Cameroon National Park (MCNP). Cluster multi-stage random sampling was used to collect data from 259 respondents that were analysed using Chi-square, Mann-Whitney, t-test, Kruskal-Wallis, Jonckheere-Terpstra tests and NVivo. This study shows that the level of local participation in MCNP-REDD+ projects directly relates to frequency of information received, level of education and perception of being able to protect forest. The perception from the community of having the ability to protect the forest also directly correlates to frequency of information. Although tribal meetings is the medium most used (and preferred), public hearings are also preferred because they include settlers. Planned and continuous communication are recommended to trigger local communities to change their attitudes, opinions, behaviours, perceptions and enhance appropriate actions and collective participation for effectiveness, efficiency and equity in REDD+ projects. Awareness and appreciation can encourage full engagement in natural resource management, and participation in local community forestry has been recognised as a means of strengthening communities.

## 6.1 Introduction and background

Communication is a process by which people interact to create, maintain and manage meaning (Conrad & Poole, 2011). Colin Fraser & Jonathan Vill (1995) quote “*The planned use of communication techniques, activities and media give people powerful tools both to experience change and actually to guide it. An intensified exchange of ideas among all sectors of society can lead to the greater involvement of people in a common course. This is a fundamental requirement for appropriate and sustainable development*” (Servaes & Patchanee, 2008). Participation and communication are two sides of a coin (Ramirez & Quarry, 2004), but effective communication may also be considered as a switch-on point for full and effective participation in natural resource management (Figure 6.1).

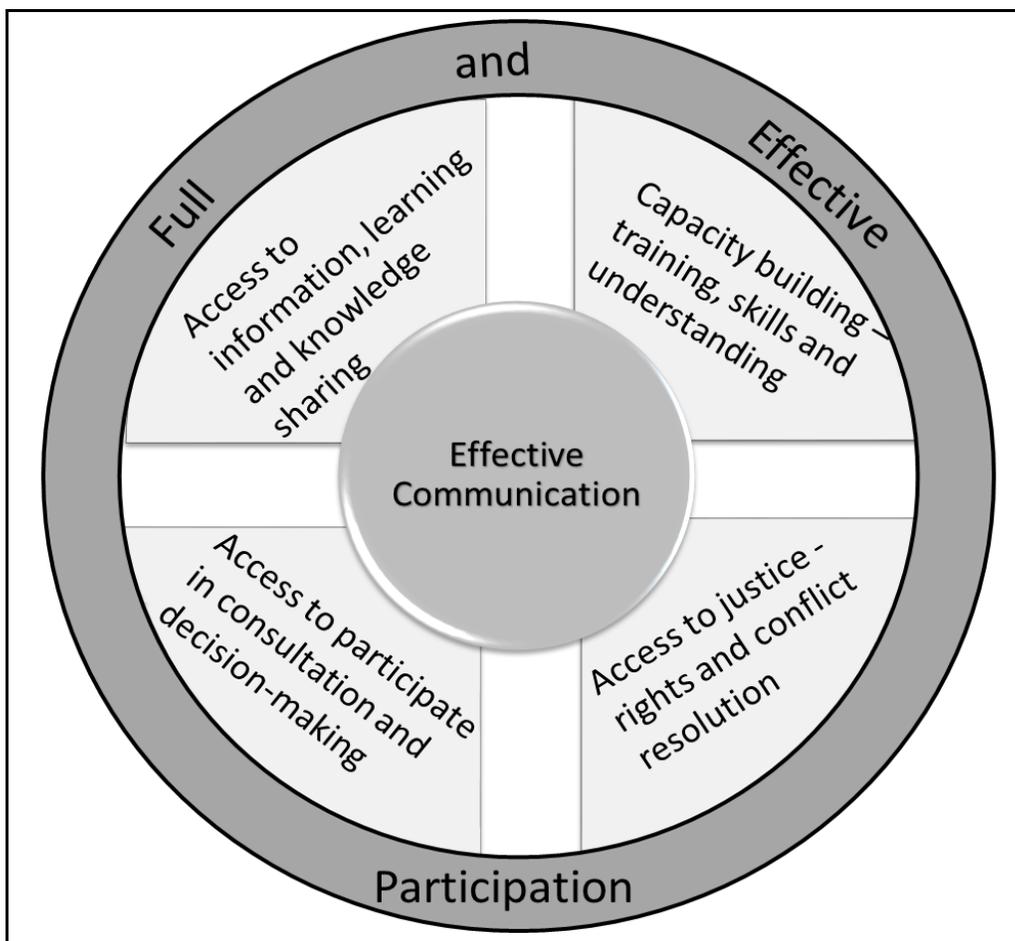


Figure 6.1: Effective communication as a switch-on point for full and effective participation in natural resource management.

In tropical countries, deforestation and land degradation account for almost 25% of the total greenhouse gas emissions and about 80% of deforestation is believed to be as a result of smallholder slash-and-burn agriculture and fire-wood harvesting (Ngendakumana et al., 2013), though these are seen as secondary effects of timber exploitation which degrades forest leading to decline in biodiversity. This makes members of local communities to be at the centre of debate, as human activities are central to deforestation and land degradation debates, thereby, making communication inevitable.

Since the inception of Reduced Emissions from Deforestation and land Degradation plus conservation and sustainable resource management (REDD+) in 2005 at the eleventh Conference of Parties in Montreal (UNFCCC, 2005), one of the main challenges has been how to develop strategies to enhance community rights, actors' consents, collective participation and implementation (Ngendakumana et al., 2013). The full and effective engagement of relevant stakeholders has become a requirement for REDD+ under the Cancun agreements (Lang, 2010) following the UNFCCC Conference of Parties (COP-16) in 2010. The Cancun agreement also calls for recognition of indigenous knowledge, respect of rights of indigenous people and local stakeholders (UN-REDD, 2009). This implementation included obligations, social and environmental safeguards needed by parties to comply with, such as, respect for human rights, addressing issues related to land tenure, forest governance, and stakeholders' engagement with effective involvement of women and local stakeholders, and all these cannot be achieved without effective communication.

*“REDD+ readiness planning activities in Cameroon, including activities involving the Forest Carbon Partnership Facility (FCPF), lack effective actions to ensure the participation of indigenous peoples and local communities”* (Freudenthal et al., 2011) *“lack transparency, meaningful participation or Free Prior Informed Concern (FPIC) and disregard issues of land tenure, customary rights and benefit sharing”* (The REDDDesk, 2013). Social safeguards, effective participation and stakeholders engagement with civil society and local communities during the design, implementation and monitoring of forest projects linked with natural resource management can be

realised through effective communication. Effective communication is vital for knowledge and information transfer which are essential for the public to respond to challenges of climate change. However, useful information and knowledge depend on clarity in communication - without misunderstanding and ambiguities (Manda, 2007).

It is argued that cultural and forest management strategies of local communities are not readily accommodated in conventional resource management planning because of inadequate communication, and consultation among forest managers and local communities (Stevenson & Webb, 2003). Büscher & Dressler (2007) also argue that inadequate human socio-economic and socio-political institutions meant to shape human behaviours have led to failure in achieving sustainable natural resource management objectives. Park villages rely on proponents for REDD+ information and the key challenges for local REDD+ projects include communication to villages on how REDD+ projects works, opportunities and risks, rights and responsibility as well as engagement of local communities in the design and implementation of REDD+ projects (Resosudarmo et al., 2012).

*“If you want development to be rooted in the human beings who have to become the agents of it as well as beneficiaries, then you have got to communicate with them... if you don't do that you will continue to have weak and failing development programmes”* (Erskine, 2004). Despite many approaches used to improve participation on forestry projects in developing countries, the impact of effective communication systems, skills and media to attain project objectives, have seldom been critically evaluated and lack of participation has been linked to failure to communicate with local communities (Crider & Anaya, 1996). Public participation is essential in conservation because it is the only way through which local stakeholders voices can be heard in the process (Costenbader, 2009; Sama & Tawah, 2009). The 1992 Rio Declaration (Principle-10) states that access to environmental information, participating in decision-making and access to justice are vital to natural resource management (UN Doc, 1992).

To ensure effective, efficient and equity in REDD+, there is need for collaborative decision-making between forest managers and local communities (Wells et al., 2004) like adaptive collaborative management (Colfer, 2010), co-management and community

based natural resource management models (Cox et al., 2010). These models stress on full participation and engagement within and between communities from the design, implementation, monitoring, evaluating and decision-making phases, thereby, enabling communities to invest, engage and support projects within local communities (Boissiere et al., 2009). A bottom-up approach will ensure that the needs and concerns of communities are addressed, understood and looked into (Blom et al., 2010). Free Prior-Informed Consent (FPIC) has become a popular standard in ensuring community participation and engagement (Colchester & Ferrari, 2009). Awareness and appreciation encourage collective participation in forest management and participation in community forestry has been recognised as a means of strengthening communities (Curry, 2001). Developing strategies for maintaining social safeguards like community rights and FPIC in land use policy has been one of the major challenges of REDD+ and interaction of property rights and carbon rights could interact to create additional complexity because it requires more clarity and procedural justice (Galudra et al., 2011).

In Yaounde, during the 2013 National Dialogue on REDD+ Governance meeting, one of the major challenges identified was how to strengthen a two-way information flow as part of the REDD+ process. Transparency and access to information in Cameroon is well documented (Forest Transparency, 2012) showing poor legal rights to FPIC. It was noted that during the development of the R-PP, efforts to share information were neither well organised, nor tailored to target audiences. For this reason, the government of Cameroon is now developing communication strategies to address this challenges (FCPF, 2013) such as establishment of community radio programmes to facilitate communication on REDD+ (Ngalame, 2013). Information centres have also been created to enable local stakeholders access information about REDD+ process, forest and land use issues such as forest use contracts, revenue owed to government (Morrison et al., 2009) and projects with socio-environmental impact (Federic, 2012) have been proposed. According to William (2013), the civil society stakeholders agree on what needs to be improved with less clarification on how to do it.

### **6.1.1 Communication theory**

Communication theory simply provides a complex understanding of the communication process (Miller, 2014) that moves far from description of an event to providing ways through which all those events can be understood, therefore, it is a systematic summary of a communication process (Fig. 6.2). Environmental communication scholarship on the public participation process is essential in linking knowledge to action. Competence in communication is achieved by successfully balancing effectiveness and appropriateness in communication. Effectiveness is the extent of achieving your objectives in an interaction while appropriateness depends on fulfilling social expectations for a particular situation. For example, if local communities are promised developmental projects (like roads, electricity and schools) on condition that they sign the Memorandum of Understanding (MoU) with park managers and no developmental project are carried out after signing the MoU; the communication decision is effective, but how appropriate is this deceit? Therefore, a competent communicator should be both effective and appropriate for environmental legitimacy, whose concept depends on communities' beliefs and perceptions. Legitimacy is a social assessment (appraisal of acceptance) of appropriate and desired outcomes (Zimmerman & Zeitz, 2002). Credibility plays a crucial role in managing impression and the credibility of the message perceived depends on the "*perceptions of source competence, of actual or expected bias behaviour and the characteristics of the message itself*" (Aerts & Cormier, 2009). This study considers the practical theories of communication which describe the context in which individuals operate, rather than, the universal law as in nomothetic theory.

### **6.1.2 Practical theory of communication**

The practical theory of communication is a system of connected ideas that allow individual to reason and reflect through situation and make informed decisions about appropriate actions to take. It captures differences among situations and provides a set of understanding that allows people into weighing alternative courses of action to achieve their objectives. It is aimed at improving life in a concrete way by accomplishing goals in various ways. Actions are voluntary from knowledge created socially in a given era or

cultural setting, to affect the reality of the situation (Littlejohn & Foss, 2010). In practical theory, problems and challenges, techniques and strategies, and consequence of practice are identified. It provides opportunity to reflect on issue of concern/challenges and the principles that have been employed by competent communicators in different scenarios. It recommends new constructive ways of interpreting different situation that helps in transforming old patterns and creating novel understanding and appropriate actions that are more effective.

The practical theory of communication assumes that people take active role in creating knowledge, so perception and interpretation processes are very important because individual are goal-directed agents creating meanings, building intentions, making choices, and acting deliberately in different situation. It is value conscious showing how people interpret and act in different socio-cultural setting - a more evaluating theory that makes judgment about common cultural understanding and actions. Its concept of coordination holds that people respond differently in different situations and the words and actions used to express understanding also differ with time. So these concepts are used as an organising framework to classify communities' interpretation and actions in forest projects. Practical theories enable members of community to understand what is happening so as to reflect, make choices to address problems/challenges and act appropriately. Its principles are guided by reflection and action enabling communicators to build a tentative, revisable and needed normative framework which is relevant to practical situation (Craig & Tracy, 1995). Practical theories become more powerful when it enables competent communicators to address problems/obstacles by using general principles, ideas, and values to reflect on actual practice. Its characteristics include comprehensiveness, inclusiveness, appropriateness, validity, parsimony and openness to other possibilities.

Competent communicators follow social norms to enable community's members to think through the situation and select appropriate actions. Therefore, a competent communicator needs to define goals and state how stakeholders can achieve them; know how to communicate to achieve those goals; and define the principles used in reflecting and making decision on what actions to take. Practical theory, therefore, enables

stakeholders to focus on real situation at hand, explores the uniqueness of the issue of concern, considers the strength and limitation of possible actions, takes actions that achieve outcomes as well as improves livelihood, learns from actual experiences and helps in managing new challenges.

### **6.1.3 Communication process**

Communication may be compare to a type of symbolic action, which is our language or other methods used to convey purpose and meaning that affect our inner consciousness, shape or change our perceptions and motivate appropriate actions (Fig. 6.2); thereby, our beliefs and behaviours towards nature are mediated on or are influenced by what is communicated, and the public sphere finally emerges to form a discursive space where competing voices engage us on environmental issues (Littlejohn & Foss, 2010).

Environmental communication is a pragmatic (educate, persuade, alerts and addresses issues of concern) and constitutive vehicle (create consciousness, shapes perception, and evokes appropriate action) for understanding the environment as well as relationship between human and environment; a medium in constructing environmental problems as well as addressing or negotiating communities' different response to them (Lindenfeld et al., 2012).

In every communication, a message (shapes, words, smell, symbols, loudness, actions, movement or colour) is being passed on through a medium (telephone, radio, books, television, posters and newspapers), from the communicator to the receiver, who interprets it and responds to it, positively or negatively, depending on his/her culture and environment (Fig. 6.2). Communication can promote or disrupt progress depending on what, when, how, why and to whom you communicate. There is need for concise, conventional and clear communication because what is said, or written, is modified by beliefs and personality, and the message reception depends on the audience. The purpose and audiences are very important in every communication process because communication is stimulated by several motivations, and no matter how hard you try to give a clear message, the complete interpretation and understanding rest more on your audience. The extent, to which words/ideas reach the audience with the same meaning intended by the sender, constitutes clarity in communication (Davis et al., 2013).

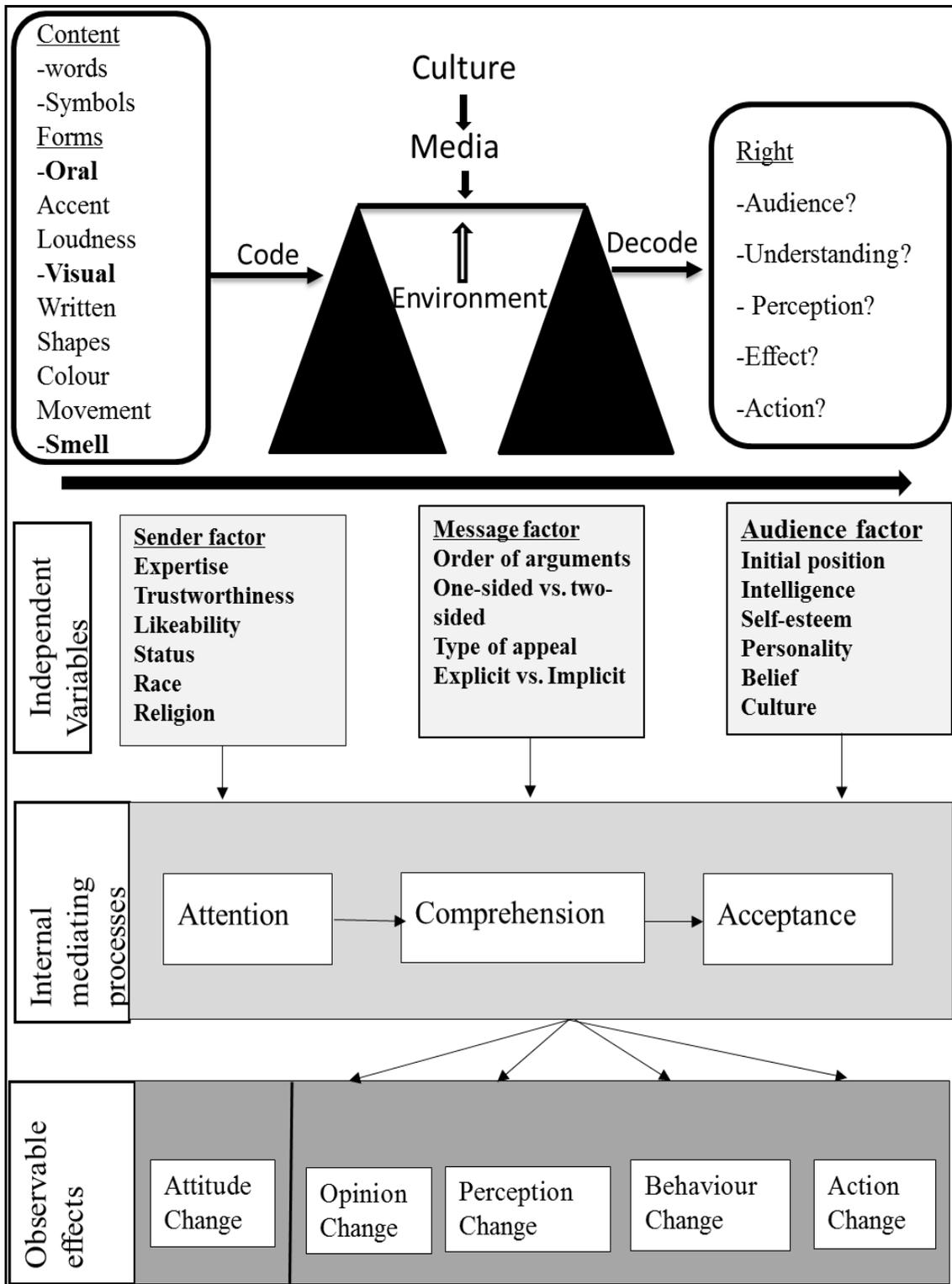


Figure 6.2: Communication process and observable effects for appropriate action within MCNP

Communication also depends on an individual personality which is often shaped by his/her environment and culture. Anything being communicated goes out from the sender into a social context and can be clarified into a meaningful message or led into confusion. So what is being communicated is modified by beliefs and individual personality and its reception depends on the audience and other elements in the semantic environment in which the message is being delivered. Thus, the culture, life style, belief, societal values and environment of the indigenous people must be considered in any REDD+ activities at all levels, if REDD+ is not to be considered as a sort of socio-economic marginalisation. This study seeks to;

- Identify the media used in information dissemination within MCNP;
- Assess the level of knowledge and perception on local communities on environment, climate change and forest issues;
- Examine how frequency of information received impacts participation;
- Assess how perception of being able to protect forest influence participation;
- Examine the influence of education on participation; and
- Examine the relationship between frequency of information receive and perception of being able to protect the forest.

## **6.2 Methodology (See 1.6)**

### **6.3 Results**

Only 1.9% of respondents have heard of REDD+ and only 1.5% know its objectives. Result shows that participation significantly correlates with having heard of REDD+ ( $\tau=.133$ ,  $p=.032$ ), and knowledge of REDD+'s objective ( $\tau=.132$ ,  $p=.033$ ). Having heard of REDD+ also strongly correlates to knowledge of REDD+ objectives  $\tau= .998$ , 95% BCa CI (.997 - 1.00),  $p<.0001$  (Table 6.2).

#### **6.3.1 Frequency of information, media used and most preferred medium**

Figure 6.3a shows that 48% of respondents receive information quarterly, followed by monthly (26%), yearly (16%) and weekly (2%) while 8% of respondents do not get any

information. Tribal meeting is mostly used (42.0%), second by public hearing (22.2%), then focus group discussion (18.1%) (Fig. 6.3b). Though the most preferred media used is within a tribal meeting (38.6%), there is a shift of preference in receiving information to public hearing as shown by an increase of +12%.

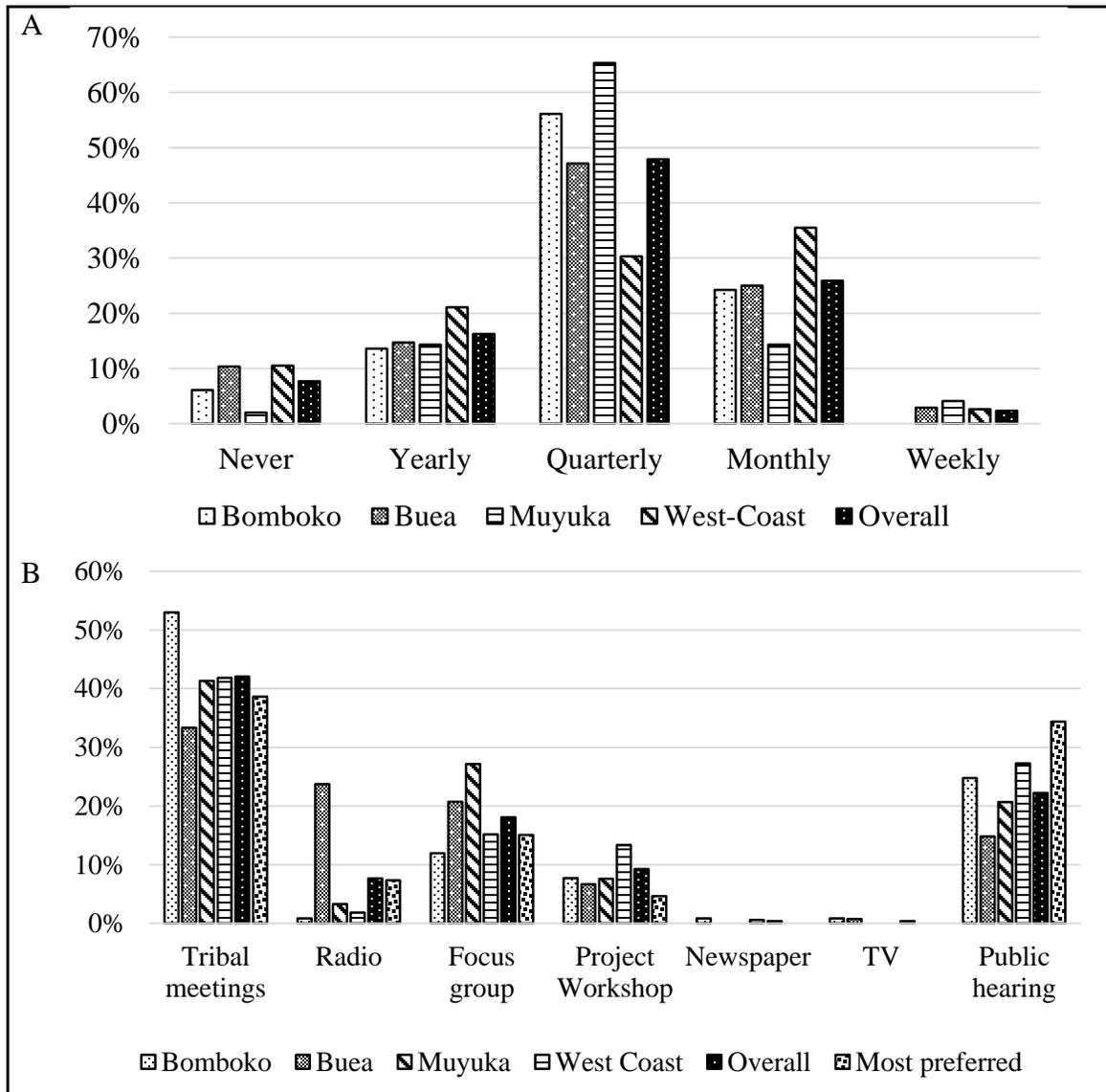


Figure 6.3: Percentages of frequency of information (a), media used and most preferred medium (b) within MCNP-villages.

Results show a direct relationship between frequency of information received and active participation in MCNP activities  $\chi^2(4)=39.276$ ,  $p<.0001$ , as well as within each cluster (Fig. 6.4).

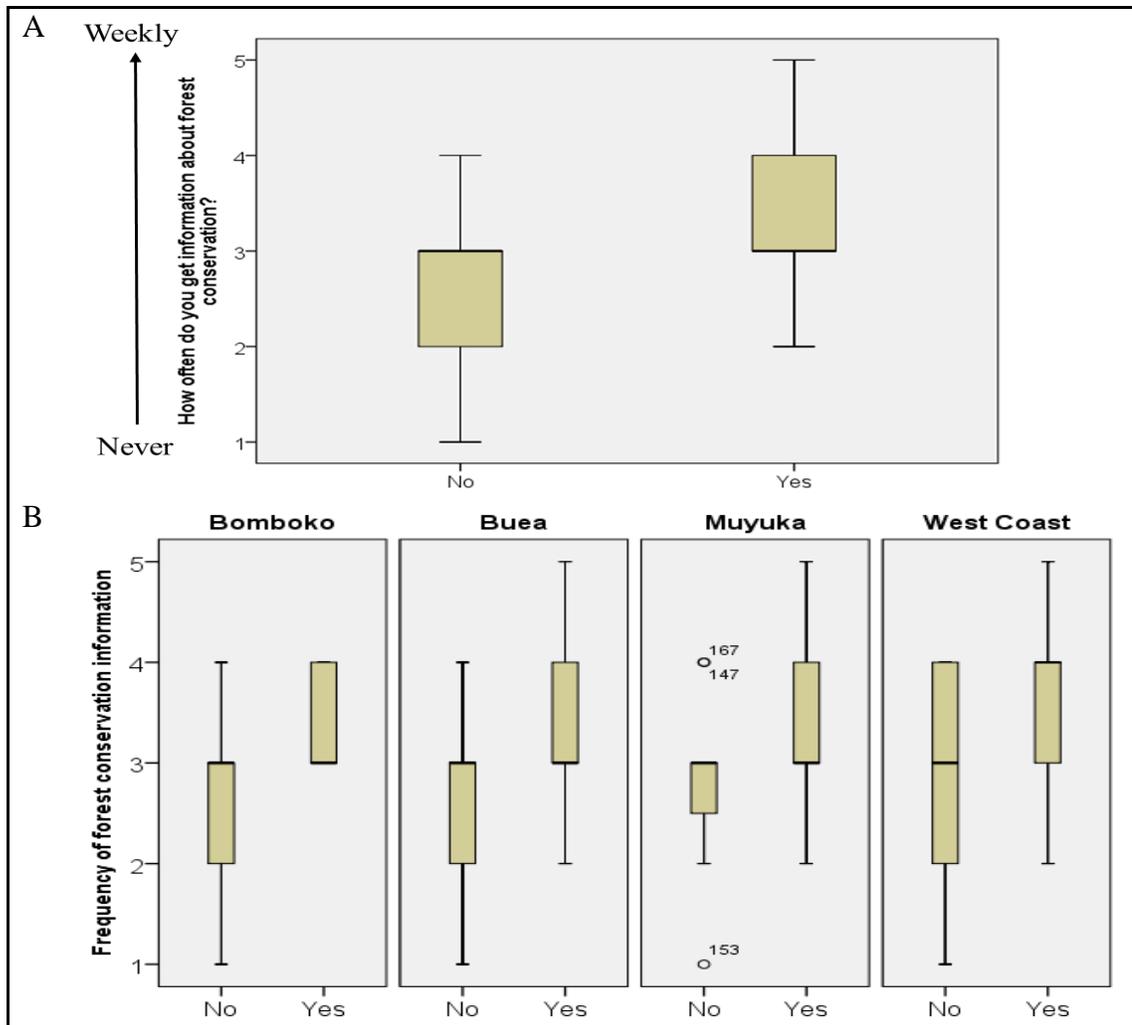


Figure 6.4: Relationship between participation and frequency of information received within MCNP (a) and within each cluster (b).

### 6.3.2 Capacity building - knowledge, education and training

Respondents disagree on felling down trees and burning bushes; slightly disagree on the use of fertilizer, but slightly agree on decreasing traffic as ways to achieve pollution-free air (Fig. 6.5a). Though respondents agree to limit emissions, plant trees and compost manure, they strongly agree on participatory action in achieving pollution-free air.

Figure 6.5b shows a strong agreement of forest as maintaining fertility, worth protecting and on agreement on forest as a source of rain and supplementation of income.

Respondents disagree on forest usage for mining, but agree on forest as a source for wood, hard wood, agriculture, medicine, bush meat, edible, fuelwood and fibres.

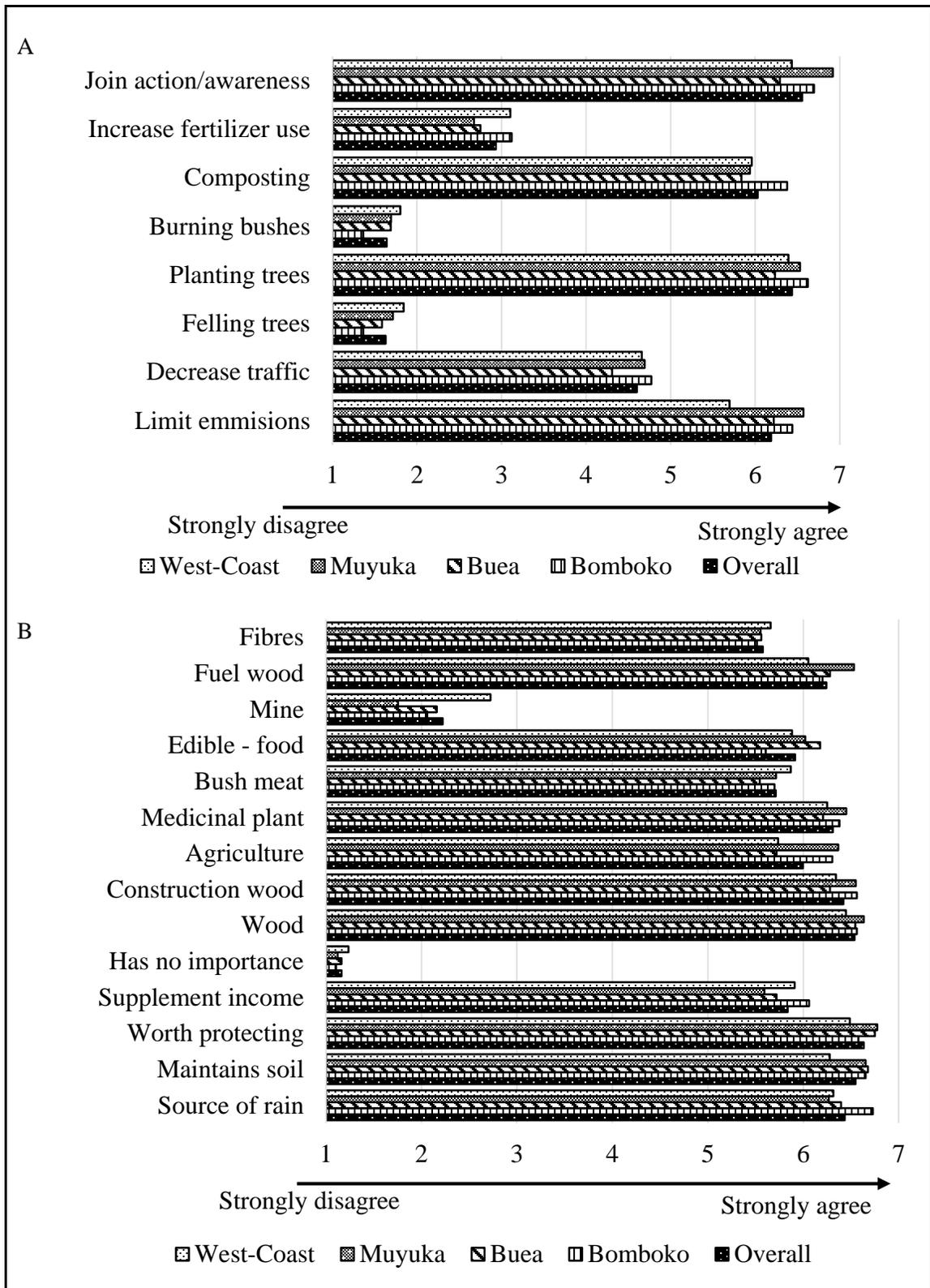


Figure 6.5: The knowledge of local people on achieving pollution-free air (a) and forest perceptions and usage (b) within MCNP.

Level of education also showed a direct relationship with involvement in MCNP activities  $\chi^2(4)=29.355, p<.0001$  (Fig. 6.6).

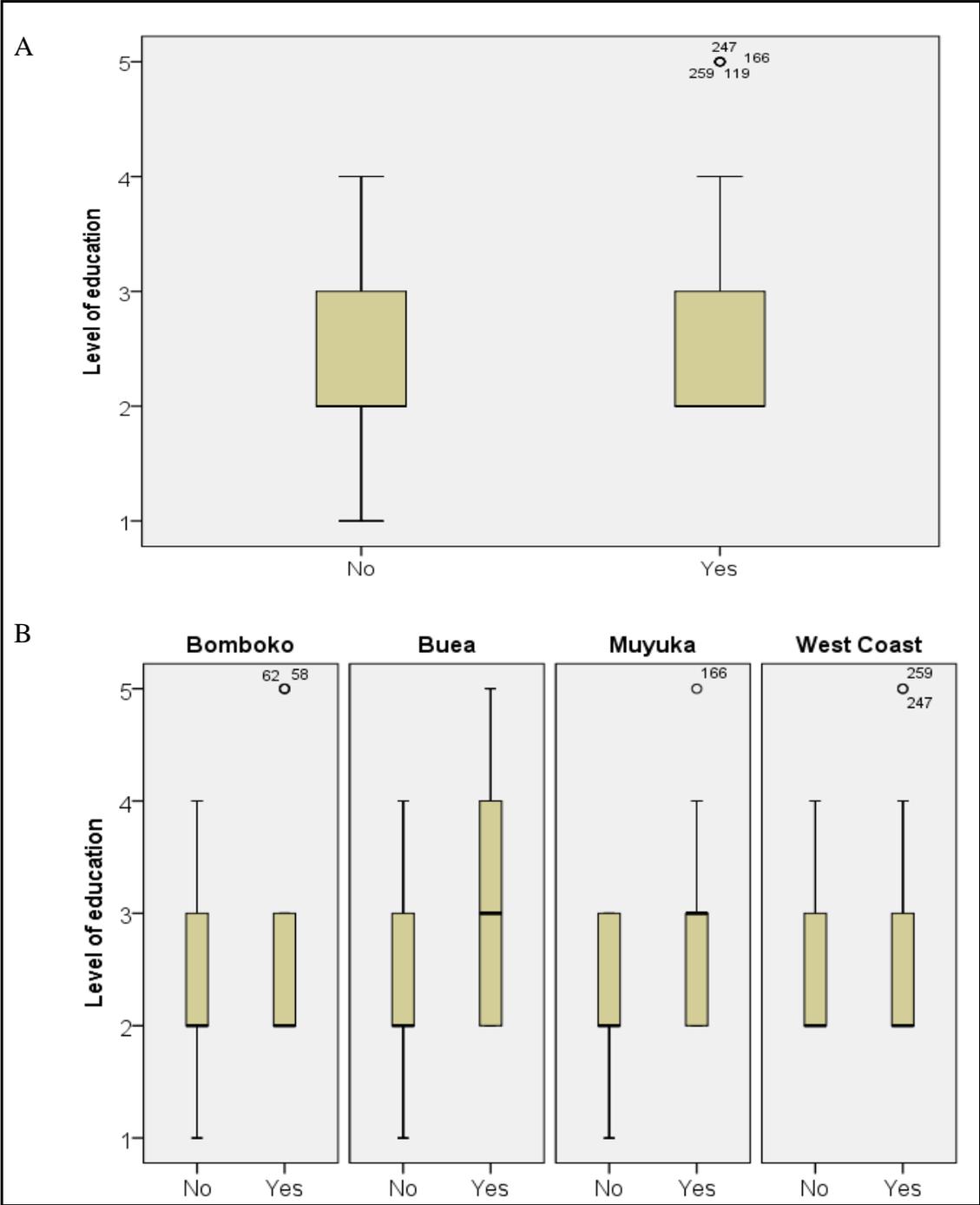


Figure 6.6: Relationship between participation and level of education in MCNP (a) and within each cluster (b).

### 6.3.3 Perceptions towards forest

Figure 6.7 shows respondents perception toward forest as declining within the past five years; the decline affecting livelihood; forest dwellers having the ability to protect forest; sustainable forest management, payment for ecosystem services, conservation and MCNP as being necessary to sustain forest, but a slight agreement of forest management system having the potentials to resolve conflict.

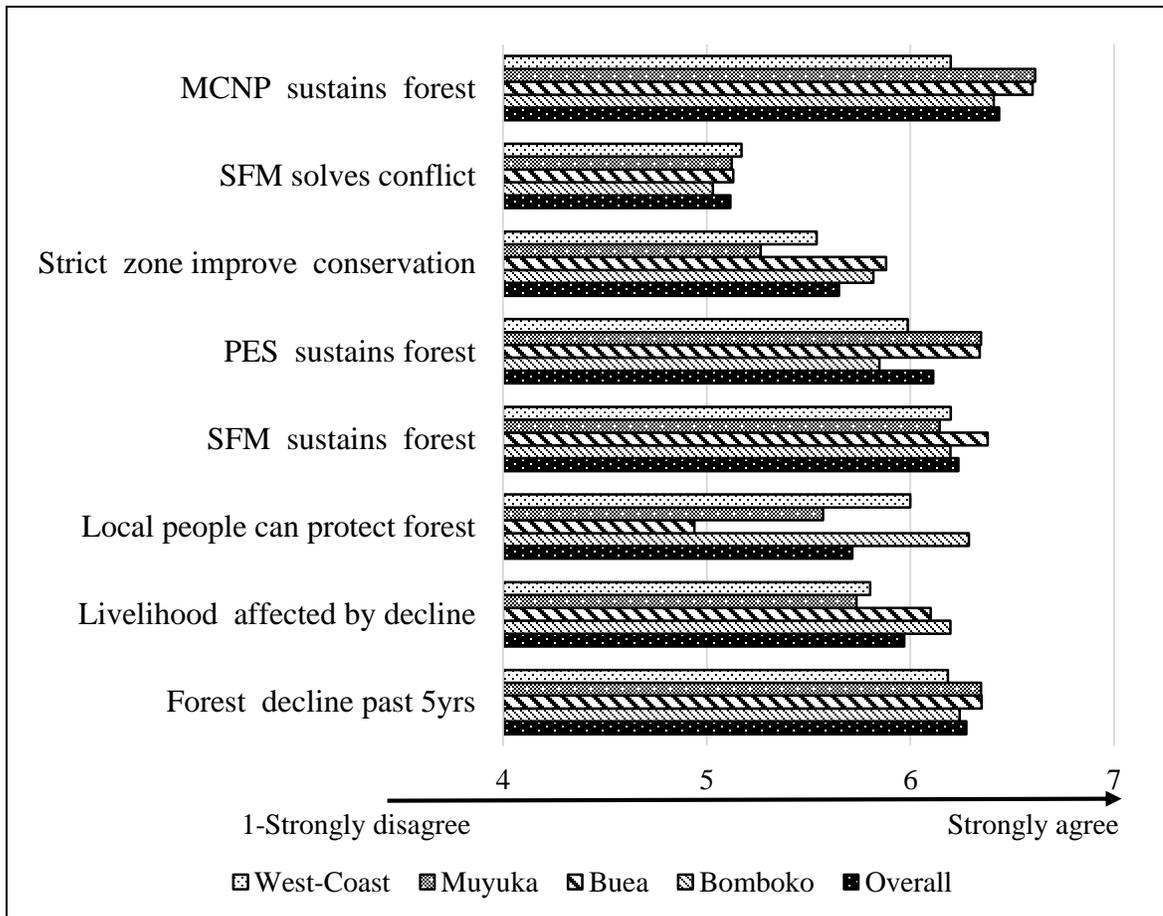


Figure 6.7: A Kruskal-Wallis plot showing variance in forest perception within clusters especially in local ability to protect forest.

A Kruskal-Wallis test shows a significant difference between clusters for perception of 'local people have the ability to protect forest' (Fig. 6.8a), and this significantly relates to participation  $\chi^2(6)=31.217$ ,  $p<.0001$  (Fig. 6.8b) in MCNP and within each cluster (Fig. 6.8c).

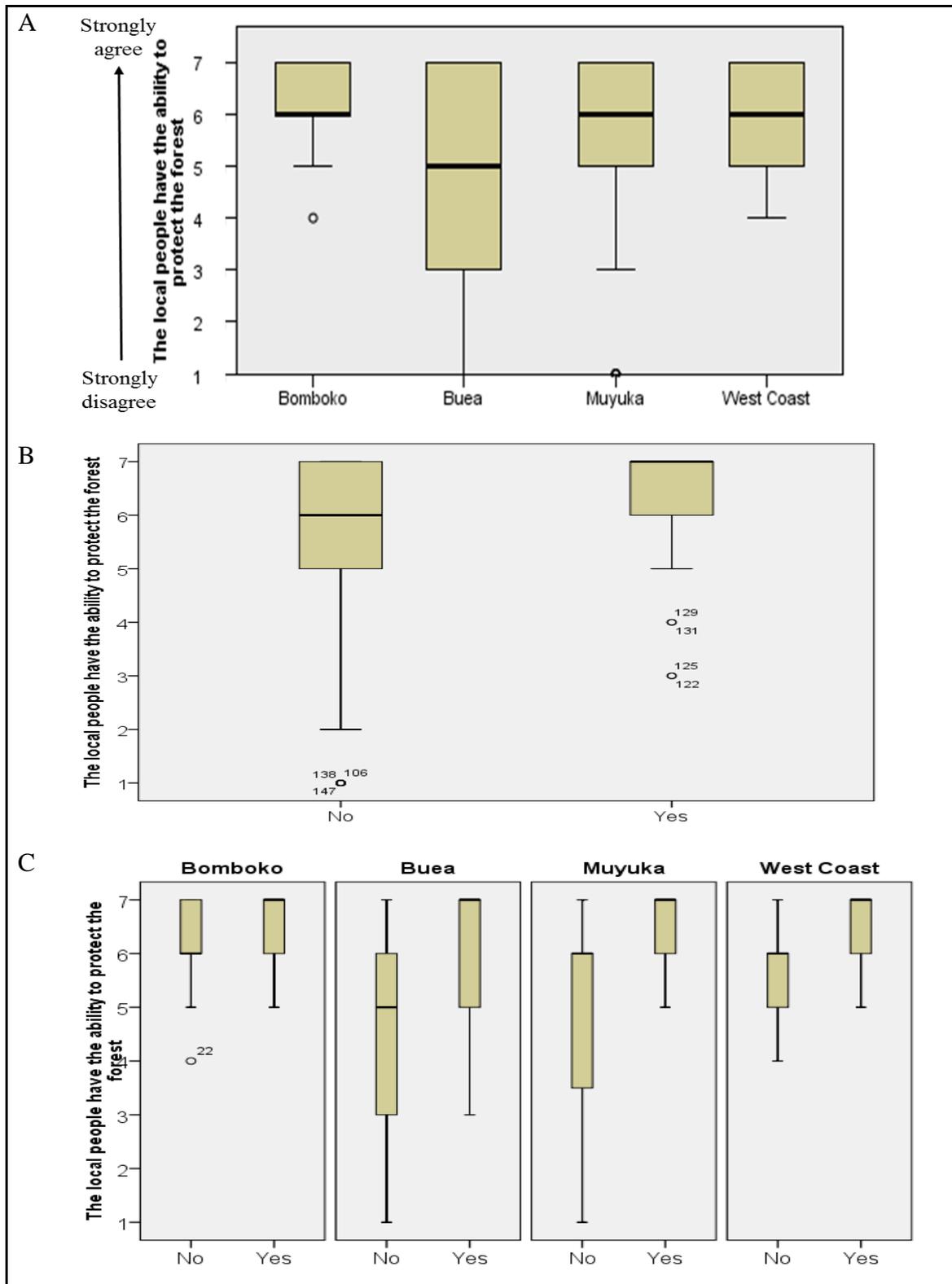


Figure 6.8: A Kruskal-Wallis plot showing variance of perception within clusters (a), *t*-test showing direct-relationship between participation and perception of local ability to protect forest in MCNP (b) and within each cluster (c).

Test of normality shows p-values<.05 and the variance are unequal (p-values<.005). Mann-Whitney U tests show that participation is significantly affected by level of education (U=93870, p=.001, r=.33), perception of having the ability to protect forest (U=10532, p<.0001, r=.088) and frequency of information (U=10734, p<.0001, r=.362) (Table 6.3a). The study found a significant correlation between participation and education (T=-4.169, df=130.45, p=.001), perception to protect forest (T=-5.984, df=256.04, p<.0001) and frequency of information received (T=-7.016, df=223.22, p<.0001) (Table 6.3b). A significant linear regression (Table 6.3c,) presents how frequency of information (A) and perception of local ability to protect forest (B) contribute to participation and it is explained by the equations:

**Overall:**  $P = .522 + .306(A) + .192(B)$

Where *P*=participation, *A*=Frequency of information and *B*=Ability to protect forest

Mann-Whitney U test shows that participation in Bomboko is only significantly affected by frequency of information (U=603, p=.002, r=.190) and the t-test shows T=- 3.117, df=4, p=.003. In Buea, Muyuka and West-Coast, both Mann-Whitney test and t-test show significant correlations between participation and frequency of information, perception of having the ability to protect forest and level of education. Summary of results are found in table 6.4. Significant linear regression models (Table 6.5) show how frequency of information received (A), perception of local ability to protect forest (B) and level of education (C) contribute to participation within clusters and they are explained by the following significant linear regression equations:

- **Bomboko:**  $P = .656 + .363(A)$
- **Buea:**  $P = .716 + .225(A) + .252(B)$
- **Muyuka:**  $P = .591 + .276(A)$
- **West-Coast:**  $P = .661 + .189(A) + .098(C)$

Where *P*=Participation; *A*=Frequency of information received; *B*=Perception of local ability to protect forest; and *C*=Level of education.

#### 6.3.4 Influence of frequency of information on perception

Perception of local ability to protect forest significantly relates to frequency of information received  $\chi^2(24)=68.699$ ,  $p<.0001$  in MCNP (Fig. 6.9a), and within each cluster (Fig. 6.9b). The perception of having the ability to protect forest is also significantly different between different clusters  $H(3)=14.5$ ,  $p=.002$  and a follow-up pairwise-comparison shows a significant difference between Buea and Bomboko ( $H=46.95$ ,  $p=.001$ ) with a medium size effect of 33%. The perception of having the ability to protect the forest also significantly relates to the frequency of information received ( $H(4)=37.33$ ,  $p<.0001$ ), and the trend shows an effect size of 35% (from never < yearly < monthly < quarterly < weekly). A pairwise-comparison shows medium effect sizes on never-quarterly (40%), yearly-monthly (34%), yearly-weekly (48%) and large effect sizes on never-monthly (55%) and never-weekly (89%). Within Bomboko a significant relationship occurs at  $H(3)=11.34$ ,  $p=.01$  and the trend has an effect size of 34%; Significant pairwise-comparison occurs at never-quarterly (43%), never-monthly (75%). In Buea and Muyuka, the relationships are significant at  $H(4)=11.00$ ,  $p=.027$  and  $H(4)=10.04$ ,  $p=.040$  respectively, with both trends having effect sizes of 33% and 44%. In West-Coast the relationship was also significant at  $H(4)=14.25$ ,  $p=.007$ , the trend ( $J=1419.5$ ,  $p<.0001$ ,  $r=.423$ ) has effect size of 42.3%. A Significant pairwise comparison occurs at never-monthly with a large effect size of 52%. Summary of results are found in table 6.6.

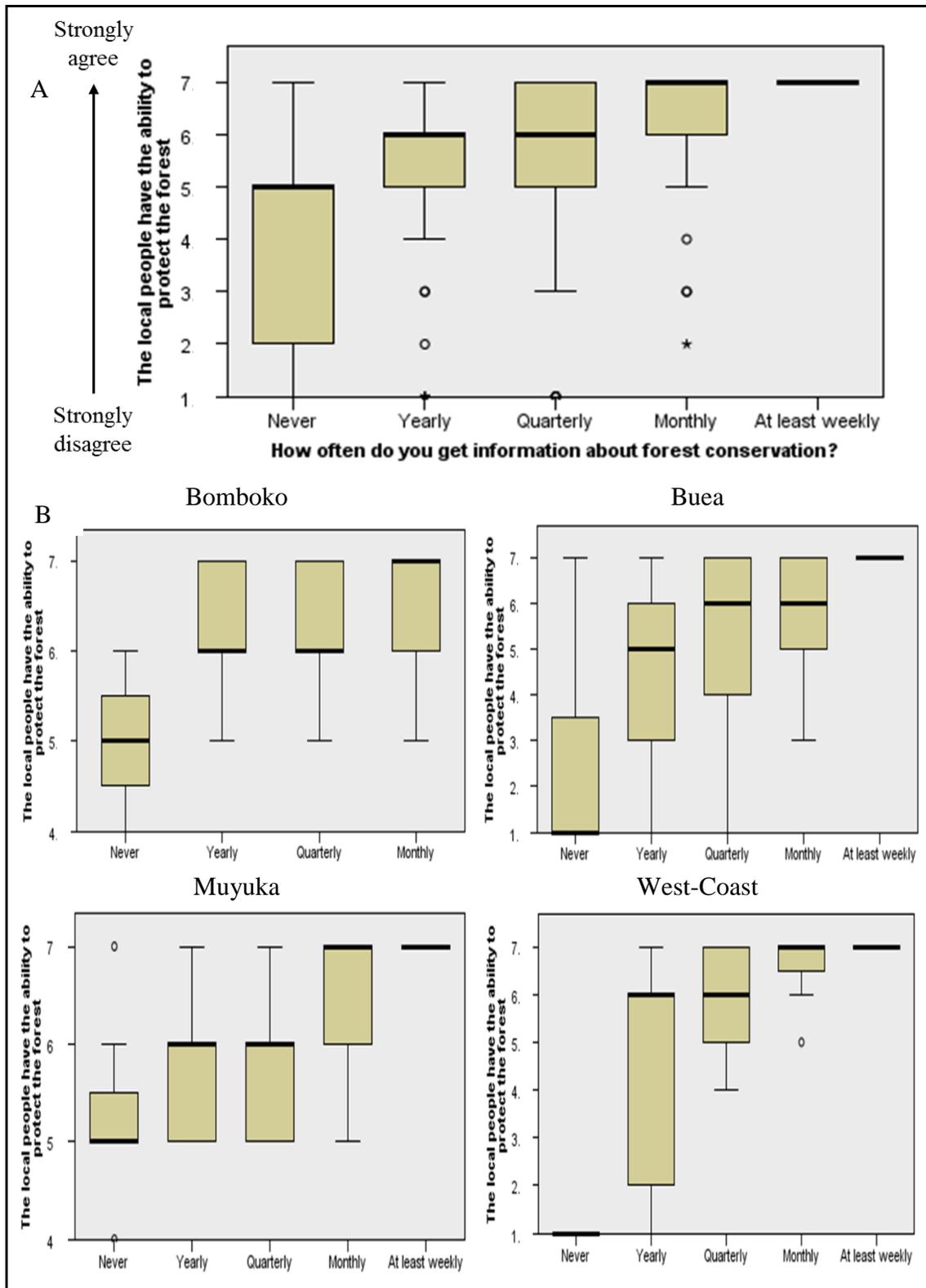


Figure 6.9: Kruskal-Wallis plots revealing direct-relationship between perception of local ability to protect forest and frequency of information received within MCNP (a) and each cluster (b).

The significant linear regression models (Table 6.7) show how perception of local ability to protect forest (Perception) relates to frequency of information (A) received on forest issues within each cluster and these are explained by the following significant linear regression equations:

- **Overall:**  $Perception=3.902 + .363(A.)$
- **Bomboko:**  $Perception=5.174 + .425(A)$
- **Buea:**  $Perception=2.411 + .402(A)$
- **Muyuka:**  $Perception=1.951 + .485(A)$
- **West-Coast):**  $Perception=4.992 + .426(A)$

Where A= Frequency of information received.

The model has a fit of 16.3% (overall), 16.8% (Bomboko), 14.9% (Buea), 21.9% (Muyuka), and 17.1% (West-Coast) respectively.

### 6.3.5 Qualitative results

Result shows that respondents talked mostly about forest, sensitisation, village and understanding (Fig. 6.10a), from where one major theme was established as village community sensitisation/knowledge on forest conservation issues (A). Figure 6.10b and table 6.1 further show the types of comments across different levels of stakeholders.

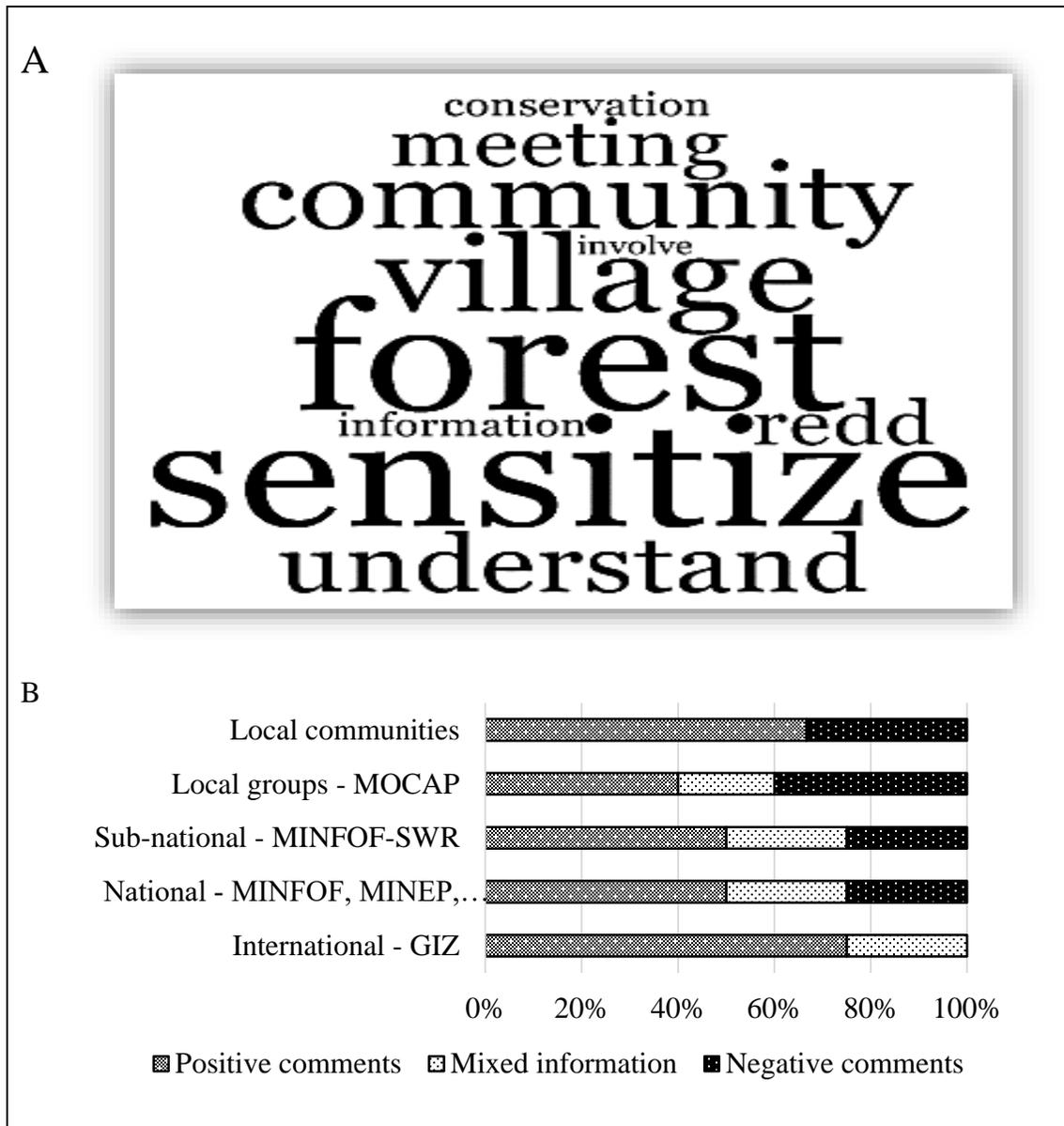


Figure 6.10: Word clouds showing most mentioned words from the interview (a) and types of comments provided by different levels of stakeholders (b) on communication issues around MCNP.

### 6.3.5.1 Village community sensitisation/knowledge on forest conservation issue

GIZ respondent argues that illiteracy does not impede sensitisation within local communities though understanding of the Cameroon forestry law is lacking, but seeks continuous sensitisation to improve awareness.

GIZ: *“I wouldn’t say lack of education is a stumbling block to the sensitisation issue because most of them are aware that the forest is necessary, but they lack alternative... Buea-cluster is quite educated...”*

GIZ: *“There is not much understanding of the Cameroon forestry laws in the communities. We are trying to sensitise the community...”*

GIZ: *“For the last 20 years, there has been continuous sensitisation about conservation of the forest areas...They may know more things, but putting it into practice is another thing.”*

GIZ: *“It took them so many meetings to understand the concepts of conservation credit and bonuses. So we need a continuous sensitisation process. Talking about carbon stock and carbon related issues, I think it will take a long time to sensitise the community to make them aware to a level that they can really participate in this”*

National respondents help clarify the level of engagement of local communities in consultations and capacity building, but hold to the perception that lack of education is a hindrance to REDD+ understanding at local settings.

National: *“During the R-PP preparation, we ran a lot of consultation with local communities to know what they think about REDD+ and what they think they can obtain from REDD+.”*

National: *“CED and IUCN are local NGO who have already organised local capacity building on REDD+.”*

National: *“To the best of my knowledge I don’t think local communities have enough knowledge about REDD+ issue. All these issues are very complex issues to them because they are not so much educated.”*

MINFOF-respondent perceives the villagers as having more information about conservation since they have been sending park servicers to sensitise local communities through meetings, brochures, and even radio, but no assessment has yet been done to assess their level of awareness, and lack of education is blamed for inadequate REDD+ knowledge within communities, which contradicts GIZ’s perception.

Sub-national: *“The Park was created in 2009 and this strategy (conservation development agreement) was put in place in 2012. So we are still in the process of building the foundation and letting people know about the concept. We are using various methods like the sensitisation meeting and brochures. These are the things we use to reach the community with our message, so that even if you are not a member of the cluster platform, or village committee, you can still have a copy of the brochure to read about our objectives and other information about us. We are also using radio.”*

Sub-national: *“If you meet a normal villager he will have the least information about the conservation.”*

Sub-national: *“We send park services to sensitise local communities but we have not yet gone there to assess the level of information they have acquired on conservation issues.”*

Sub-national: *“To the best of my knowledge I don’t think they have enough knowledge about REDD+ issue. All these issues are very complex issues to them because they are not so much educated... the local community still finds it difficult to understand.”*

MOCAP-respondent thinks that while sensitisation and training has been provided, communities’ members preferred working on their cocoa farms than attending meetings.

Local-group: *“When we call for general assembly meeting, some of the chiefs are inform before time. We send the village committee to sensitise them on what MOCAP is doing, we explain to them about co-benefits.”*

Local-group: *“We sensitised and invited all the villages for a meeting and only few came, they complain that this is cocoa season and they don’t have time.”*

Local-group: *“MOCAP trains the youths of this area for job opportunities (Prunus harvesting).”*

Despite the fact that local communities have learnt a lot about conservation, they are not still employed because of lack of secondary school certificate which is a call of concern.

LC: *“We have a programme that teaches us how to manage a forest...”*

LC: *“We have learnt a lot about forest preservation.”*

LC: *“The people whom the park service employed to work in the forest because they have G.C.E ordinary level certificate stand a risk because they do not know the forest.”*

## 6.4 Discussion

Participation and leadership of local communities is vital in co-management of MCNP because co-management requires a shift from telling people what to do or information exchange to an effective and efficient participatory approach that emphasises on groups' interaction (Ramirez & Quarry, 2004) and cannot be achieved without effective communication. It is very important to mobilise indigenous people and local communities' members to fully participate in forestry projects, but they can only be mobilised when communication is effective enough to stimulate collaboration.

Following the Preamble of Cameroon's Constitution, it is mandatory for all citizens to protect the environment, and law N° 2003/006 of 21 April states that FPIC is a prerequisite to carrying-out ecosystem services. The 1996 Cameroon Framework Law on Environmental Management (WIPO, 1996) establishes the rights to public participation, access to justice, access to environmental information and capacity building (Fig. 6.1) (Njamshi et al., 2008).

- Access to information is vital in decision-making because it provides the public with information and knowledge, generating evidence to make better choices about contentious issues;
- Public engagement enables people to express their views, challenge decisions and better design strategies that could hamper communication and development;
- Access to justice enables community members to seek claims when their right to access natural resources are denied, or if they encounter any environmental damage;
- Building capacity is essential because state agencies, civil society and local communities need specific knowledge, technical skills and personal abilities to enable them access public information, get fully engaged and seek for justice (Kiss et al., 2006).

#### **6.4.1 Access to information**

Effective communication is a feasible tool to raise awareness, change attitude and behaviour, and bring appropriate action for effective, efficient and equitable REDD+ projects. In the REDD+ world, communication of information is a currency and a source of power (Angelsen et al., 2012). Though, tribal meeting is the most preferred medium, public hearing has an increment of +12% in preference because it includes settlers who are also members of the community. Participation in MCNP projects directly correlates to frequency of information received. All respondents needed more information, they are eager to learn, understand and appreciate the conservation projects.

#### **6.4.2 Capacity building**

In 2007, UNFCCC COP-13 called upon parties and international organisations to promote REDD by investing in building capacity and demonstration activities (Cerbu et al., 2011). Capacity building of communities helps secure the benefits of REDD+ as well as address its risk, therefore, providing cost-effective REDD+ projects with sustainable co-benefit. Local communities have good knowledge of forest and climate issues as well as knowledge to acquire pollution-free air and the various uses of forest. Their perception towards forest conservation supports the idea that local communities have been good conservator for centuries. Participation significantly relates to the perception of having the ability to protect the forest. Therefore, the perception of “yes, we can” is a powerful tool in enhancing engagement.

#### **6.4.3 Access to justice**

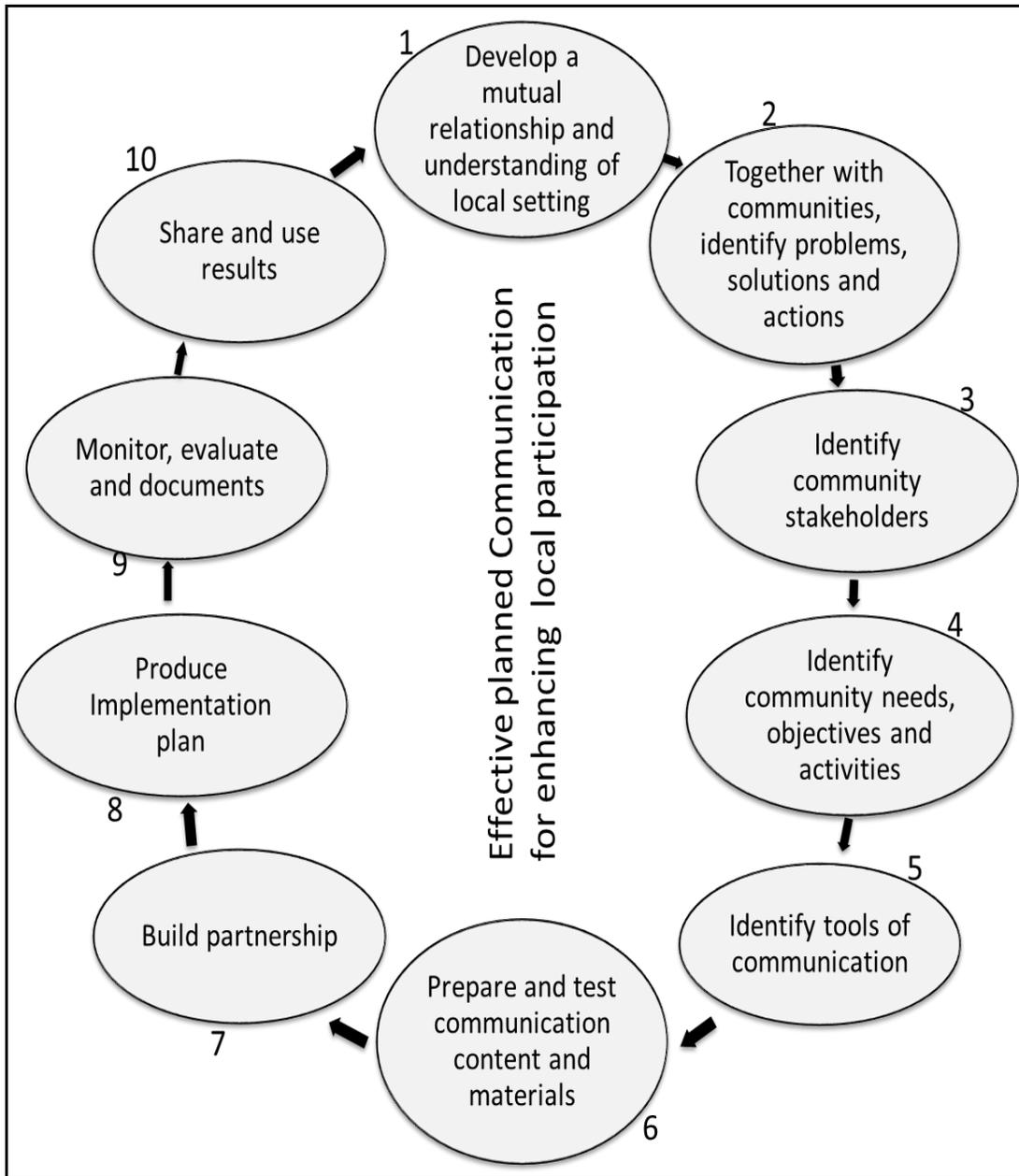
Protecting the rights of local communities in a REDD+ mechanism is a major area of contention in the REDD+ negotiations (Lyster, 2011). One of the main rights applicable to REDD+ is the right to FPIC which allows communities to participate in or reject decisions that affect them. UNDRIP states that, any relocation requires FPIC of local communities concerned and after agreement on fair compensation “*States shall consult and cooperate in good faith with indigenous peoples concerned through their own representative institutions in order to obtain FPIC to approve any project affecting their*

*lands or territories and other resources*” (Wiessner & Historical, 2009). Compliance mechanism and enforcement of these rights depend on the level of recognition of these rights within Cameroon judicial recourse and measures in place. According to International Labour Organisation (ILO) convention 169, “*Governments shall have the responsibility for developing, with the participation of the peoples concerned and coordinates a systematic action to protect the rights of these peoples and to guarantee respect for their integrity*” (Swepston, 1990). Local communities are left out in meaningful participation in MCNP because of illiteracy, inadequate information and low political standing within the country’s power structure. If all Parties were signatory of the UNDRIP, difficult negotiation might be avoided by referring to such human right instruments (Angelsen et al., 2009).

## **6.5 Conclusions and recommendations**

A well informed public is crucial for sustainable development. Building capacity, stakeholder engagement and rights of indigenous people cannot be achieved without effective and appropriate communication because they create public awareness for appropriate actions. All actions that are impacting the environment come from individual. Government with the best forest projects cannot impose it upon locals who neither understand, nor appreciate its importance. Also reluctant government will try to engage in good forest management practices when its people demand it insistently. Effective communication, therefore, remains a tool that can solve climate change issues if carried out effectively. Participation directly correlates to frequency of information received, level of education and perception of being able to protect forest while perception of having the ability to protect forest also correlates to frequency of information received. Effective communication is a tool which can transform people from individual centred deficit model of learning, behavioural change to a collective and community-focused model of participation, appreciation and equity. Only 1.9% of park villagers have heard of REDD+ because proponents want to avoid raising hopes unnecessarily, but there is need to avoid asymmetries of knowledge from leading to paternalistic modes of management. To facilitate a more people-centred approach in mitigating and adapting to climate change, planned continuous communication is needed

to facilitate full and effective engagement of local stakeholders in project planning, implementation and monitoring. Figure 6.11 may be used as reference point to improve communities' participation through planned and continuous communication.



*Figure 6.11: Proposed steps for effective planned communication to enhanced communities' participation in natural resource management with number 1 being the starting point.*

Access to information should be adequate and timely in a language and manner understood by local communities. Access to information such as forestry codes and laws should be made available in local languages and outreach of applicable management regulations be enhanced. Forest managers and community leaders should endeavour to engage in clear communication using processes and channels that empower women and make them own land. Using the term ‘Mother Earth’ or ‘Our Forest’ gives people the urge to claim ownership and fully engage in forest projects. When members of local community are involved in communication strategies, it enables them to take ownership of natural resource management projects, rather than being mere beneficiaries of the projects. Therefore, park managers should engage in clear and effective communication to enhance participation of local communities in natural resource management.

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## 7 Quantifying local communities' voices in the decision-making process: from Mt. Cameroon National Park REDD+ Projects

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*Keywords: Appropriate communication, Local consultation, Trinity of voice, Environmental legitimacy, Social safeguard*

### **Abstract**

One key component in developing local communities' sustainability is the ability to negotiate and make contentious environmental decisions. However, few studies evaluate the influential role played by local communities during the consultation and decision-making process. This study examines the communities' voices during consultation and decision-making process to evaluate its appropriateness for contributing and enhancing environmental legitimacy. Cluster multi-stage random sampling was used to collect data from 259 respondents around Mount Cameroon National Park (MCNP) which were analysed using Chi-square, Mann-Whitney, t-test, Kruskal-Wallis, Jonckheere-Terpstra tests and NVivo. Results show that the level of local participation in MCNP-REDD+ projects directly relates to both standing and influence accorded to delegates of local communities during consultation and decision-making processes. The study reveals a direct correlation between level of standing accorded to local stakeholder and ability to influence decisions. Although park managers understood local communities' concerns, these concerns are not being addressed. Local communities' delegates are accorded access, but they are neither accorded standing at the decision-making process nor the ability to influence REDD+ design within MCNP. Standing and influence accorded to all stakeholders must be adequately balanced for equity and ethical considerations as well as to generate sustainability and environmental legitimacy of forest projects.

## **7.1 Introduction and background**

The cultural and natural resource management norms of local communities are not readily accommodated in conventional resource management planning because of lack of appropriate communication and meaningful consultation between regional forest managers and local communities (Stevenson & Webb, 2003). Stakeholder engagement and social safeguards are essential elements for the success scheme of natural resource management. One of the requirements of Reducing Emissions from Deforestation and land Degradation, conservation and enhancement of carbon stock (REDD+) under the Cancun agreements is full engagement of relevant stakeholders (Lang, 2010). Local participation at the national and sub-national levels ensures effective communication, dialogue and sharing of information and knowledge among the private, public and civil society to better comprehend the needs, capacities and expectations for good governance (Robledo et al., 2008). Berkes et al. (2009) argue that, for conservation actions to succeed, active negotiation framework must be developed and geared towards sustainable resource management. Therefore, there is need for collaborative decision-making between park managers and local communities (Wells et al., 2004) for sustainability of the MCNP project.

In 2008, during the Global Indigenous Peoples Consultation on REDD, communities' challenges on participation in REDD+ were identified such as lack of traditional knowledge and structure for decision-making; recognition of indigenous identity; right to free, prior and informed consent (FPIC); indigenous representation and cultural process in decision-making; recognition of women and potentials to contribute to REDD+ (UN-REDD, 2008). Some challenges included exclusion from REDD+ activities or eviction, exploitative carbon contract with unfair benefits to communities, inadequate information and elite capture in REDD+ benefits (Lawlor & Huberman, 2009). In this regard, the International Labour Organisation's (ILO) Indigenous and Tribal Peoples Convention N° 169 (ILO, 1989; Swepston, 1990) and the United Nation Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007) shall act as a reference legal framework.

According to Freudenthal (2011), local communities in Cameroon are often excluded from participating in forest decision-making process, no rights with little or no support from national institution. During the 2013 National Dialogue on REDD+ Governance meeting held in Yaounde, one of the challenges identified was how to encourage active community engagement in the REDD+ process (Cecile & Augustine, 2012), particularly for local communities and women. It was noted that past effort to involve local communities did not consider their traditional needs, build interpersonal trust nor involve legitimate representation that are chosen by the local communities themselves. It was agreed that methods of communication, mode of representation and capacity for engaging members of local communities should be improved. With the reported risks of conflict in Cameroon between local communities and management authorities, there is need to support safeguards that reduce risks of conflict over natural resources in all negotiation mechanism (Lyster, 2011; Cotula & Mayers, 2009).

Community based natural resource management (Cox et al., 2010) and co-management models are practise within MCNP and require full engagement of all stakeholders from the design, implementation, monitoring, evaluation and decision-making. State legislation on participation contributes to good governance and empowers the vulnerable local communities (Bond, 2009). As stated by Costenbader (2009); *“National legal provisions on participation in the forest sector should be created, or strengthened and adapted to ensure transparent and informed decision-making, build partnerships, facilitate law enforcement, and prevent conflicts and corruption in relation to REDD+.”* REDD+ donors and civil society stakeholders have emphasised the need for full and effective engagement of relevant stakeholders - particularly forest communities in REDD+ planning and implementation (Williams, 2013).

The Mount Cameroon Nation Park conservation initiative is one of the four pilots REDD+ projects in Cameroon along with Takamanda National Park, the Korup National Park and the Dja Biosphere Regional REDD+ projects (Sama & Tawah, 2009). In 2006, the Forest Governance Facility (FGF) was created by the Ministry of Forestry and Fauna in partnership with the Department for International Development and the Netherlands Development Organisation in Cameroon. In order to enhance stakeholders’ engagement,

the FGF, and the Forest and Environmental Sector Programme work together to facilitate the active involvement of private and local stakeholders in developing and implementing government policies in the forestry sector (The REDDDesk, 2013). Planet Survey took over the function of FGF in 2009, as it was required that this function be transferred to a national civil organisation after two years (Dkamela, 2011).

Presently, a National REDD+ Committee, comprising various ministries and stakeholders involved in implementing a national REDD+ strategy has been formed and acts as a point of contact between the government and the organisations like the German International Cooperation that establishes dialogue and discussions with local stakeholders within the MCNP-REDD+ projects. Structural clarification of the REDD+ process in Cameroon is carried out by the Forest Carbon Partnership Facility (FCPF). Three challenges in REDD+ stakeholders' process have been identified to be insufficient engagement of indigenous peoples, lack of emphasis on incorporating stakeholder feedback and poor access to information (Williams, 2013).

Cameroon Readiness Plan Ideal Note (R-PIN) which was submitted to FCPF in July 2008 (Cameroon R-PIN, 2008), did not indicate the extent to which meaningful participation occurs in practice and local communities engagement is oriented towards exchange of information rather than active participation and is largely driven by NGOs (Davis et al., 2009). Local communities especially women are mostly not involved in decision-making, consultation and participation in REDD+ (Othman et al., 2003). One of the external reviews from Cameroon's R-PIN was the request of effective consultation with state and forest sectors stakeholders like hunter-gatherers, community forest managers and local communities. In January 2013, FCPF approved \$3.6 million to fund Cameroon's Readiness Preparation Proposal (R-PP) (FCPF, 2013). Cameroon is now challenged with delivering its R-PP's commitments. Cameroon's R-PP proposes to develop legislations which include stakeholders' consultation, transparency, inclusiveness, and engagement of indigenous peoples, forest dwellers and women. Strategies for achieving these commitments included multi-stakeholder platform, procedures for Free, Prior, and Informed Consent (FPIC) of affected communities and feedback mechanism for stakeholders input (Cameroon R-PP, 2012). There is need to

ensure engagement of local stakeholders and a two-way dialogue on REDD+ strategy development.

*“A public sphere is the realm of influence that is created when individuals engage others in communication through conversation, debate, or questioning of subjects of shared concern”* (Cox, 2012). REDD+ decision-making has triggered competing demands from specific experts (scientific/technical), decision-making by government bodies and demands inclusion of local communities, and this might flashpoint competing perspective escalating to conflict. The Trinity of Voice Theory holds that the key to communication process is an ongoing relationship of mutual trust which enhances communities’ cohesiveness and capacity, and results in good environmental decisions and the practice of access, standing and influence is necessary to build and maintain mutual trust and relationship (Depoe et al., 2004). Access refers to sufficient and appropriate opportunity to express your opinion or make a choice. Standing refers to the civil legitimacy, esteem, respect for all stakeholders’ opinions or perspectives. To achieve influence, access and standing must be mutually dependent. Sen (1999) argues that, the freedom to have a say (voice), make choices and take appropriate action is an end of, as well as a means that is geared towards sustainable development.

This study examines the communication structures, negotiation and decision-making processes and how these affect environmental legitimacy of MCNP-REDD+ projects. It examines whether local communities are accorded standing at decision-making process to influence contentious decisions. The results are used to access how standing accorded to local communities correlates to participation/engagement in MCNP activities and also with the ability to influence contentious forest decisions.

## 7.2 Methodology (See 1.6)

### 7.3 Results

#### 7.3.1 Legitimacy in consultation and decision-making process

Figure 7.1 shows that respondents agreed on the use of simple sentences, that meetings are easy to get involved, there is provision of accurate information, explanations of decisions and sensitisation before projects. But respondents slightly agreed that their concerns were being understood by proponents and that they were deciding projects. Even though park service managers understood their concerns, their opinion did not count at discussion-table and they are not influencing final decisions. Bomboko registers the lowest degree of agreement for both ‘standing’ and ‘influence’ as well as participation in MCNP activities (25.8%) compare with Buea (32.4%), West-Coast (39.5%) and Muyuka (42.9%).

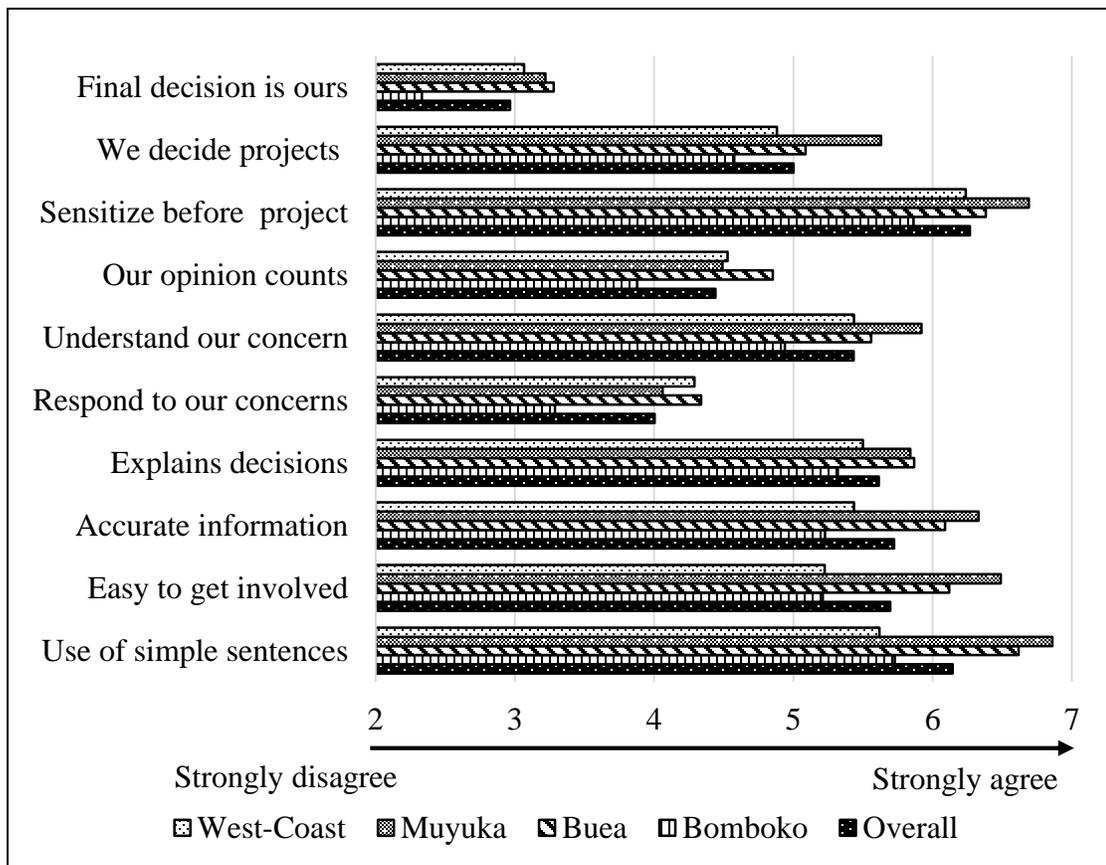


Figure 7.1: Mean-score of effective and appropriate communication conditions that enhances environmental legitimacy in forest projects.

### 7.3.2 The influence of standing on participating in MCNP activities

Perception of standing is significantly higher for those that participated (Mdn=5) than those who did not participate (Mdn=4) (Fig. 7.2a) as well as within each cluster (Fig. 7.2b). The study shows a significant relationship between participation and standing accorded to local stakeholders  $\chi^2(6)=17.521$ ,  $p=.008$ . Spearman  $r=.172$ ,  $p=.005$ .

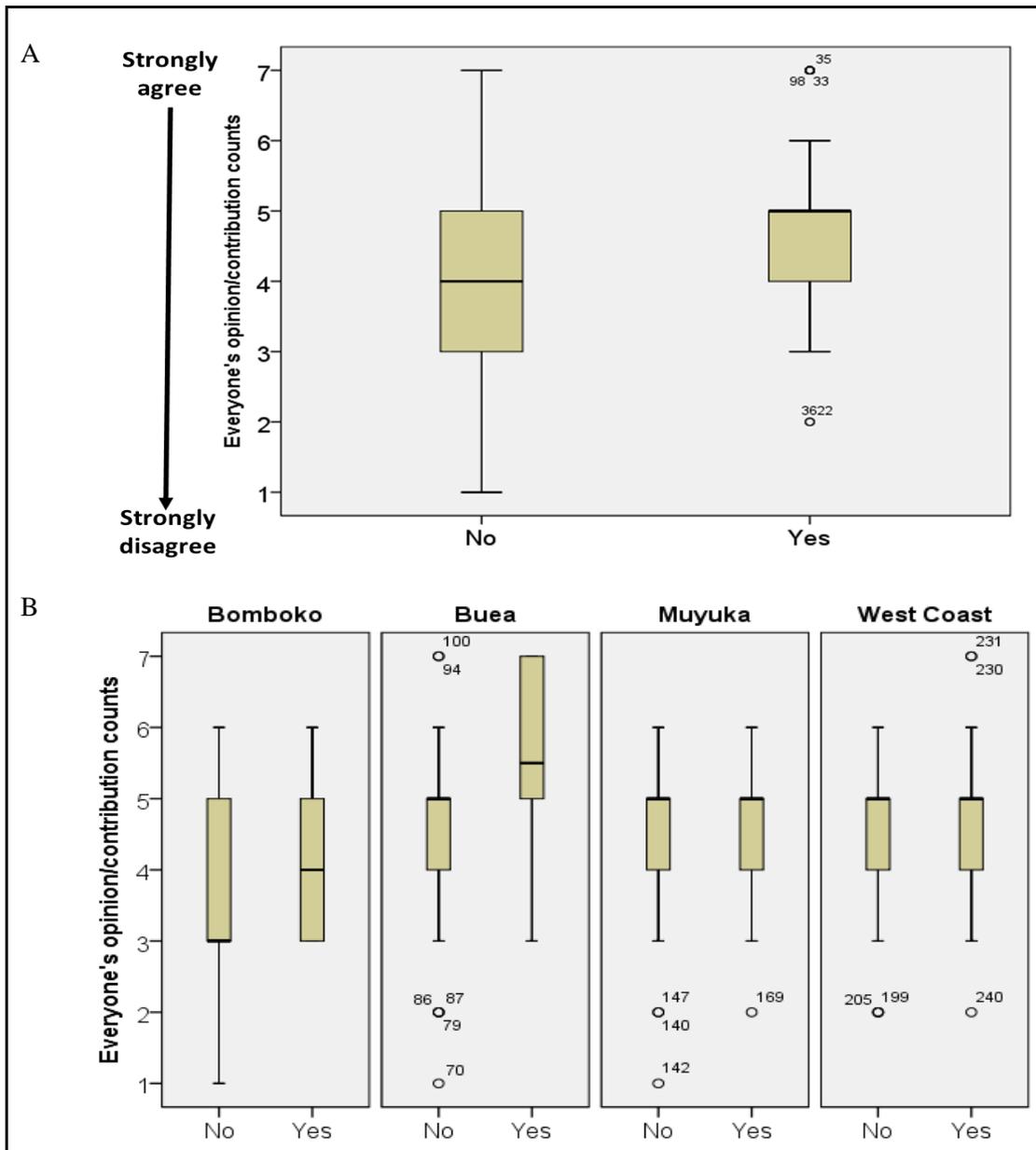


Figure 7.2: T-test plots showing comparison of standing between participants and non-participants in MCNP-activities groups (a) and within each cluster (b).

Perception of standing is not normally distributed ( $p$ -values $<.05$ ) except within West-Coast (Table 7.2). The variance are generally unequal ( $p<.05$ ), but roughly equal within all clusters ( $p>.05$ ), hence, we use non-parametric test. A Mann-Whitney U test shows that participation in MCNP activities is significantly affected by standing accorded at decision-making process with a medium effect ( $p<.001$ ,  $r=.22$ ) as well as in Buea ( $p<.05$ ,  $r=.37$ ). Results show a non-significant relation with a small effect size in Bomboko ( $p>.05$ ,  $r=.18$ ), Muyuka ( $p>.05$ ,  $r=-.031$ ) and West-Coast ( $p>.05$ ,  $r=.071$ ). The t-test shows a significant difference in standing between the non-participants and participants in MCNP activity groups (Table 7.2). The study reveals a significant correlation between standing (predictor) and participation in MCNP ( $T=-3.278$ ,  $df=196.93$ ,  $p<.001$ , 95% BCa:  $\{-.782, -.236\}$ ) as well as in Buea ( $T=-3.278$ ,  $df=64$ ,  $p<.005$ , 95% BCa CI:  $\{-1.755, -.426\}$ ).

A regression model analysis (Table 7.3) to investigate how standing correlates with participation, shows an overall direct correlation between participation (P) and standing (S) accorded to local stakeholders in MCNP as well as in Buea and they are explained by the following significant regression equations:-

- **Overall:**  $P=1.021 + .195(S)$
- **Buea:**  $P=.701 + .374(S)$

*Where P=Participation; and S=Standing accorded to local stakeholders at decision making process*

The overall model shows that participation will increase by a factor of .195 at every one unit increment in standing. The regression model has a small fit of 3.8% degree of accuracy and the overall model is significant at  $F=10.15$ ,  $p=.002$ . In the Buea cluster, participation will increase by a factor of .374 with a unit increase in perception of standing. The regression model has a small fit of 12.7% and the relationship is significant at  $F=10.74$ ,  $p<.002$ . A summary of results is found in table 7.3.

Test of normality shows  $p$ -values $<.05$ , therefore, perception of standing is not normally distributed though equal variance are assumed ( $p$ -values $>.05$ ). Therefore, we use non-

parametric Kruskal-Wallis test for four independent samples. Kruskal-Wallis test shows that, standing is significantly affected by belonging to a particular cluster  $H(3)=21.288$ ,  $p=0.00$ . Further pairwise comparison with adjusted p-value shows a significant difference between standing accorded to members of Bomboko cluster compare to West-Coast ( $p=0.12$ ,  $r=-.257$ ), Muyuka ( $p=.028$ ,  $r=-.264$ ), and Buea ( $p<.0001$ ,  $r=-.388$ ). Result reveals a non-significant difference in standing accorded to West-Coast compare to Muyuka ( $p=1$ ,  $r=.007$ ) and Buea ( $p=.753$ ,  $r=.126$ ). Study also shows a non-significant difference in standing between Muyuka and Buea ( $p=1$ ,  $r=.119$ ). Jonckheere-Terpstra trend test reveals a significant trend in the data from Bomboko, West-Coast, Muyuka and Buea with an effect size of 0.145 ( $J=14008$ ,  $z=2.340$ ,  $p=.019$  and  $r=.145$ ). Summary of result is found in table 7.4.

### **7.3.3 The influence of standing on ability to influence contentious decision**

The study shows that the ability to influence contentious decision significantly relates to the level of standing accorded to local stakeholders (Fig. 7.3) at  $\chi^2(6)=114.772$ ,  $p<.0001$ .

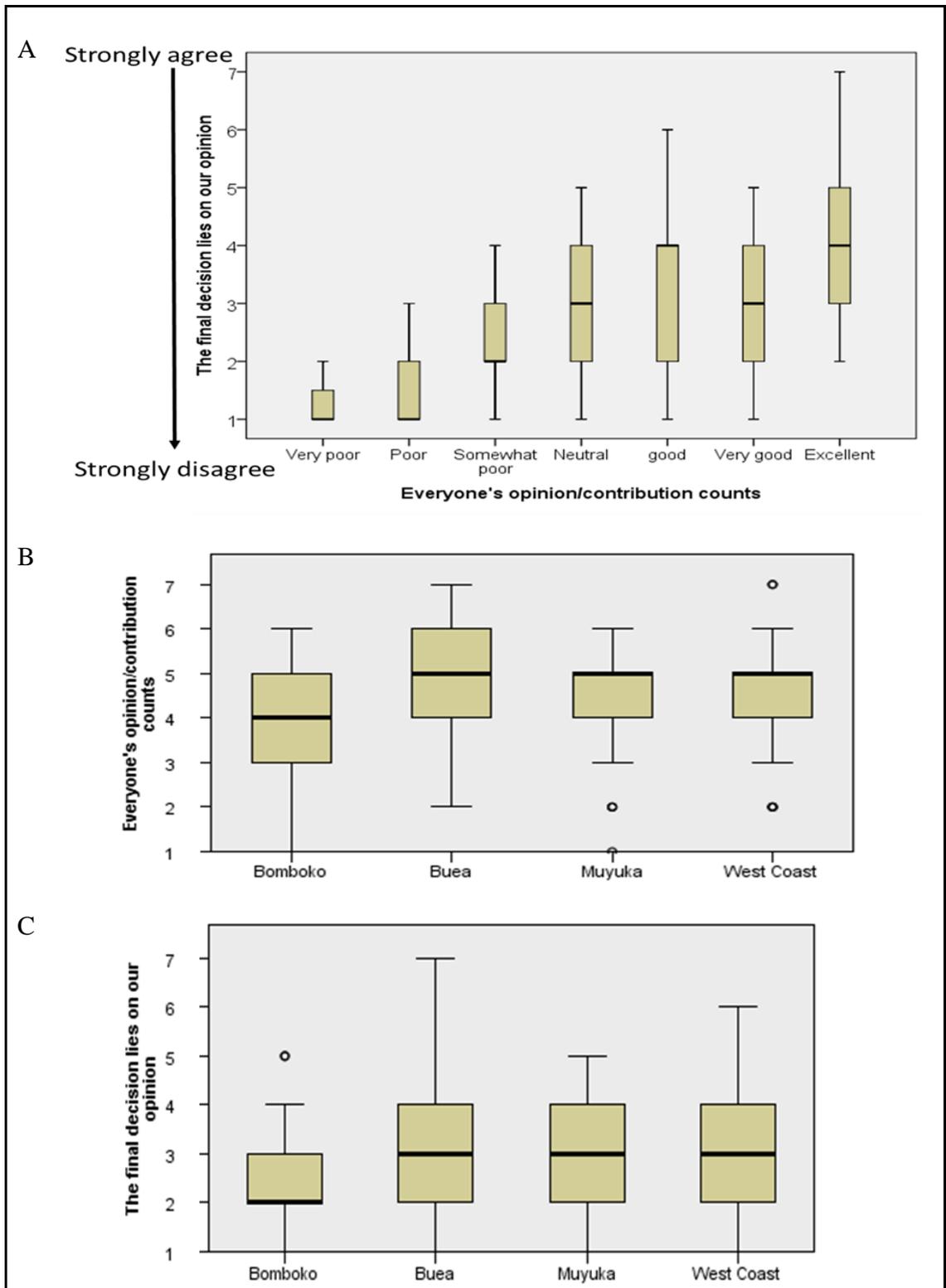


Figure 7.3: Direct-relationship between standing and influence in all clusters (a); and Jonckheere-Terpstra tests in standing (b) and influence (c) within clusters.

To further investigate the influence of standing on perception of influencing decisions within different clusters, a Kruskal-Wallis test and trends (table 7.5) as well as regression analysis was conducted and summary of results are shown in table 7.6.

Test of normality shows p-values<.05 and the variance are not significantly different across clusters p-values>.05. Kruskal-Wallis test shows that ‘influence’ is significantly affected by being in a particular cluster ( $H(3)=25.8$ ,  $p=.00$ ) Further pairwise-comparison with adjusted p-value shows a significant difference between influence accorded to members of Bomboko cluster compare to West-Coast ( $p=.001$ ,  $r=-.311$ ), Muyuka ( $p<.0001$ ,  $r=-.379$ ), and Buea ( $p<.0001$ ,  $r=-.384$ ). Result shows a non-significant difference in influence accorded to West-Coast compare to Muyuka ( $p=1$ ,  $r=.07$ ) and Buea ( $p=1$ ,  $r=.072$ ). Finally there was a non-significant difference recorded in influence, between Muyuka and Buea  $p=1$ ,  $r=.001$ ).

**Trends:** Jonckheere’s test reveals a significant trend in the data from Bomboko, West-Coast, Muyuka and Buea with an effect size of 24% ( $J=14630$ ,  $z=3.29$ ,  $p=.001$  and  $r=.24$ ). Significant models showing direct correlation between standing (S) and influence (I) accorded to local communities as well as in Muyuka and West-Coast cluster are explained by the following significant linear regression equations:

- **Overall:**  $I=1.088 +.432(S)$
- **Buea:**  $I=1.178 + .453(S)$
- **West-Coast:**  $I=.505 + .541(S)$

*Where I=Influence at decision making process; and S=Standing accorded at decision making process*

The overall model shows that the perception of influence will increase by a factor of .423 at every one unit increment in perception of standing. The regression has 18.6% degree of accuracy and the overall model is significant at  $F=58.91$ ,  $p<.0001$ . In Buea influence will increase by a factor of .453 with a unit increase in perception of standing. The regression model has a small fit of 19.3% and the relationship was significant at  $F=17.03$ ,  $p<.001$ . In the West-Coast, the regression has a medium fit of 28.3% and the

relationship is also significant at  $F=30.65$ ,  $p<.001$ . The study shows that influence will increase by a factor of .541 with a unit increment in standing (Table 7.6).

### 7.3.4 Qualitative results

From the word clouds, interviewees talked mainly about cluster, platform, park, village and conservation (Fig. 7.4a), from where two themes were deduced: park/village conservation development agreement (A) and activities at cluster platform meetings (B). Figure 7.4b and table 7.1 further show the types of comments across different levels of stakeholders.

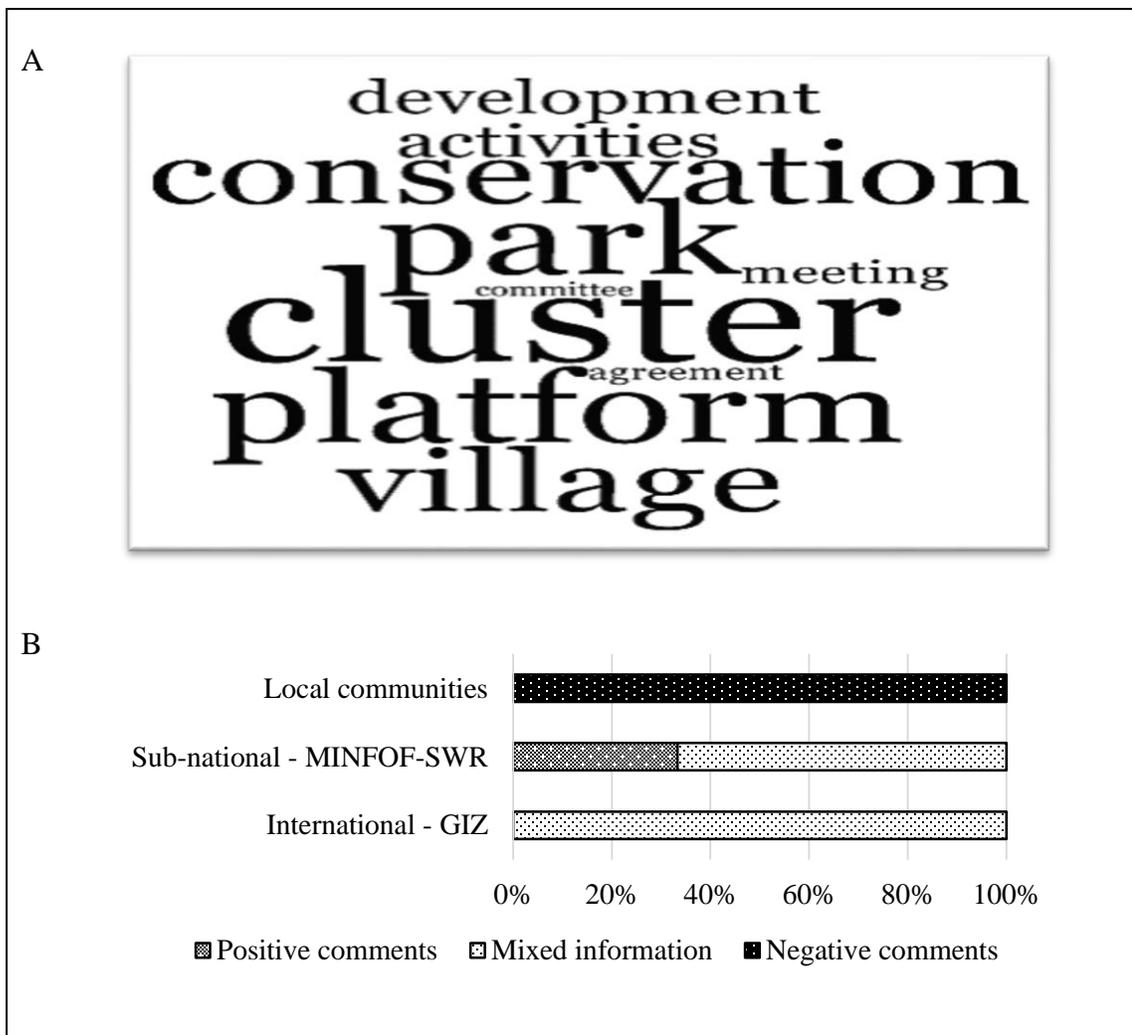


Figure 7.4: Word clouds showing most mentioned words from the interview (a) and types of comments provided by different levels of stakeholders (b) on standing and influence at decision-making process within MCNP.

#### **7.3.4.1 Village conservation development agreement**

GIZ elaborated the involvement of local communities during negotiation. Together with MINFOF-SWR, they further explained the importance of the conservation development agreement in defining roles and responsibility within MCNP.

*GIZ: “The park service itself is working with the 41 communities and what they are doing is that they are trying to implement the ‘conservation development agreement... They will be negotiating conservation development agreement with the communities where they will look at roles and responsibilities of the park service management and local communities. And they write this in a document called the conservation development agreement which then will be signed from both sides.”*

*Sub-national: “The document of conservation development agreement segregates the activities of the conservation and defines also the responsibilities in the park...”*

#### **7.3.4.2 Activities at cluster platform meetings**

Though sub-national respondents said they were not imposing on local communities, all five local communities’ respondents hold firmly that the park managers are imposing and not taking their contribution into consideration. There is evidence to show that the cluster platform meetings is mainly an explanation session rather than a negotiation forum, where local committee report activities done within the last six months including report of any illegal activity, and are assigned the next six months task.

*Sub-national: “**We do not just impose**, that is why a preliminary study was needed so that they can appreciate what is being done to them. We realise that if the community are not well informed about the activities of the park management, there are going to be suspicious and we will not be able to assess them well in decision-making. So the platform meeting holds once every six months **to present what we have achieved** in the last six months and **what will be done** in the next six months. We have the opportunity in this meeting **to get report** of the different activities, the main findings, observations as far as park management is concern. We also use this as a sensitisation platform where **we explain** to the conservation members the approach we are using to work sustainably,*

*that they have to abide to the forestry law that have to do with conservation activities inside the park or outside the park. So it is such a wonderful exchange.”*

Sub-national: *“In each of these villages we have the village sanction committee, three members are elected ....one must be a woman. The village committee meet up now in a higher level called the cluster platform. ... It is in this cluster platform that **the park service is able to present the activities to participate in the next six months. They (local delegates) choose the people who are going to work** in this activity and they are actually paid. The village committee send three members each to present what have been done.”*

Sub-national: *“It (Cluster platform) is such an interesting forum because ... the park has been able to contract a **cluster facilitator** who can read, write and we are building his capacity in what he is doing. It is his responsibility to **animate the village committee and the cluster platform**. We have meetings at the end of every six months where these cluster facilitators are participating and **they give us reports of everything and illegal activities.**”*

Sub-national: *“The cluster platform is where **we sensitise them about the plans**. We have a cluster facilitator who understands English and the local language very well so that he can communicate with us and the villagers effectively. Most of the people at the cluster platform are educated to a certain level so when **we make presentations** even in pidgin, **we expect them** to go and explain to the villagers in the village meeting in a language that is best understood by them. But we don't leave the task only to the cluster facilitator or members of the cluster platform that is why we organise meetings with village heads who are not part of the cluster platform and **we explain to them** in an easier way because the knowledge about park management and conservation varies with the level of education of the people ..., but members of the cluster platform have more knowledge than those at the village meetings.”*

Sub-national: *“The park collaboration management unit can show you some reports, but they cannot give you everything like that because there is a lot of information in the reports.”*

LC-Respondent: *“They ask us to form forest committees and they tell us what to do. They sometimes impose, like when they propose an idea and we argue against it, they don’t listen to us.”*

LC-respondent: *“When they write or say anything, they expect us to just follow without arguing and that is not correct.”*

LC-respondent: *“They cannot better preserve the forest without the help of the indigenous people. We want to join hands and work with them, but they should not impose on us again.”*

LC-respondent: *“We suggested that we should catch people who are doing illegal activities in the forest, but they refused that we should only report to them. But when we see such illegal activities and report to them, before they reach at the scene the person committing the act has escaped. So you see that they are imposing and it is not helping.”*

### **7.3.5 Communication and negotiation processes**

The cluster-platform is the information hub between park managers and park villages (Fig. 7.5). It is a medium for planning, implementation and evaluation of co-management and development issues. Three members of each village are represented at the cluster-platform and one of them must be a woman. These members are elected from the Village Forest Management Council (VFMC) (Fig. 7.6), which each village is obliged to have.

The cluster facilitator facilitates the communication between park service, the villages and the cluster-platform (Fig. 7.6). He/she builds and maintains a trust-worthy relationship within his/her cluster. The cluster facilitator reports on latest developments concerning the management activities (work-plan, records), agreement and illegal activities. Together with park service, s/he organised the cluster platform meetings proposed two months in advance. The agenda is discussed with the park service and village suggestions are collected during regular village meetings.

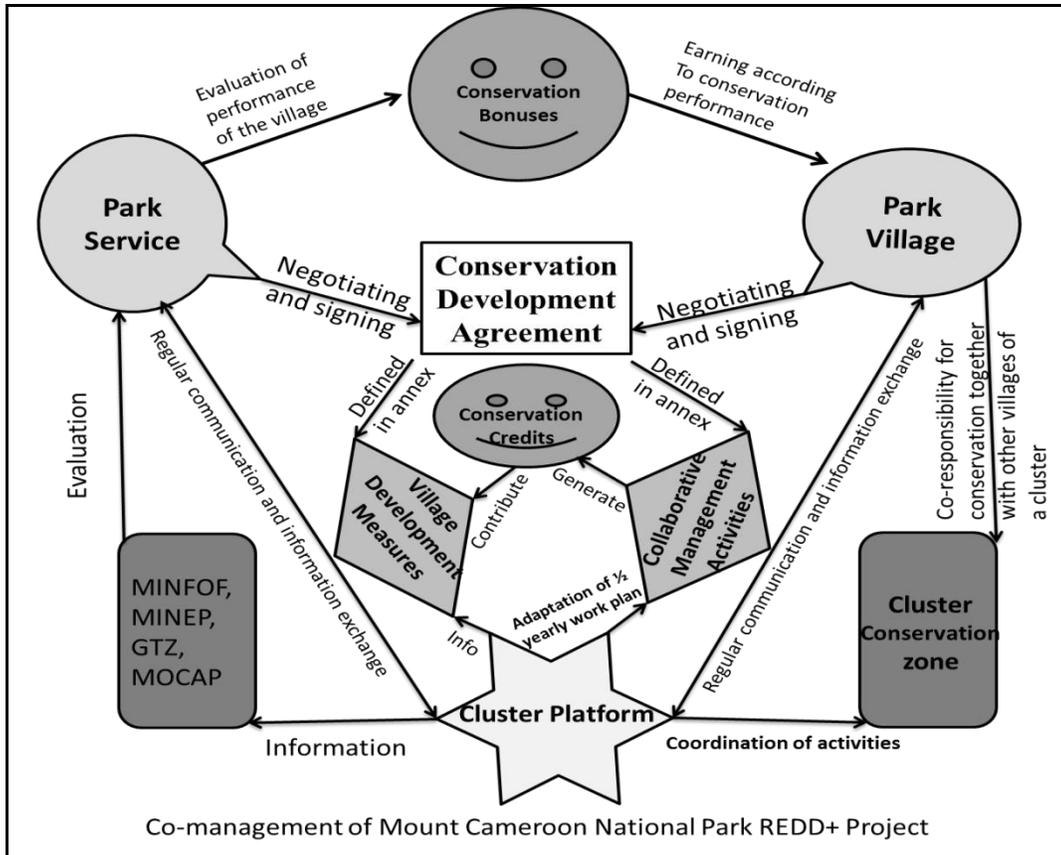


Figure 7.5: Structure of communication in the co-management of MCNP

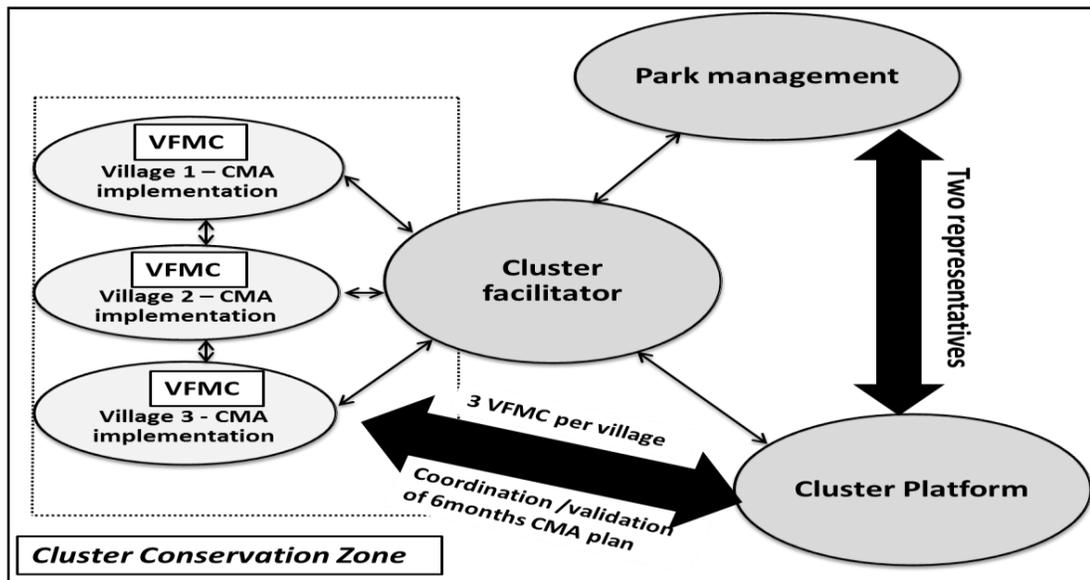


Figure 7.6: A schematic representation at cluster platform showing the role played by the cluster facilitator in coordinating and facilitating information-flow within and outside each cluster.

Negotiation and signing of CDA (Fig. 7.7a) are carried out by relevant stakeholders on park and three village delegates. It is signed by a conservator and a chief who is seldom educated enough to make sound decision. The CDA defines roles and responsibility and states incentives for collaboration. The park service together with the conservation partners proposed a six months work plan for each cluster (Fig. 7.7b). The Collaborative Management Activities (CMA) proposed by park managers is discussed, complimented and adopted by the members of the cluster. These activities are performance-based rewarded and include boundary tracing, reporting illegal activities and encroachment, and sustainable harvesting of NTFP.

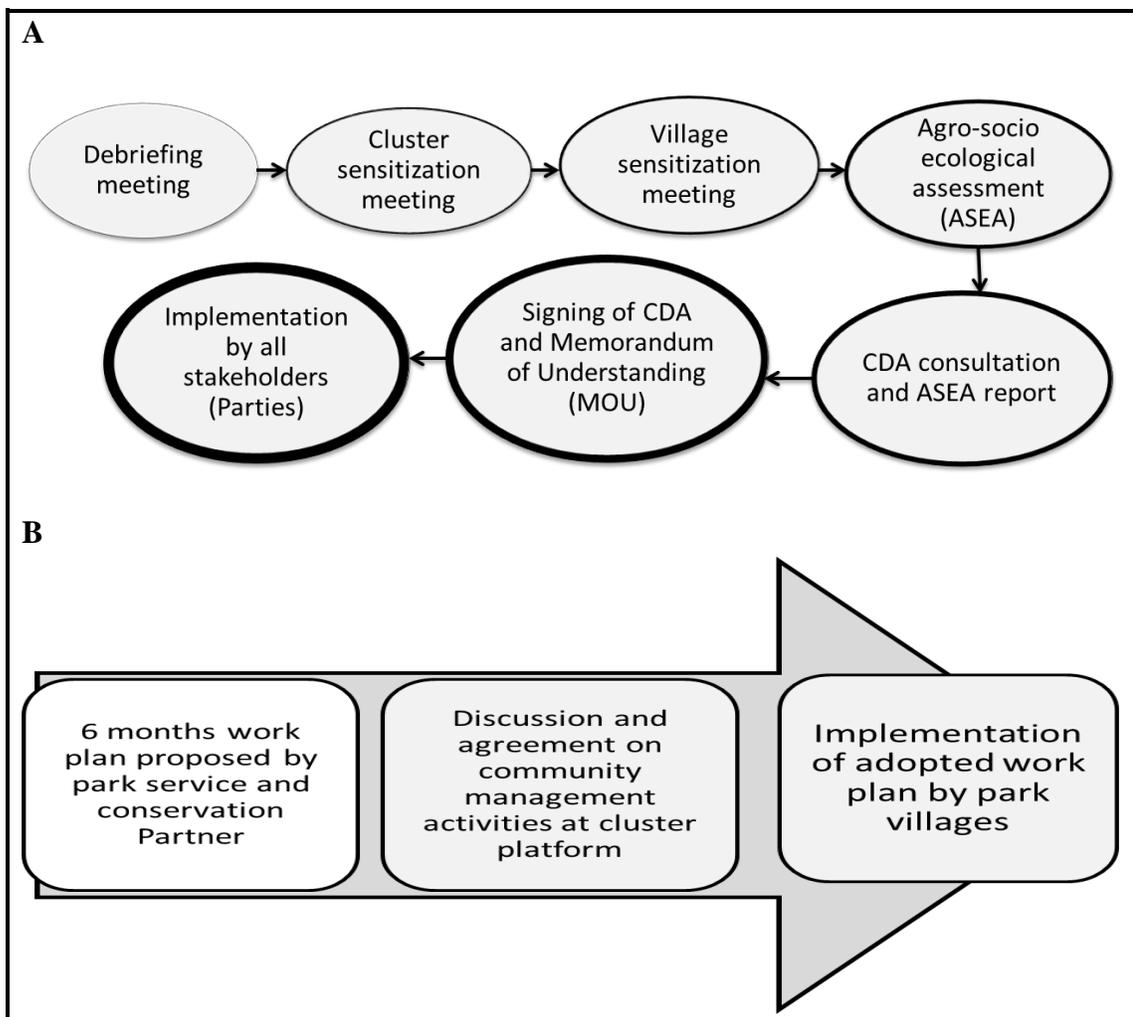


Figure 7.7: The conservation development agreement elaboration process (a) and negotiation process (b) for collaborative management activities in MCNP.

## 7.4 Discussion

According to Preskett et al. (2008), effective substantial dialogue with local communities is essential in determining equity, effectiveness and efficiency of projects. One of the key components in local communities' sustainability relies on its ability to negotiate and make contentious environmental decision. The 1996 Cameroon Framework Law on Environmental Management (WIPO, 2006) (art. 7) states that "*All persons shall have the right to be informed on the negative effects of harmful activities on health and the environment as well as the measures taken to prevent or compensate these effects*" while art. 9(e) emphasis on "*the right of every citizen to have access to environmental information*" and further requires that "*decisions on the environment shall be taken after consultation with the sector of activity or groups concerned, or after a public debate when they are of general nature.*" The 1994 Forestry Law emphasises on public engagement especially within local community forest with involvement of the government, private sectors, communities and forest dwellers. This study shows that full engagement of local communities is lacking due to lack of standing and influence accorded to local communities at consultation and decision-making process within MCNP conservation projects.

### 7.4.1 Access to information

In communication process, interpersonal trust is defined as "*reliance upon the communication of another person in order to achieve a desired but uncertain objective in a risky situation*" (Giffin, 1967). Griffin argues that it depends on the listener's perceptions of a speaker's expertise, activeness, intentions, reliability, personal qualities and perception of the listener's association. A message might not achieve its objective if interpersonal trust is lacking. In MCNP, information is provided in simple understandable language which is easy to get involved. Villages have access to information, but there is doubt if members of local stakeholders adequately understand this information prior to decision-making. The low level of literacy is also a contribution to lack of adequate understanding, capacity and skills to debate and decide on contentious issues. There is sensitisation before projects and proponents do explain decisions of projects. But local stakeholders should have been involved in suggesting the

projects rather than proponents providing them with different projects and allowing them only to prioritise them. However, they are accorded access at cluster-platform. The cluster facilitator may have been doing a good job.

#### **7.4.2 Consultations, negotiation and decision-making process**

The aim of effective communication is to empower local communities with information so they can engage in the decision-making process. It is very important to mobilise local communities to fully participate in forestry projects, but they can only be mobilised when communication is effective enough to stimulate collaboration. Local communities are at the centre of forest discussion and communication is important for their mobilisation, decision-making and action, awareness-raising, sharing knowledge, changing attitudes, behaviours and lifestyles. Local communities involved in MCNP-REDD+ projects should be influencing project design and implementation through effective consultation during the cluster platform meeting held every six months. If communities are not accorded standing, how then can they influence projects? The lack of standing accorded to local community voices at cluster platforms renders the decision-making process illegitimate and inappropriate.

Co-management of MCNP entails full participation of local communities that are also co-managers with park service workers. As reported by the German International Cooperation, the co-management and communication structure (Fig. 7.5) is constructed to:-

- Enable availability of full information on the values, needs and consent related to forest, create a sense of ownership among participating stakeholders and facilitate law enforcement (Christy et al., 2007);
- Increase accountability, legitimacy and credibility of public authority (Shelton, 2009) and probably minimising corruption;
- Facilitate institutional cooperation, provide opportunities for exchange of information and idea before final decisions are made;
- Create a climate of mutual trust and understanding among participating stakeholders that enhance effective collaboration and co-management

- Raise awareness and build capacity of stakeholders to improve sustainable management of forest; and
- Identify existing land uses and facilitate mutual agreement attainment between park villages thereby, preventing or resolving conflict.

The study found out that this is practically not working because local stakeholder's voices are, neither taking into account, nor are influencing decisions. Inappropriate communication process may lead to lack of mutual trust and conflict.

Local stakeholders are provided access to negotiate, but are denied real standing and influence. While the park service have had access and standing on issues beforehand, local stakeholders are not players until they are invited to be part of meeting sessions. Their comments and opinions are recorded, but the big question is: to what degree were their opinion honoured, considered and reflected upon? Respondents do not agree that their concerns are being addressed, nor their opinions count at decision-making process (no standing). Though they decide what projects they want, final decisions do not depend on their opinion (no influence). The small decision time and lack of adequate forest education for local communities, coupled with the fact that most decisions have already been taken before meeting sessions; which is much of explaining decision with activities schedule; deprive local communities the right to influence decisions.

### **7.4.3 Access to justice**

In 2007, the United Nation Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted by the UN general assembly, recognising the collective right to self-determination of local communities. The right to have a say and influence your own future is known as the right to self-determination. UNDRIP states: "*Indigenous peoples have the right to self-determination. Indigenous peoples have the right to participate in decision-making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions.*" (Culotta et al., 2011). In MCNP, community concerns are poorly addressed; though they decide which projects

they want, the final decision does not lie on their opinion, thereby, revealing a trace of marginalisation.

Within local communities, access is easier to provide, but standing is often trickier. When local delegates are elected to represent the community, and given the opportunity to comment at cluster platform, they exercise a practice of access. Allocating access to decision-making process and denying standing means delegates are technically being denied access. The disparity between expectations and real experiences might make delegates sceptical, distrustful and angry (Cox, 2012). Without legitimacy in standing there is little expectation of influencing outcomes. Similarly, community members with standing who have no access to meetings where their standing may be recognised still have little expectation of influencing any outcome. Denied access and/or standing lead to no influence in decision outcomes, and therefore, is considered as an act of injustice.

Though social conflict is sometimes necessary to challenge social assumption, raises awareness and brings about social change, however, when local conflict occurs, the anger and scepticism persist far beyond a lawsuit with long lasting effect that remain in communities and further erode the fragile confidence or trust with elected officials causing civic disengagement (Depoe et al., 2004). A participatory decision-making process builds communities' ability to engage in a productive ways that enhance their experiences, relationships and sustainability. As of now, only amicable resolution and mediation by cluster facilitators and park managers have been used, there has been no case of arbitration or court judgment. Respondents agreed that forest management system helps to solve forest conflict.

## **7.5 Conclusions and recommendations**

Effective participation enables meaningful influence of all relevant rights holder and stakeholders especially local communities' members who are interested in the process, and includes access to information, consultation, participation in decision-making and projects implementation (CCBA, 2013). The study reveals a direct correlation between participation and standing, and also standing and influence accorded at consultation and decision-making processes within MCNP projects. Delegates have access to cluster

platforms, but are neither accorded standing, nor influencing decision-making. Therefore, local communities are not influencing MCNP REDD+ design. This is evident of a top-down management approach which does not fit into the context of co-management.

The trinity of voice during consultation and decision making process encourages local communities' engagement. Consultations should be timely and effectively conducted with relevant stakeholders. Participation should be appropriate with feedback procedure. Standing and influence accorded to all stakeholders must be adequately balanced to ensure equity, ethics, sustainability and environmental legitimacy of MCNP conservation projects.

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## 8 Examining benefits-sharing mechanism within Mt. Cameroon National Park REDD+ projects

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*Keywords: Payment for ecosystems services, socio-economic expectations, Social safeguards, Local communities, Forest conservation, Cameroon*

### **Abstract:**

Local communities perceive REDD+ as having the potential to conserve forest, generate income, develop communities and increase foreign exchange and are curious to know the extent to which expectation will be met. Yet there are few consensus with regard to benefit expected by community and how these are influencing local engagement in forest projects. Whether REDD+ will marginalise, or benefit local communities, depends on benefit allocation to communities. Cluster multi-stage random sampling was used to collect data from 259 respondents that were analysed using Chi-square, Mann-Whitney, t-test, Kruskal-Wallis, Jonckheere-Terpstra, tests and NVivo. The study shows that participation is significantly affected by perception that payment for ecosystem services is necessary to sustain forest ( $U=10,165$ ;  $p<.0001$ ,  $r=30\%$ ) and expectations that MCNP will promote local development ( $U=10,576$ ,  $p<.0001$ ,  $r=43\%$ ) and also generate income ( $U=9,742$ ,  $p<.0001$ ,  $r=33\%$ ). 53% of local communities do not yet know how forest revenue are distributed, but they are expecting more developmental projects (46%) and employment (36%) to ensure equity in REDD+ benefits, though present benefits are negligible. It is crucial to secure benefits throughout the design, implementation and monitoring of REDD+ because community members who have gained confidence in REDD+ would find it painful if expectations are not met, or even halted. So there is need for more clarity on benefit-sharing mechanism to confirm adequacy and sustainability of compensation. Community rights, social safeguards and equity in benefit-sharing from REDD+ incentives should be seen to enhance health, biodiversity, livelihoods amongst other co-benefits.

## 8.1 Introduction

Reducing Emissions from Deforestation and forest Degradation, sustainable use of natural resources and enhancement of carbon stock (REDD+), may result to sustainable protection of ecosystems services with high expectation to improve livelihood and social outcomes from REDD+ initiatives (Karsenty, 2011). Payment for Ecosystem Services (PES) and REDD+ initiatives have become popular (Minang et al., 2012; Hoang et al., 2013), and local communities see REDD+ as an opportunity to conserve forest and earn income (Awono et al., 2014). During the Conference of Parties at COP-16 (2010) in Cancun, COP-17 in Durban (2011) and COP-18 in Doha (2012), parties were still concerned with sustainable financing of REDD+ and efficiency, effectiveness and equity in benefit-sharing mechanism. One of the ongoing debates on REDD+ has been safeguard policies to protect local communities as there is fear that property rights ambiguity, weak governance and forest carbon revenue may lead forest managers to engage in actions that threaten local livelihoods (Pham, 2013). It is argued that unlike previous conservation initiatives, REDD+ has a higher potential in providing socio-economic and ecological benefits because the transfer of fund is performance based, and both private and public actors are expected to fulfil social safeguards (Seymour & Angelsen, 2010). While some actors are adopting social safeguards, others are focussing on socio-economic benefits of REDD+ (Brown et al., 2008).

REDD+ has sparked a renewed hope that conservation initiative will deliver a win-win scenario by saving the environment and improving livelihood and wellbeing of the rural poor. Bhattarai & Hamming (2001) argue that, an increase in income might shift the economic and energy demand patterns towards coal and petroleum-based fuel, thereby, reducing pressure on forest and halting deforestation. The widespread uptake of voluntary certification standards (like Plan Vivo), proves that forest carbon projects does deliver socio-economic co-benefits (Diaz et al., 2011; Peter-Standley et al., 2012), yet the empirical support on the environment-poverty win-win scenario is not adequately established in forest policy (Pham, 2013). When property rights are well established with enhanced tenure security, the win-win scenario can be achieved and livelihood improved (Barbier & Tesfaw, 2012). But there are legitimate concerns about who should

benefit - those with legal rights and/or customary rights, those incurring cost, low emitting forest stewards or effective facilitators of implementations (Luttrell et al., 2012)? Though international debates and discourse treat allocation of benefits to low emitting forest steward as priorities, both government and projects manager show little concerns (Pham, 2013).

Larson et al. (2010b) argue that, REDD+ is a climate change strategy rather than a poverty alleviation strategy, but Ze Meka (2007) states that we cannot combat the rate of deforestation without tackling the root causes like poverty. According to Somorin et al. (2014), REDD+ multiple benefits like biodiversity conservation, poverty alleviation, and socio-economic developments are vital to legitimise REDD+ mechanism. Poverty alleviation is central to any developmental initiative, therefore, for REDD+ to gain credibility, its programmes and policies need to align with the goals of poverty reduction for enhanced livelihood. REDD+ will not only generate benefits, but also incur implementation and transaction cost as well as opportunity cost, so a better understanding of cost and benefits need to be examined. As Luttrell et al. (2012) put it, *“It is the net benefit that matters”* and there are also three main different types of benefits; direct financial payments, better provision of ecosystem services, and improved governance, capacity, technology transfer and infrastructure. REDD+ policies and legislations help create two forms of benefit-sharing mechanism, compensating for forgone opportunities and providing incentives that enable appropriate behaviour (Brown et al., 2008), which can all be paid up-front or dispersed over time. Benefit-sharing may occur from the state to local communities as well as across local stakeholder (Lindhjem et al., 2010), regional and governmental levels which need to be design.

Though a Special Fund for Mutual Assistance to Councils (FEICOM) was established (1974) in Cameroon to rationalise funds allocation from logging to councils and village communities, the participatory forest governance framework of the 1994 forestry law, failed to produce the targeted community development goals due to poor representation of local communities and lack of consideration of local needs and concerns (Edoa et al., 2013). Cameroon Readiness Preparatory Plan recognises the importance of engaging

local communities in REDD+ activities, but there is no discussion as to which level they can engage in revenue management or benefit-sharing, with no definition of communities' roles. There is need to build on existing benefit-sharing framework to reduce cost of establishing and operating new REDD+ benefit-sharing institutions which could gain national political support (Pham et al., 2013). Lessons learned from benefit-sharing schemes in previous forest projects highlight the importance of clarifying and securing tenure rights for equitable and effective benefit-sharing of REDD+ forest revenue (CIEL& RFN, 2011). Defining carbon rights and developing benefit-sharing system serve as an opportunity to address the gaps and re-structure readiness efforts in tackling tenure weaknesses.

Input-based benefit-sharing are recommended in the early phase of REDD+ while performance based benefits-sharing fits more during phase three (PwC, 2012). One of the challenges in establishing benefit-sharing mechanism that delivers benefits to appropriate actors while improving forest management has been the variety of stakeholders, scale of partnerships, clear objectives and benefit-sharing arrangement (World Bank, 2009). Despite large body of literature on REDD+ benefit-sharing mechanism, few studies have investigated national forest policies and socio-economic interest that enhance or reduce efficiency, effectiveness and equity of national benefit-sharing policies and approach (Nkhata et al., 2012a). This study highlights expectations of local communities and the socio-economic outcomes of present conservation projects to support policy debate in further design and implementation of sustainable REDD+ projects by;

- Investigating how perception of PES, financial and development expectations influence participation in MCNP;
- Examining existing benefit-sharing mechanism within MCNP-conservation projects; and
- Determining if the existing benefit-sharing mechanism meets up with local communities' expectations.

## 8.2 Methodology (See 1.6)

## 8.3 Results

### 8.3.1 PES, financial and development expectations within MCNP

A Kruskal-Wallis test shows a significant difference in the perception that PES is necessary to sustain the forests within different clusters ( $H(3)=13.57$ ,  $p=.004$ ) (Fig. 8.1a). Pairwise comparison shows a significant difference between Bomboko-Buea ( $H(3)=-34.981$ ,  $p=.024$ ,  $r=25.4\%$ ), and Bomboko-Muyuka ( $H(3)=-40.402$ ,  $p=.014$ ,  $r=28.6\%$ ). But result shows a non-significant trend between clusters ( $J=13,053.0$ ;  $p=.364$ ,  $r=5.8\%$ ).

Figure 8.2a also shows a significant difference in the perception that MCNP-projects will bring local development ( $H(3)=67.88$ ,  $p<.0001$ ) between clusters. Pairwise comparison shows a significant difference between Buea-Bomboko ( $H(3)=67.141$ ,  $p<.0001$ ,  $r=48.7\%$ ), Buea-West-Coast ( $H(3)=-85.986$ ,  $p<.0001$ ,  $r=62.3\%$ ), Muyuka-Bomboko ( $H(3)= 52.095$ ,  $p<.0001$ ,  $r=37.5\%$ ) and Muyuka-West-Coast ( $H(3)=-70.940$ ,  $p<.0001$ ,  $r=50.7\%$ ).

Jonckheere-Terpstra test shows a significant trend between cluster ( $J=12,800$ ;  $p=.019$ ,  $r=15\%$ ) from Buea, Muyuka, Bomboko and West-Coast in ascending order. Result shows a significant difference in the perception that MCNP-projects will generate income ( $H(3)=62.154$ ,  $p<.0001$ ) (Fig. 8.3a). Pairwise comparison shows a significant difference between Muyuka-Bomboko ( $H(3)=56.845$ ,  $P<.0001$ ,  $r=40.8\%$ ), Muyuka-West-Coast ( $H(3)=-80.693$ ,  $p<.0001$ ,  $r=57.5\%$ ), Buea-Bomboko ( $H(3)=53.086$ ,  $p<.0001$ ,  $r=38.5\%$ ) and Buea-West-Coast ( $H(3)=-76.934$ ,  $p<.0001$ ,  $r=55.7\%$ ). Results show a significant Jonckheere-Terpstra trend between cluster ( $J=12,798$ ;  $p=.019$ ,  $r=15\%$ ) from Muyuka, Buea, Bomboko, and West-Coast in ascending order with an effect size of 15%.

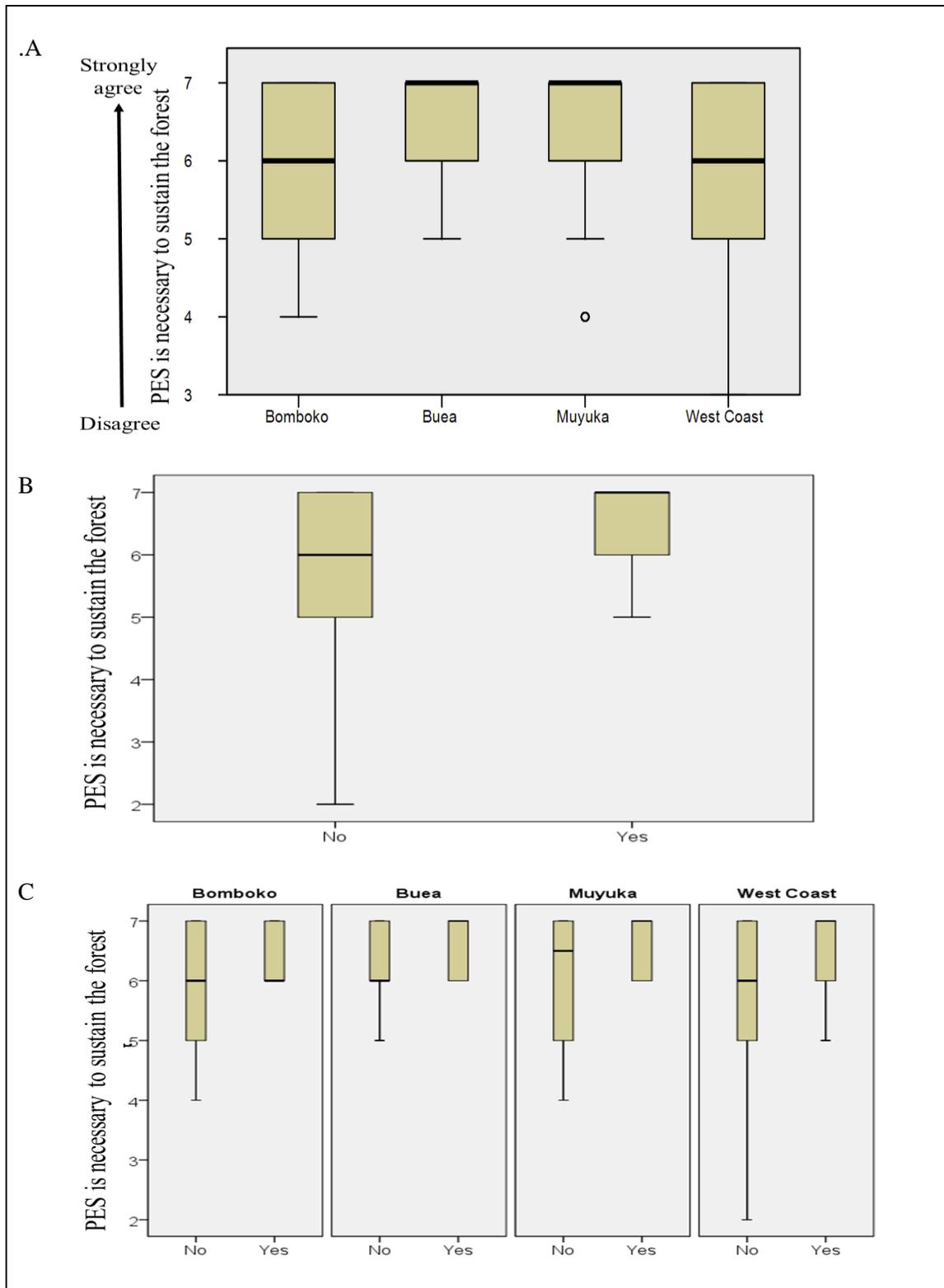


Figure 8.1: A Kruskal-Wallis plot showing variance in perception of PES as being necessary to sustain the forest within different clusters (a), t-test showing relationship with participation in MCNP-activities in all clusters (b) and within each cluster (c).

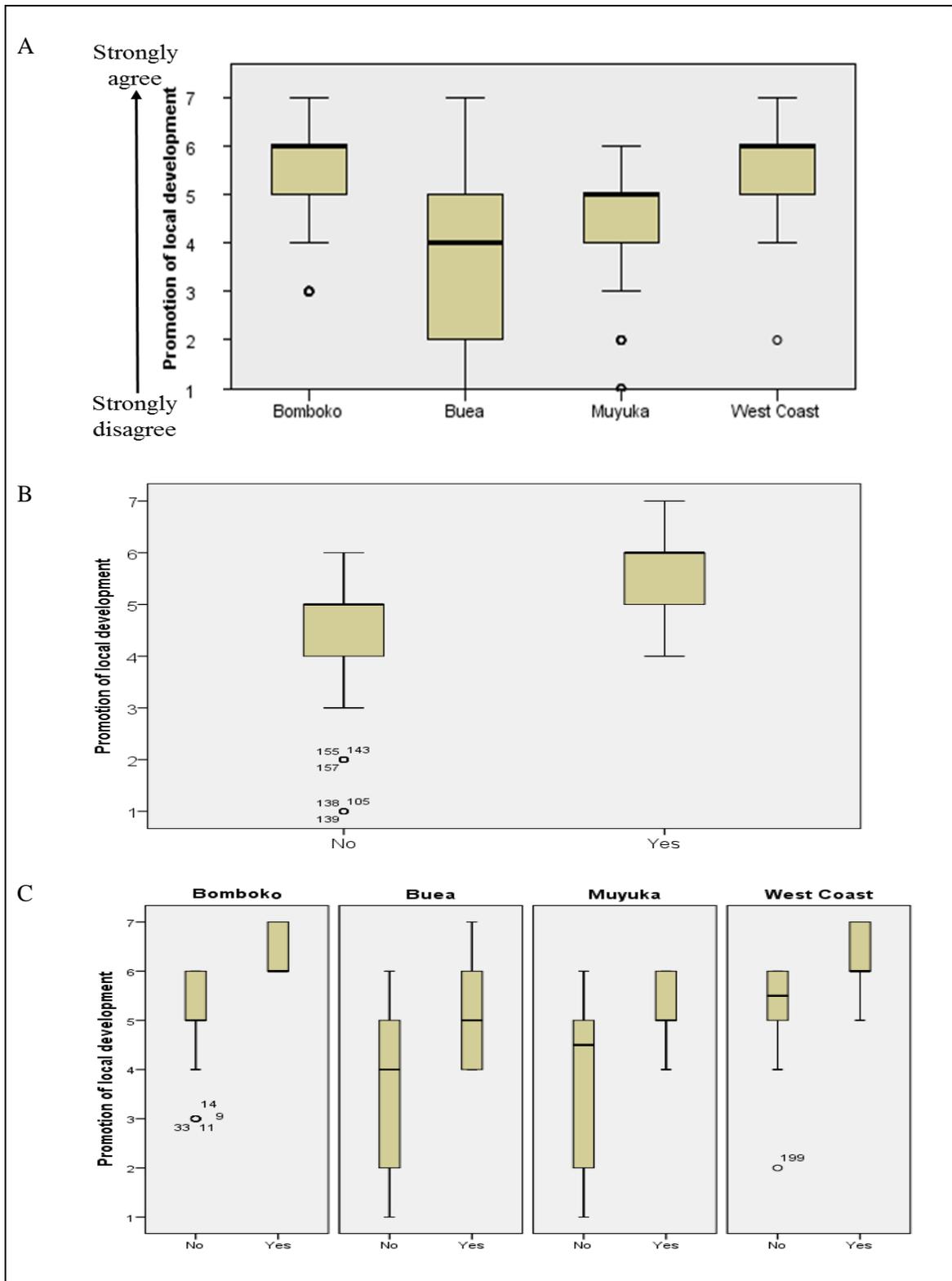


Figure 8.2: A Kruskal-Wallis plot showing variance in reasons for participating in MCNP between clusters (promotion of local development) (a), t-test showing its relationship with participation in MCNP-activities (b) and within each cluster (c).

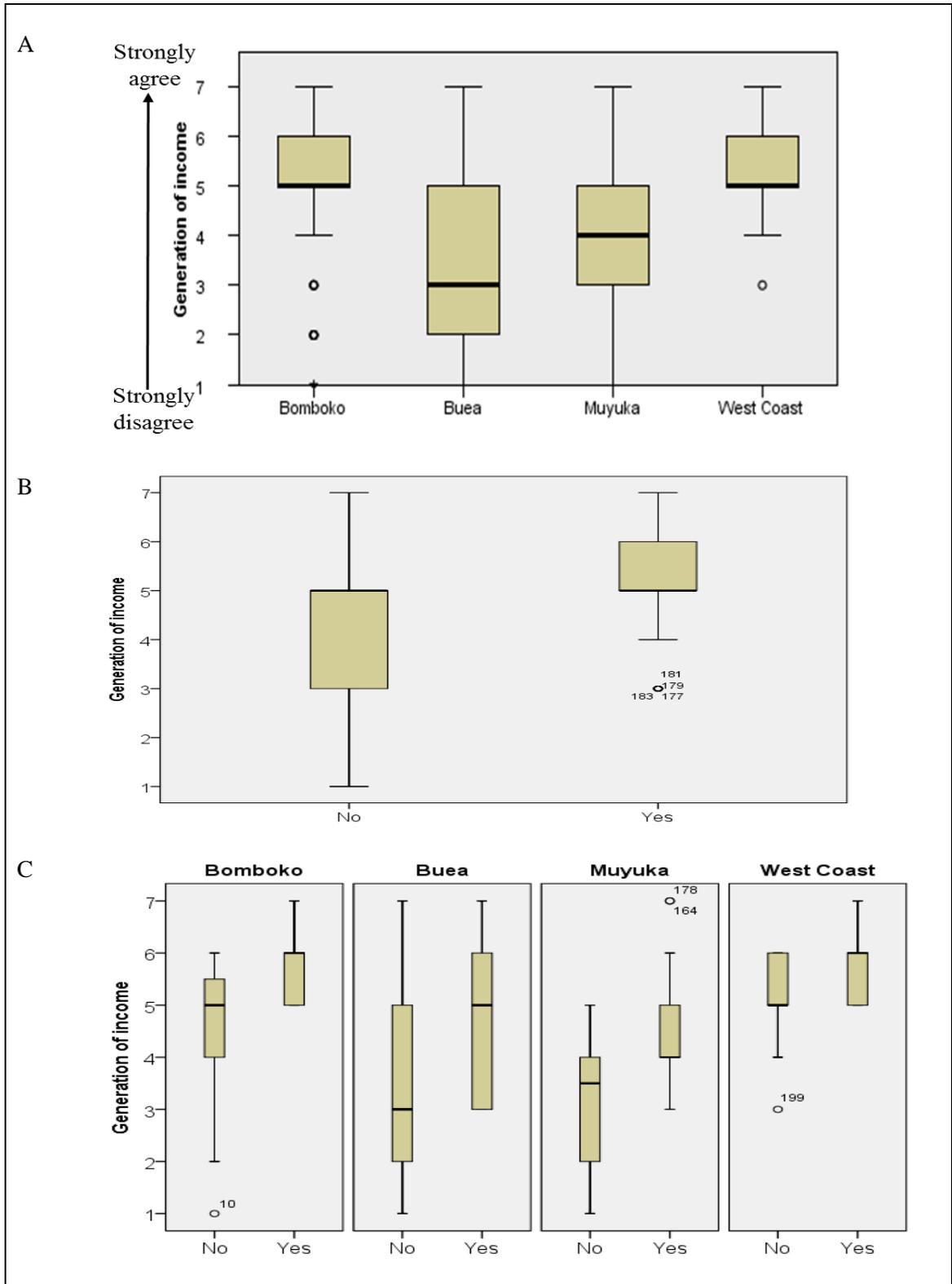


Figure 8.3: A Kruskal-Wallis plot showing variance in generation of income as a reason for participating in MCNP between clusters (a) and t-test showing its relationship with participation in MCNP-activities (b) and within each cluster (c).

T-test shows a significant relationship between participation in MCNP-activities and perception that PES is necessary to sustain forest ( $F= 17.18$ ,  $t=-5.55$ ,  $df=244.95$   $p<.0001$ ) (Fig. 8.1b(c)) expectation that MCNP will promote local development ( $F= 16.32$ ,  $t=-8.170$ ,  $df=240.38$ ,  $p<.0001$ ) (Fig. 8.2b,c); and income generation expectation ( $F=13.81$ ,  $t=-5.899$ ,  $df=226.96$ ,  $p<.0001$ ) (Fig.8.3b,c) within MCNP-clusters.

Mann-Whitney U test shows that participation is significantly affected by perception that payment for ecosystem services is necessary to sustain forest ( $U=10,165$ ;  $p<.0001$ ) with an effect-size ( $r$ ) of 30% in MCNP-clusters. Bomboko, Buea, Muyuka and West- Coast register effect sizes of 28%, 34%, 29%, and 26% respectively (Table 8.3a). Participation is significantly influenced by local development expectation in MCNP- clusters ( $U=10,576$ ,  $p<.0001$ ,  $r=.43$ ) with an effect size of 43% within MCNP clusters. Bomboko, Buea, Muyuka and West-Coast register effect sizes of 66%, 48%, 47% and 46% respectively (Table 8.3b). The study also shows that participation is significantly influenced by expectation that MCNP-projects will generate income ( $U=9,742$ ,  $p<.0001$ ,  $r=.33$ ) with an effect size of 33% in all clusters as well as in Bomboko (39%), Buea (39%), Muyuka (42%) and West-Coast (43%) (Table 8.3c).

Significant linear regression models presenting how expectation of local development (B) and income generation (C) contribute to participation (Table 8.4) is explained by the following significant linear regression equations:

- **Overall:**  $P=.615 + .353B + .118C$
- **Bomboko:**  $P=.611 + .368C$
- **Buea:**  $P=.668 + .434B + .169C$
- **Muyuka:**  $P=.766 + .456C$
- **Muyuka:**  $P=.683 + .483B$
- **West-Coast:**  $P=.645 + .268B$

Where  $P$ =Participation;  $B$ = Expectation of local development; and  $C$ = Expectation of income generation.

### **8.3.2 Present benefit-sharing mechanism from forest projects**

Only 15% of respondents are aware of local developmental projects carried out from forest-revenue and these ranges from provision of zinc to roof local market places, pipe-borne water, to construction of public toilet, community hall and schools/classroom (Fig. 8.4a). While 7% of respondents in Buea know that 100,000-250,000CFA has been given for community hall/chair and/or construction of public toilet, only 3% know in Bomboko that less than 100,000CFA has been given for construction of toilets and/or pipe-borne water and respondents in Muyuka and West-Coast, neither know, nor are aware of any projects (Fig. 8.4b).

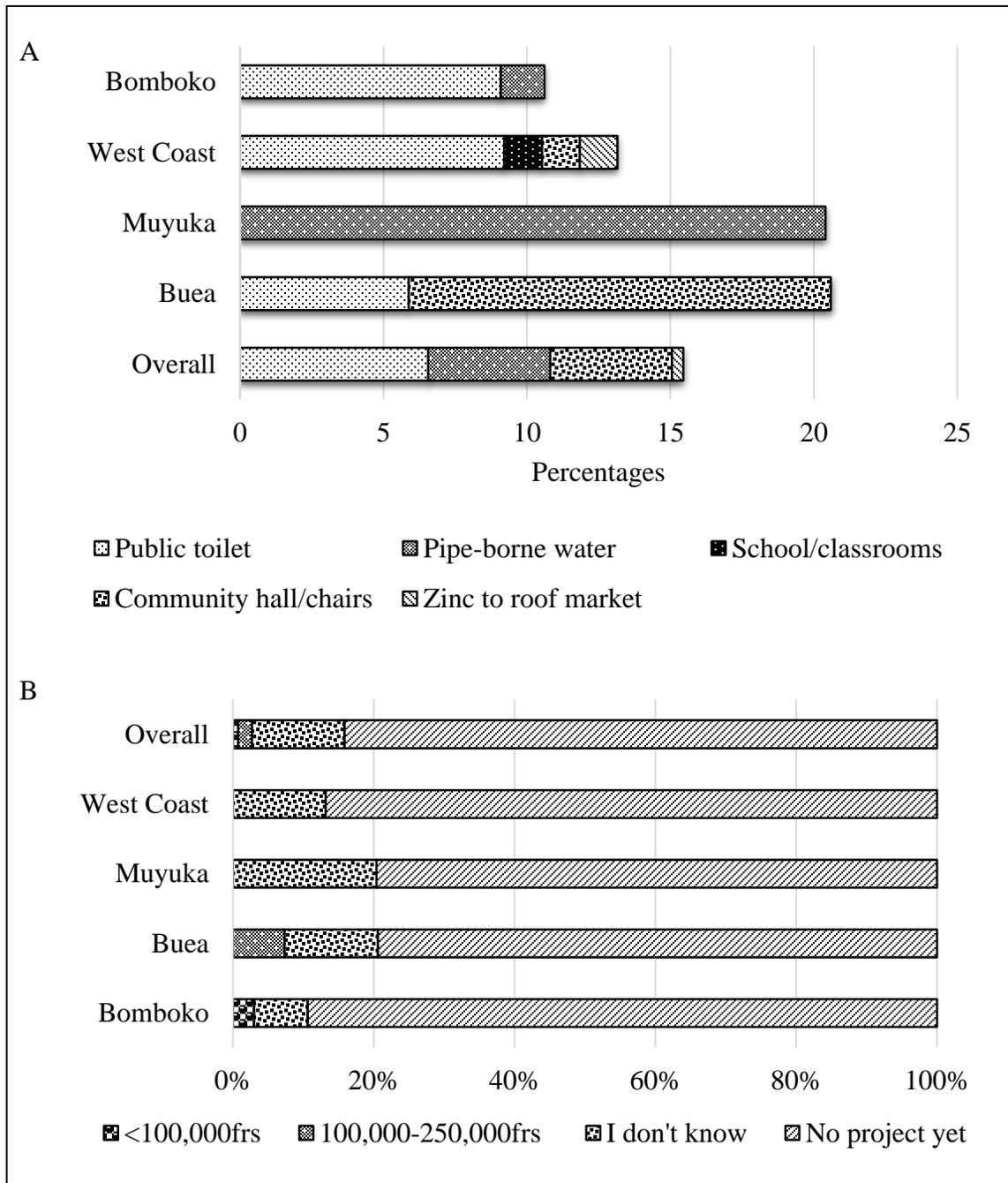


Figure 8.4: Percentages of projects carried out in MCNP-clusters (a) and amount given for projects (b).

Figure 8.5a shows that 53% of respondents did not know how forest-revenue are distributed. Despite the unawareness, 97% of respondents know that community developmental projects (46%) and employment (36%) are the major ways to ensure equitable revenue distribution with employment expectation highest in Bomboko (Fig. 8.5b).

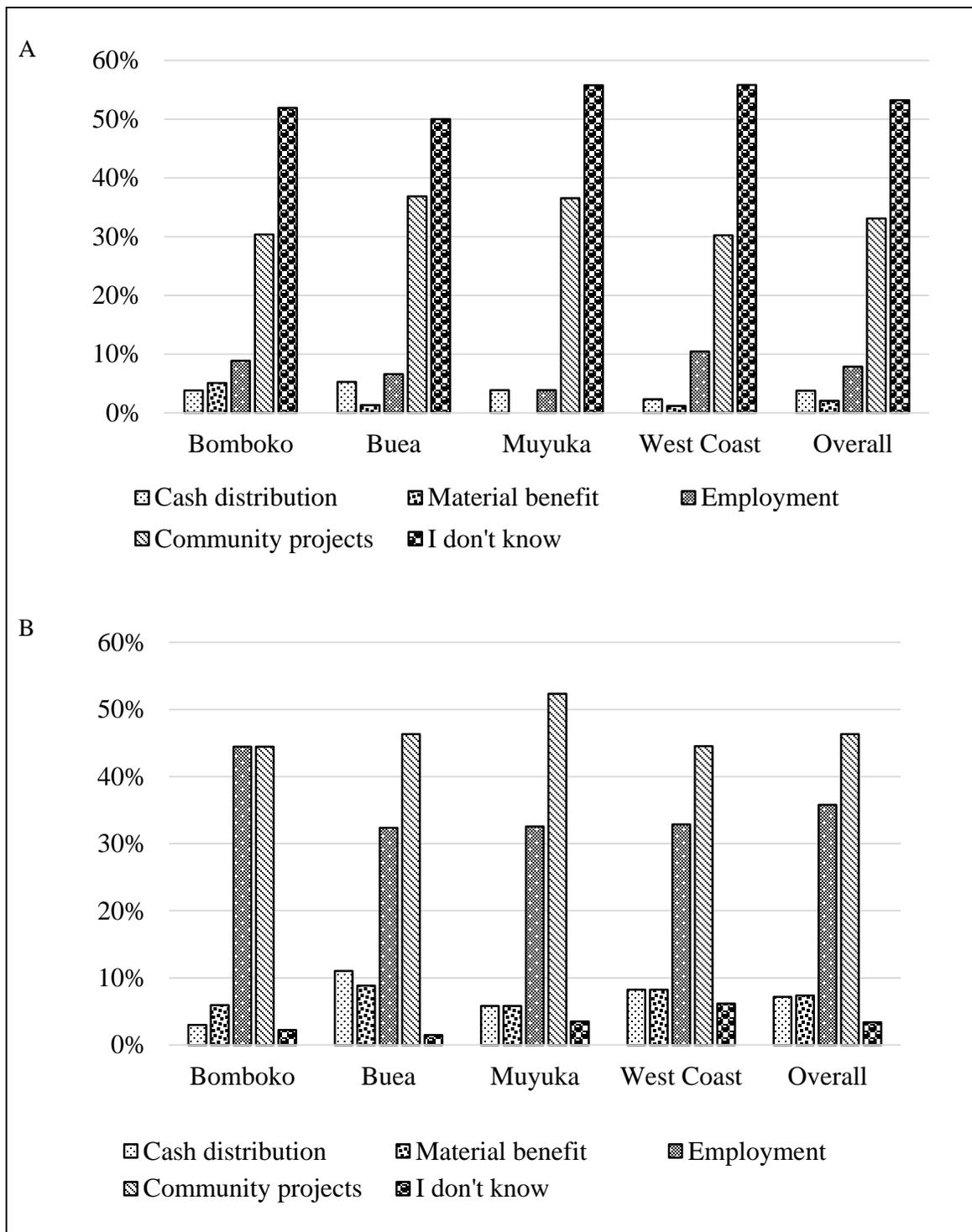


Figure 8.5: Percentages of present distribution of forest revenue (a) and ways to ensure equitable distribution of revenue (b).

### 8.3.3 Local community expectations

It is evident from figure 8.6a, that the presence of community development projects is almost negligible (14%) because of lack of funds or unknown reasons (Fig. 8.6b).

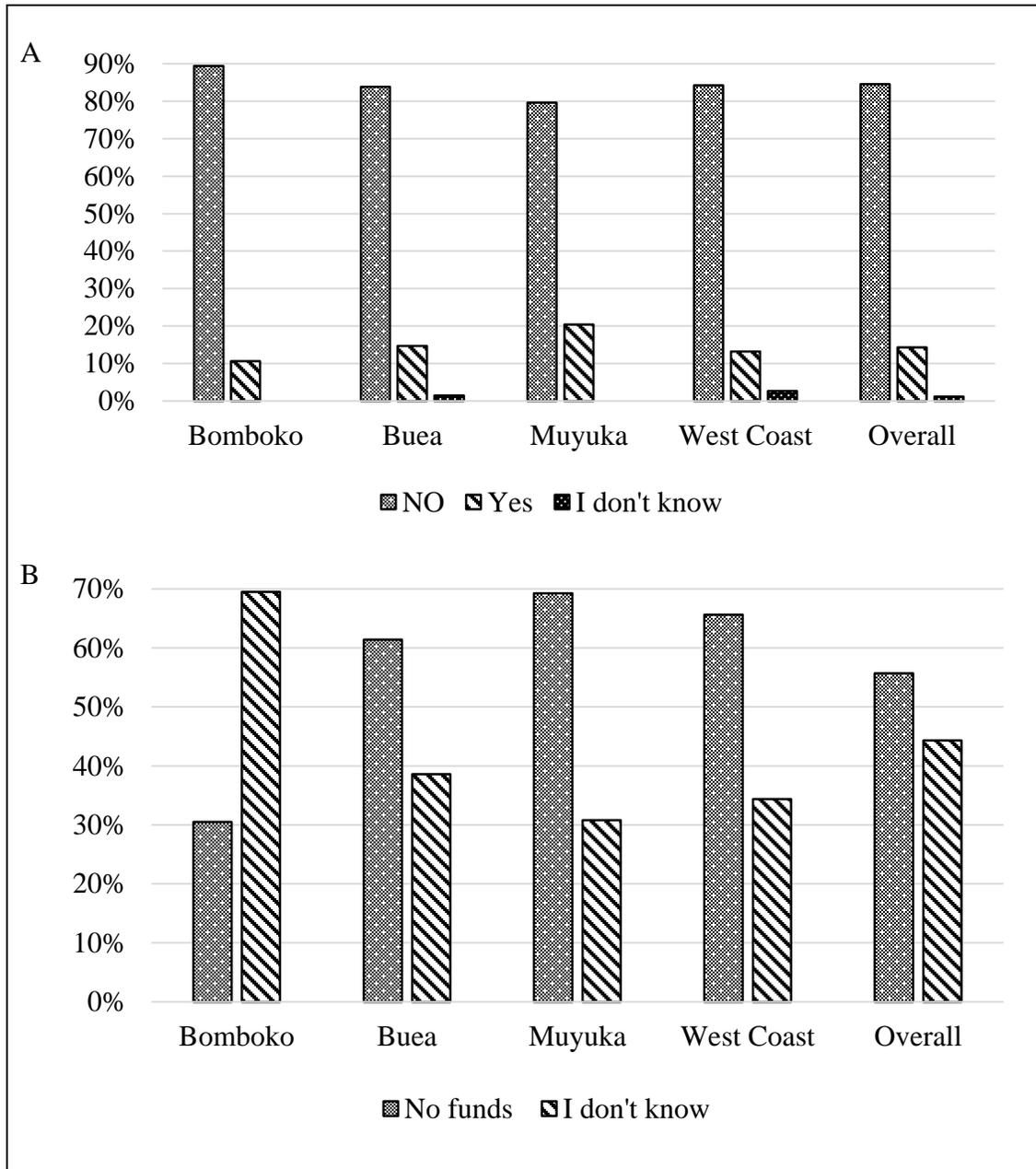


Figure 8.6: Has there been any developmental projects carried out (a)? If no, why (b)?

The absence of basic necessities like electricity, tap water, health centres, market and roads in some villages and lack of formal/informal credit institutions to generate capital for investment (8.7a) have deprived local communities of improved livelihood. To enable better livelihood, communities are expecting that MCNP-REDD+ projects will provide the following benefits:

- 1 Employment through which income will be generated;
- 2 Finance for establishing small businesses;
- 3 Provide them with pipe-borne water;
- 4 Training on animal husbandry and breeds;
- 5 Hospitals or health centres;
- 6 Schools to enhance education and technical skills;
- 7 Establishment of markets to sell surplus food and forest products;
- 8 Better access of motor-able roads;
- 9 Community halls for community gathering, discussion of community issues, socialising; and
- 10 Electricity supply to process and store food (Fig. 8.7b).

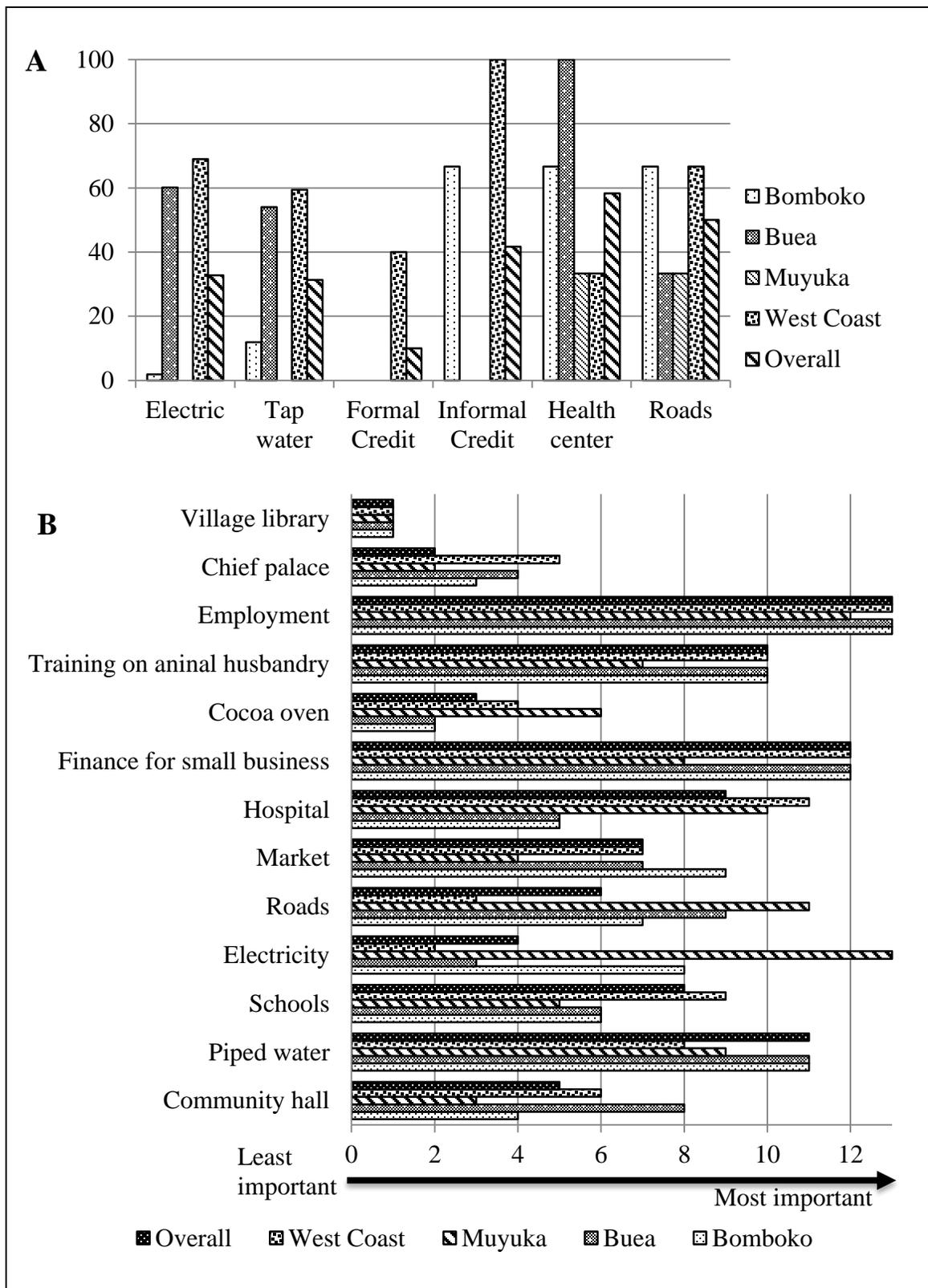


Figure 8.7: Percentages of present infrastructure within MCNP-clusters (a) and expected developmental projects from MCNP-projects (b).

### 8.3.4 Qualitative results

The word clouds shows that interviewees talked mostly about village, benefits, community, forest, conservation and money (Fig. 8.8a); from where two themes were established: community development and/or benefits (A), and park activities linked to village forest conservation-credits (B). Figure 8.8b and table 8.1 further show the types of comments across different levels of stakeholders.

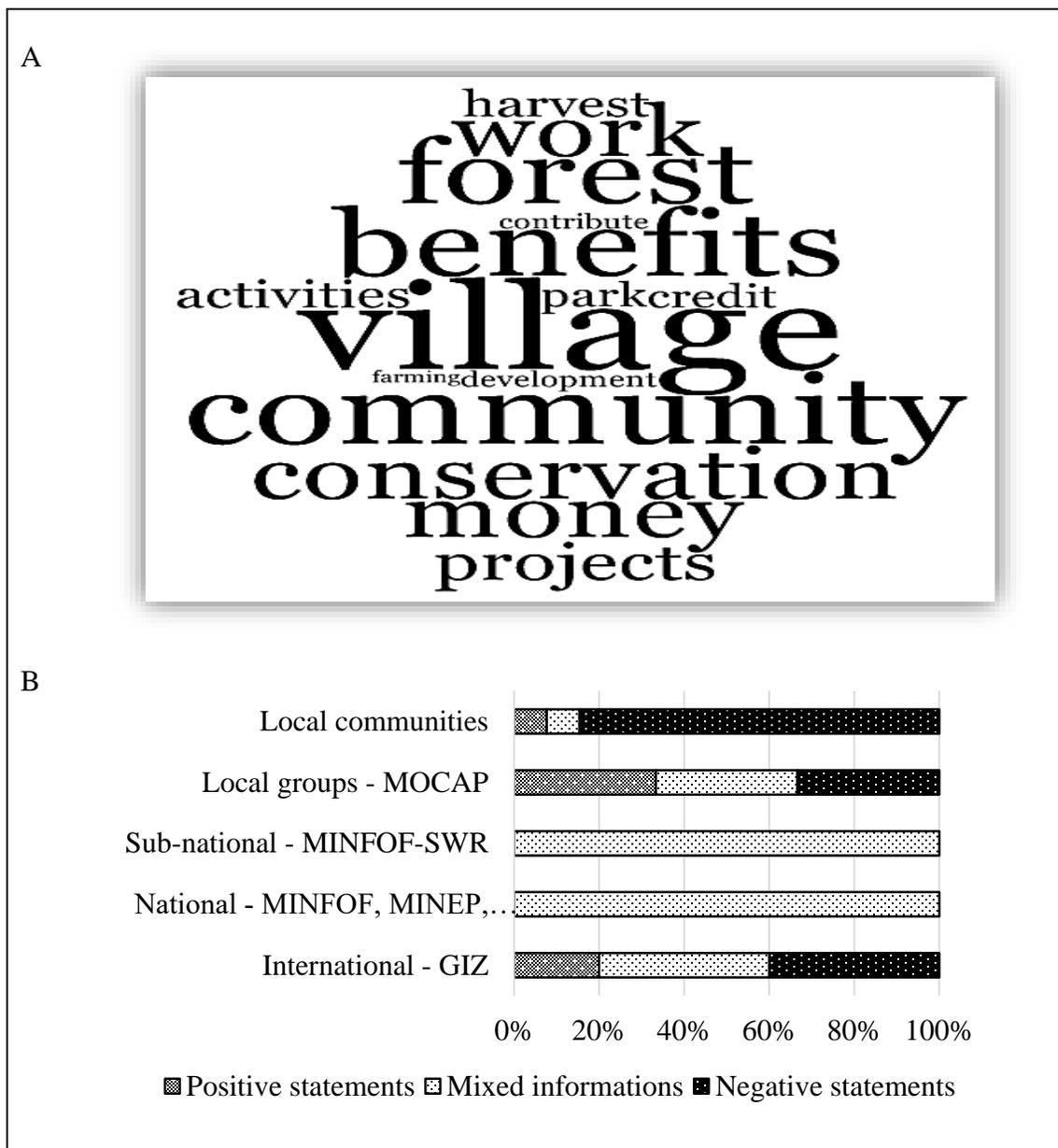


Figure 8.8: Word clouds showing most mentioned words from the interviewees (a) and types of comments provided by different stakeholders (b) on PES issues around MCNP.

#### **8.3.4.1 Community development and benefits**

Though a management plan has been approved for *Prunus* harvesting, money from the block harvested in 2010 has not yet been re-distributed to local communities despite the strenuous harvesting process. Ecotourism too is being re-structured and there is hope that money from tourism will also be re-distributed to communities.

*GIZ: “At the moment there is no definite benefit-sharing structure set-up.... There has been a management plan approved for Prunus-harvesting.... We are representing the local communities and we meet with the buyers, but the local community get most of the benefit that is coming from Prunus-harvesting. They have harvested just five blocks (2010).... But for now, nothing has been given to the community because we want to make this an integral part of the conservation development agreement. But the money is there, I know how much was harvested and how much is there (about 7,000,000CFA).”*

*GIZ: “We are trying to be a role model in benefit-sharing. MOCAP is representing only 33 out of 41 communities and we want it to represent all the 41 communities to avoid conflicts... The expected revenue is not as high as they expected in the beginning because they did an inventory and a prognosis fell below expectation... The harvesting is not fast enough as they thought and it is strenuous.... They cannot harvest it as before because it was unsustainable, but now they have to plant the trees and harvest with a specific method which we are training them and only specific trees are harvested.”*

*GIZ: “Mount Cameroon Equatorial Organisation... collect fee from visitors going up the mountain and a stakeholder fee which are supposed to be distributed to the community.... It is now dormant because the tourism sector is being restructured... We are still working on a mechanism on how all the benefits can be shared to the entire community.”*

Though some development measures and agricultural training are on the way to generate income like nursery, no tangible benefits could be traced because there is yet no market for the nursery.

GIZ: *“There are village development measures... to assist the communities in some specific development areas like small-scale water supplies and income generating activities like ...multi-purpose nursery projects and cocoa improvement projects... (aimed at) improving the land and the output of the current land and not expansion of any agriculture.”*

LC: *“They trained us on how to nurse plants and we did produce many nurseries, but there is no market for the nurseries... we have planted the nurseries in our farms until there is no more space.”*

National: *“We are trying to see how local communities will be involved in the benefits.”*

As revealed by MOCAP and MINFOF-SWR, only 16% of revenue from *Prunus africana* harvesting are dedicated to the village development fund (Fig. 8.9) and only 150CFA/kg is paid for *Prunus* harvested which is lower than the 375CFA which was being paid before the establishment of the park. This inequality in benefit has impeded engagement because *“payments are ridiculous.”*

Sub-national: *The benefit-sharing mechanism decides how much goes to the harvesters, MOCAP and park management (Fig. 8.9 for elaboration). This money is used as village contributions for different projects..., it should be around 40 million CFA. ...we make sure that the funds (16%) are used to the satisfaction of the villagers (about 7,000,000 CFA).*

Local-group: *“Revenue from forest exploitation is divided among the community. Some are paid as salaries, some goes to developmental projects that are designed by the community (Fig. 8.9)... They (local community) plant in plantation. When the *Prunus* are mature; they harvest and sell to us every five years.”*

Local-group: *The 33 communities have just seven harvesters and they are paid just 150CFA/kg when they carry a harvest from up the mountain right down. So people don't want to work as harvesters because payment is ridiculous. Everybody is complaining about the price. Before, they used to sell for more than 350CFA/kg, but now the price of *Prunus* is determined by the park committee”.*

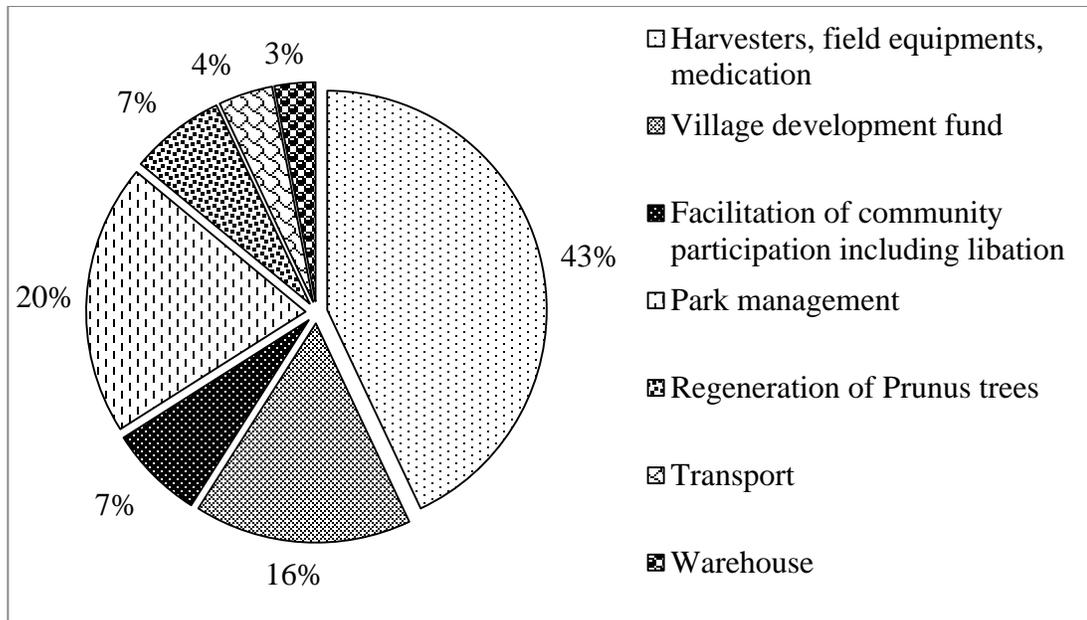


Figure 8.9: Revenue distribution from the sale of *Prunus africana* (summary from interview with MOCAP and sub-national respondents).

Though MOCAP respondent claimed to allocate money to local communities' projects, only one local respondent revealed that MOCAP has given them money to assist with building community hall and the amount seems negligible.

Local-group: *"We hold meetings with the assembly and the village committees and sensitised them that we have this amount of money to spend on the village. So they should come up with projects which we can carry out with the benefits... the money is spent on projects that are designed by the community."*

LC: *"MOCAP has helped by giving us some money about 250,000CFA to mould blocks, but the contractor started the project and did not complete it."*

Communities are concerned that, though they have learned a lot about conservation, they are not employed to work in the park because employment is based on G.C.E Ordinary level certificate and blamed their dependence on forest resource to lack of jobs, school, and other alternatives to improve livelihoods and wellbeing.

LC: *"We have learnt a lot about the forest preservation, but as for benefits we have nothing... they did not employ the local people to work, so actually we have not*

*benefited anything. If they employ us as forest guards and give us the authority to secure the forest, we will do that well than any other person, because we know that securing the forest will yield benefits which will help develop our community.”*

*LC: “My dad worked in the forest and harvested from the forest. I am doing the same thing now... if I had a different job I would not be doing same... maybe our children will also grow up to work in the forest and harvest from it.”*

*LC: “We ask the national park to build schools for those around the mountain areas, but they refused.”*

*LC: “We are suffering, no school, we don’t have pipe born water and no health centre. We are suffering a lot.”*

*LC: “The youths have to work. If they employ the youths, they will work and feed themselves.... But if we have no jobs and we are hungry, we will go directly to the forest to hunt or harvest food.”*

*LC: “They are employing based on G.C.E certificate, but that is wrong because common sense is more important than certificate... If I was working somewhere, I would not have time for hunting. If my kids had schools they would be occupied with school work... Do we have to die because we are not educated or what? If they go up to the mountain and an animal attacks them, is it the certificate that will save them? We are the ones they will call for help because we know how to tame these animals.”*

#### **8.3.4.2 Park activities linked to village forest conservation credits and bonuses**

Benefits are also re-distributed through a performance-based approach by allocating conservation credits (CC) and bonuses (CB) to motivate local communities to engage. But allocated amount is often negligible as compared to effort needed as shown in table 8.2.

*GIZ: “It took them so many meetings to understand the concepts of conservation credit and bonuses... (See table 8.2). So we need a continuous sensitisation process.”*

*Sub-national: “We have one incentive measure in our programme; conservation credit which they can earn for assisting in managing the MCNP. ...if they collaborate well with the park service and other activities, they will get this money.”*

Sub-national: *“We have introduced the conservation-credits and conservation-bonuses in this collaboration management approach.... Conservation-credit is a virtual voucher aimed at motivating the communities to contribute and respond to conservation needs of the MCNP management. It doesn't support illegal activities and that is how this conservation credit is used.... For conservation credits, we calculate 20% of what the park spends on any activity in the village where any member of the village is participating... If 300,000CFA was spent on village 'A' (income)... 20% of 300,000CFA is registered for that village and the money is not given to them directly. We spend the money on water projects and other development projects for that community. The person in charge of these funds makes sure that the community contribute at least 10% of the cost of the project in kind or in cash. Say if a water project cost 1,000,000CFA, the community will contribute 10% of that cost in cash or kind by digging the pipelines where the pipes have to pass. So if they have their conservation-credit say 100,000CFA, they will not contribute anymore.”*

Sub-national: *The conservation-bonus goes to the whole village for participating in the conservation activities.... An assessment criterion determines what percentage of this conservation-bonus they would receive (See table 8.2)... If an elephant is killed today and after one week another elephant is killed within that same area, you are automatically going to lose all... even at five O'clock; people call me to report that there are people with engine saw going to cut trees around. The use of this bonus must be for a project that is conservation friendly.... We are not going to approve buying of an engine saw... We will approve buying of desks..., give the money to the president of the conservation committee of that village, and then come back after three weeks to inspect if the desk are there. So this is how it is designed to function and the strategy or approach is explained to the community.”*

Most local respondents are not happy with the benefit-mechanism because the conservation credits and bonuses are too small and can be reduced to nothing in the case of illegal activities which is mostly carried out by outsiders. But they are, neither employed as forest guards, nor given the authority to effectively stop encroachment.

LC: *“We are not motivated. They (park managers) also said if they want to give us money or benefits, they will come and check in the forest to see if people are harvesting there. Some outside people, sometimes, come and cut down trees and export them to other countries, but when they come and see that, they will say we are the one who cut the trees. So it is better for them to give us authority because we know who is doing any illegal activity, better than them and if we see someone not from this village who is cutting trees, we can interrogate the person to know if he has a license or not.”*

LC: *“When there is any illegal activity in the forest, they will reduce the 125,000CFA that was supposed to help the village. But if some of the villagers were forest guards, they will make sure that no illegal activity is carried out in their forest so as to save that money for the benefit of the village.”*

LC: *“They want us not to harvest from the forest because they want to preserve it, but at the same time they are not supporting us to live. We can sell what we get from the forest and provide for our needs..., how are we going to get money to buy other provisions? So they really have to help us and the 125,000CFA allocated for us is too small.”*

Apart from securing conservation credits for community development, local participants are also demanding individual payment for activities carried out especially in difficult terrain and under hard labour.

LC: *“They asked me to accompany someone to the forest.... On the way he could not walk anymore, I carried him on my back and carried his bag also until we reached the place we were going... When we came back from visiting the mountain, the man did not pay me, he said payment will be counted as part of the conservation-credit. The credit is for the whole village and not for me, what I did was an individual task. Moreover the credit is about 125,000CFA a year and that is very small... They expect us to do jobs on the mountain on rocks with no insurance... if I die what will my family and I benefit? If I had killed antelopes and carried them down here, I would have sold them for maybe 160,000CFA. But I used the energy to carry a man on my back for nothing... What I am saying is that the forest officials are paid far higher than what they give us just because we don't have certificates, but we are forced to do all the work. Unfair!”*

*Table 8.2: Summarised conditions for acquiring conservation-bonuses (CB) within MCNP-cluster conservation zone as explained by GIZ and MINFOF-SWR respondents.*

<b>Contribution to conservation efforts:</b>	<b>CB (%)</b>	<b>Expectations</b>
Cluster conservation zone with report of all illegal poaching for the year (report of illegal activities that lead to effective seizure of illegal items).	+50	Respect minimum park patrols effort, keep records of illegal activities and deliver seized items to the ministry of Forestry and Fauna.
Report of class 'A' animal's poacher by patrol team.	-25 to -100	Village forest management unit should report all illegal activities.
Eco guards report class 'B' and 'C' animal poacher (commercial purposes).	-10 to -50	Patrol team meet hunter with arms or killed animal.
Eco guards reports illegal logging activities.	-10 to -50	Proof - Patrol team deliver GPS of location and picture.
Eco guards report illegal harvesting of non-timber forest products.	-10 to -50	Members of local communities are often rule violators.
Eco guards report unexpected bush-fire.	-10 to -50	Evidence of fire for the year.
Park encroachment	-10 to -50	Evidence of current year encroachment
Sub-total		50,000CFA
<b>Good Collaboration :</b>	<b>+25</b>	
Conservation management activities not carried out as scheduled.	-10 to -25	Conservation management unit need to report activities irregularity
Inadequate job standards.	-10 to -25	
Poor work spirit.	-10 to -25	
Inadequate coordination of activities.	-10 to -25	
Sub-total		25,000CFA
<b>Adequate performance within cluster</b>	<b>+25</b>	Conservation management unit need to be actively engaged.
Irregularity in cluster Platform meetings	-10 to -25	
Inadequate conservation efforts coordination.	-10 to -25	
Sub-total		25,000CFA
<b>Total</b>		<b>100,000CFA</b>

## **8.4 Discussion**

REDD+ has the potential to provide better logical incentive for the community to engage in forest management, therefore, adjacent local communities should be invited and sensitised to engage in REDD+ activities for improved livelihoods and reduced emissions from deforestation and forest degradation (Munishi, 2013). The uncertainty in REDD+ policy and market for forest carbon have made forest managers to delay sharing information, consulting community and avoiding the use of the term REDD+ to prevent raising expectations of local communities concerns on potential carbon payments and ecosystems benefits (Awono et al., 2013; Sunderlin & Sills, 2012). REDD+ national benefit-sharing mechanism should be shaped by legal and regulatory framework with clear objectives and targeted beneficiaries (Luttrell et al., 2012). However, Cameroon does not yet have any legislation defining carbon rights or benefits-sharing mechanism at national level. The existing 1974 Forestry Laws, the 1995 Implementation Decree and the 1996 Framework Law on Environmental Management applies in addition to other international conventions to which Cameroon is a signatory like the United Nations Framework Convention on Climate Change (UNFCCC), and United Nations Convention on the Rights of Indigenous People among others. According to Pham (2013), Cameroon is challenged with corruption and managing REDD+ finances, and analysis has shown that previous finances for forestry programmes have not been effectively managed so accountability is key. Due to lack of transparency and accountability most of the MCNP community members are not aware of how much is given to local communities as forest revenues.

### **8.4.1 PES, financial and community development expectations**

According to Peskett et al. (2008), benefit-sharing mechanism should be equitable to poor forest communities. Community forest will be an essential part of most equitable REDD+ projects because a bottom-up approach will ensure addressing, understanding and consideration of the needs and concerns of local communities. Presently, MCNP-REDD+ projects have not realised benefit-sharing, but international (North-South and South-South technology transfer through workshop) and national level (enshrined in the 1994 Forestry Law) of benefit-sharing, have been proposed by projects initiator GAF-

AG (Sama & Tawah, 2009). Though carbon has not yet been sold, members of MCNP-clusters are engaging in conservation effort with perception that payment for ecosystem services are necessary to conserve forest, and expecting to generate income and promote community developmental projects.

REDD+ benefit-sharing mechanism can be designed upon lessons learned from community forest and forest taxation schemes (Somorin, 2014). The dominant form of tenure is forest concessions. Fees and royalties are paid to the state before granting concession to exploit forest resources which are then re-distributed across national, sub-national and community levels. According to 1994 Forestry Law, 50% of all forest revenue goes to the state, 40% to rural council and only 10% plus village tax goes to local communities adjacent to forest concessions (50:40:10) (Morison et al., 2009). Also section 50 and 61(3, and 4) requires proponents to establish developmental projects that provide social amenities to local communities such as roads, schools, hospitals, among others. Scaling-up the benefit-sharing mechanism of forest revenue may be efficient, but low equity with community in payments and poor effectiveness in under-payment are evident in Cameroon. Mpoyi et al. (2013), found out that the land rent re-distribution is neither effective, efficient, nor equitable because the land fee sharing model is incomplete, inadequately designed, and lacks adequate monitor, thereby, making the payment of compensation ineffective while jeopardising communities' resource rights and counteracting poverty alleviation objectives as the case of MCNP. Difficulties in obtaining Forest Environmental Programme Funds and ignorance of procedures of disbursement have been identified by the Ministry of Forestry and Wildlife (Dkamela, 2011). Also uniformity in benefit-sharing turns to neglect local transaction differences and opportunity cost, leading to inequitable benefit-sharing among local stakeholders (Costenbader, 2011). Though jobs are created, qualified positions are filling-up by external professionals because of lack of local capacity/skills relevant to forest management (Mpoyi et al., 2013). Forest certification schemes might be a better option in mitigating inequality in benefit-sharing and improving management of forest concessions.

MCNP-projects entail both Integrated Conservation and Development Projects (ICDPs), and Payment for Ecosystem Services. It is expected that the market-based instruments will ensure that PES and REDD+ outcomes meet the 3Es criteria with conditionality as key element, but inadequate forest governance may make PES vulnerable to elite capture (Paudel et al., 2013; Pham et al., 2013). The lack of access and restricted rights over land and trees make them unable to influence benefit-sharing, thereby, removing them off main financial stream. Relationship between PES's actors and benefactors depends on trustworthiness, legitimacy in making decision, better knowledge and understanding of benefits, including obligations (buyers/sellers) and above all willingness to pay. Therefore, REDD+ needs all stakeholders, especially local communities to better understand equity in benefit-sharing and adopt adaptive management approach to address opportunity cost as well as build capacity and trust among stakeholders. Cameroon has also criticised the complexity of Clean Development Mechanism (CDM) because of complexity in administrative procedures (Dkamela, 2011).

A study carry out by Munishi (2013) shows that, participation in REDD+/CBFM and forest management initiatives significantly correlate with increase in benefits and incentives for forest management, especially, the potentials for future carbon market and the selling of forest products under REDD+ mechanisms. But payment depends on property rights. Authoritative rights in vertical benefit-sharing are held by both the Ministry of Forestry and Wildlife, and the Ministry of Environment and Sustainable Development, dominating benefit-sharing mechanism while proponents also share authoritative rights in horizontal benefit-sharing. According to Dkamela (2011), dominant REDD+ actors (donors, NGO, Government) dominate the REDD+ policy arena with authoritative and control rights, thereby, making the process externalised and elitist with zero involvement of local actors. There is also uncertainty in leadership and coordination roles of government and even when control rights are granted to local communities, they do not have the capacity to carry out their full responsibility (Pham et al., 2013) because they are always heavily depended on state's instructions and rules. Even when forest stewards are granted user-rights for NTFP and non-protected wildlife for subsistence, which also provide indirect benefits in the form of revenue from taxes paid for exploiting natural resources, the ratio of 50:40:10 still keeps local communities

far from adequate benefits. While only elites have financial capacity to register land, zoning and overlapping rights have also resulted into conflict among stakeholders. Power disparity between dominating proponents and local beneficiaries may lead to elite capture, corruption and disengagement of local stakeholders, who are vital for REDD+ sustainability.

#### **8.4.2 Present benefit-sharing mechanism within MCNP**

In MCNP, rewarded behaviours are repeated because individuals think through what they want and shape their actions to achieve their hopes. This strategy controls communities' behaviour by manipulating reward value of desired outcomes, yet participants keep asking for personal compensation alongside conservation credit for their communities. This creates a shift from behaviour-reward hypothesis to a practical theory of goal seeking. But achieving one goal may contradict another, so there is need to build mutual relationship where there is integration of all interests, challenges and options. So a cost-benefit analysis is needed for appropriate reward estimation.

MCNP projects has elaborated the village development plan and implemented few socio-economic infrastructures like pipe-borne water, community hall/chair and public toilet. Some communities' members feel that benefit-sharing unit should be household or individualised rather than community projects because the income generated from forest are used to solve unique family issues, so direct payment should be directed to those providing services to ensure sustainability of REDD+. It is hard to prove that everyone will benefit from the projects (exclusion of external users), and if adequate compensation will enable provision of alternatives and feed the growing population. The lack of adequate benefits may also be due to unclear tenure.

Developmental community projects, improve livelihood and wellbeing, and employment are the major benefits expected by local communities. PES transfer to local communities' projects with more benefit opportunity will run longer re-forestation, creating more jobs and protecting standing volume. MCNP-initiative is expected to create employment and community revenue streams, but existing size of payment transfer from previous forest projects is almost negligible. This study supports Sofala

findings that carbon payment did not significantly impact household income (Lawlor et al., 2013). Therefore, while REDD+ could provide a new income stream to communities, it has little impact on household poverty reduction except if direct payment through employment, financial incentives to households and provision for alternate livelihood (such as finance for small businesses and engagement in animal husbandry) are enhanced.

Even if benefits are shared to customary rights owners, what about claims from outsiders and/or migrants who are also members of these communities? 53% of respondents do not know how forest revenue is distributed, but they know that they have to engage in the project and expect financial returns. To avoid conflicts amongst various categories of community members, there is need to increase local engagement in decision-making on benefit-sharing before introducing financial compensation. According to Oyono et al. (2006), lack of transparency and mismanagement of funds by both the state and local delegates in Cameroon have been experienced in community forestry in rural areas.

#### **8.4.3 MCNP benefit-sharing framework**

There is still no benefit-sharing mechanism for REDD+ in Cameroon (Awono et al., 2014). But members of local communities very well understand that they have to conserve the forest while expecting benefits through conservation-credits (CC) and Conservation-bonuses (CB) which are earned through Collaborative Management Activities (CMA) that contributes to Village Development Measures, thereby, mitigating climate change, increasing carbon stock, biodiversity and wildlife, while simultaneously, developing communities. Revenue distribution for local development is gained both directly on individual basis through employment to work in the park and earning an income (*Prunus africana* harvesters are paid depending on the weight of fresh barks harvested at a price of 150CFA/kg) and indirectly through conservation credits and bonuses. While waiting for REDD+ payment, park managers negotiate Community Development Agreement with communities, using a co-management approach to link conservation and community development and this has enabled communities to gain enough time in expressing their needs and prepare themselves in carrying out their conservation activities as well as define developmental expectation. Effective, efficient

and equality in benefit-sharing mechanism depend on national transparency and capacity to manage finances. The insecure tenure systems and national control rights have limited the scope of local communities in deciding benefit-sharing of REDD+ revenue with park services deciding on price of *Prunus* for farmers. This action has discouraged communities from engaging.

#### **8.4.3.1 Conservation-credits**

Each year a village is supposed to be allocated a minimum of 200,000CFA for Collaborative Management Activities, though, members of local communities know the amount to be 125,000CFA. Conservation-credit is designed to facilitate the 10% compulsory contribution from each village towards their developmental measures. Conservation-credit is additional credit generated which is actually 20% of money earned from CMA. If a village earns 100,000CFA from CMA, it will generate an additional 20CC for the village (1000CFA = ICC). With a minimum of 200,000CFA allocated to each village, it can earn at least 40CC per year. The average amount allocated to village projects is three million. Therefore, for a village to carry out a project like this, it is obliged to contribute 10% which is 300,000CFA or 300CC. If it has about 200CC accumulated say over 5yrs, then it would be left with 100,000CFA to contribute in cash, or in kind, or wait for two more years (total of seven years) to gain the required 300CC. This time frame of seven years, delays development and **development delayed is development denied!**

#### **8.4.3.2 Conservation-bonuses**

Conservation-bonus is earned from participation and local communities' commitment to co-management of the National Park. The conservation bonus evaluation grid serves as a guideline in determining the amount to be paid to different villages within a cluster. As reported by GIZ Technical Assistant;

- 50% of the bonus is evaluated based on village contribution to conservation efforts (illegal activities are regularly reported - crosschecked with results from eco-guard patrols).

- The second portion of the bonus (25%) will depend on the level of collaboration of the village (work spirit, efficiency to perform CMA).
- Payment of the last portion of 25% will depend on the overall cluster performance (regular cluster platform meeting attended by all members and coordinated conservation efforts).

The full amount is made available to park villages that report illegal activities regularly and carry out the CMA properly, but a village community can lose its bonus (partially or completely) if the mentioned conditions are not fulfilled. However, the Conservation Development Agreement is used to settle disputes and get villages ‘on board’ for co-management. The conservation bonuses rewarded can only be access through a Conservation Management Unit, where a village proposes a village development project in line with conservation objectives, and its used bonus gets monitored by the unit. This benefit-sharing mechanism is meant to enable the indigenous people to link benefits to the Park’s conservation initiatives. The village development fund project is supervised by park managers and not the community chief or head, therefore, the community does not freely decide on how to use their bonuses - their choices are highly influence by the park services.

## **8.5 Conclusions and recommendations**

Though there is limited understanding of the link between poverty determinant in local communities and deforestation, Leimona et al. (2009) suggested that sustainable management of natural resources and improved livelihood of local communities should be considered so that predicted benefits could match the need and expectations of the communities. Therefore, a rethink of a fair financial mechanism to attract indigenous peoples and forest stewards in rural communities is urgent. Beside efforts needed to make emission reduction effective, assurance is needed that cost will be efficient and responsibilities and revenues will be shared equitably amongst all stakeholders involved. REDD+ has the ability to provide a win-win scenario for environment and reduce poverty, though at this early stage, the study found low benefits opportunities to local population in terms of employment and developmental projects. REDD+ should support forest stewardship activities of local communities providing benefits such as:

strengthening of community and resource rights, empowering local community institutions, improving income and livelihoods through benefit-sharing.

REDD+ finance depends on national broader development and climate adaptation strategies with strengthened institutional capacity for forest and land management. The design and implementation of national benefit-sharing mechanism will ensure sustainability of REDD+, so there is need to improve financial transparency, law enforcement, information sharing, capacity and coordination amongst all stakeholders.

The effectiveness of REDD+ depends on how its cost and benefits are shared and if incentives are sufficient enough to enable behavioural changes and policies.

Legitimising REDD+ will depend on specifying clear objectives, inclusion, equality and benefit-sharing analysis in order to identify effects on mitigation efforts and beneficiaries. Park managers should focus on social and livelihood aspects of REDD+ to provide strong incentive in clarifying doubts and convincing sceptical community members to engage. Community members who have gained confidence in REDD+ will find it painful if expectation are not met, or even halted, so there is need for more clarity on benefit-sharing mechanism to confirm both adequacy and sustainability of compensation.

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## 9 Investigating the role of local community as co-managers of Mt. Cameroon National Park projects

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*Keywords: Community based natural resource management, Integrated conservation and development projects, Social safeguards, Powerful forest stakeholders*

**Abstract:** - Community-based natural resource management and integrated conservation and development projects have often not realised local expectations due to problems of application and impracticable legislation. There are concerns that Reduced Emission from Deforestation and land Degradation, forest conservation, sustainable management of forest resources and enhancement of forest carbon stocks (REDD+) might be the next affected. Projects failure may be avoided by involving communities and developing an effective co-management approach. This study analyses the progress of REDD+ from an early stage to help inform proponents in adapting strategies that are geared towards appropriate satisfactory outcomes; especially for local communities; to prevent early failure of initiative. This study identifies the roles/functions of local communities by using cluster multi-stage random sampling to collect data from 259 respondents that were analysed using Chi-square, Mann-Whitney, t-test, Kruskal-Wallis, Jonckheere-Terpstra tests and NVivo. Results show that local communities have been involved in forest management practices before the establishment of the park. Respondents support the establishment of strict conservation zone and hope to promote local participation with high expectation of benefits. Insecure tenure reduces project support and local engagement. Though, they massively support the initiative, participants are not carrying out any tangible roles. They function mainly as manual labourer or mere committee members whose main roles are to enforce rules/regulations within communities. The state has become more influential that, communities delegates have become powerless and often remain captives of incentives (motivations) than community representatives. Local forest management is essential in sustainability of both communities and REDD+ projects. Trade-off between conservation and development should be acknowledged, negotiated and accepted by both REDD+ promoters and community's representatives during project planning to enable realistic appraisal and legitimisation of projects.

## 9.1 Introduction

About 80 million sq. km is covered by protected areas which makes up 12.2% of the land surface and almost one-sixth of the world's population (1.1 billion) depend on them for livelihood (Brandon & Wells, 2009). Indigenous peoples have inhabited and conserved forest for centuries and much land is still managed by them (Crider & Anaya, 1996). Although members of local communities are not the major cause of climate change, the impact is felt mostly by them (IPCC, 2007a). As cited by Ngbo-Ngbangbo et al. (2010), protected areas have existed in different forms within different cultures as far back as pre-agrarian societies and sacred forest existed before, in which, extractive use of natural resources was prohibited. Royalty sets aside land for game hunting which acts as reserve with exclusion of commoners. Therefore, conservation is an old practice to indigenous people and local communities should be considered in all forest projects where their rights to ownership are not interfered.

Though REDD+ is based upon experiences with PES and United Nations forest-related negotiations, which have slowly shifted conservation programmes from local to a more global scale (Humphreys, 2006), its implementation still requires sub-national projects such as Integrated Conservation and Development Projects (ICDP) and Community-Based Natural Resource Management (CBNRM) (Angelsen & Wertz-Kanounnikoff, 2008). But few studies have examined how REDD+ is being examined at this scale. MCNP-REDD+ has an element of ICDP (conservation project) as well as CBNRM (sustainable management of *Prunus africana*), therefore, the principles and lessons learned from ICDP and CBNRM are essential tools in designing and implementing MCNP-REDD+ projects.

As reported by Minang & van Noordwijk. (2013), conservation is among the key ways of achieving REDD+ and many REDD+ pilot projects are currently built on ICDPs. The collaborative management approach and the conservation incentives concept of MCNP are considered as implementing strategy for REDD+ which aims at effective management, and conservation of natural resources and biodiversity while rendering socio-economic benefits. ICDP is a conservation project with the inclusion of rural development component (Hughes & Flintan, 2001) for achieving sustainable

development and this is a widely applied approach to achieving conservation which also holds a wealth of experience for REDD+ including lessons on inherent and design challenges. Conservation can be deployed in REDD+ strategies in two ways: when ICDP is used as a platform for launching REDD+ at landscape/sub-national level; and when conservation is one of several strategies for REDD+ at national level (Minang & van Noordwijk, 2013). According to Cerbu et al. (2011), integrated conservation and development projects are part of REDD+ strategies and using REDD+ incentive for forest conservation will only compliment emission reduction management objectives for park conservation because present REDD+ projects follow ICDP concepts, and local knowledge and capacity developed on conservation activities can be used for measurement, report and verification requirements for REDD+. Conservation also emerges from the Cancun agreement making MCNP suitable as REDD+ projects.

CBNRM is a holistic approach that supports participatory, interdisciplinary and multi-level stakeholders networking in addressing complex socio-ecological issues that are geared towards sustainable development. Collaboration of experts, non-experts and members of local communities is instrumental in structuring effective CBNRM initiative (Child & Lyman, 2005), though, lack of recognition of communities' values, market values and elite capture often contradict concept (Child, 2007). Therefore, a holistic interdisciplinary approach is necessary to better understand and address these complex socio-environmental issues. Organisational design principles that are frequently associated with successful CBNRM include sensitisation and community engagement, collaborative partnership, resource and equity, effective communication and dissemination of information, research and development, local empowerment, legitimacy and trustworthiness, monitoring and feedback, adaptive leadership and affective co-management, participatory approach to decision-making, cooperation and conflict resolution (Gruber, 2009). These principles enhance effectiveness and efficiency in natural resource management, while supporting communities socially, economically and educationally. Mount Cameroon *Prunus* Common Initiative Group (MOCAP-CIG) is a local CBNRM initiative responsible for the organisation and monitoring of sustainable exploitation and management of *Prunus* at village level. Together with MCNP management unit, they carry out the following functions:

- Train villagers on sustainable harvesting techniques,
- Establish inventories of *Prunus* together with local communities and ANAFOR;
- Distribute *Prunus* seedlings to farmers to be planted into the agro-forestry systems;
- Establish village development fund in park villages;
- Reduce illegal exploitation of *Prunus*.

The Ministry of Forestry and Fauna (MINFOF) through MCNP is responsible for the management of *Prunus africana*. So the Management Plan for *Prunus* is fully integrated into the park management plan which is co-managed between park managers and local communities. Since most *Prunus* fall within the national park, exploitation is in conformity with conservation objectives, based on the following principles:-

- No felling of trees, be it wilted or dead;
- Harvesting of only healthy trees following sustainable harvesting guidelines;
- Minimum exploitable diameter of 30cm respected;
- Intense supervision and monitoring;
- Annual off-take of 130 tons adopted for first quota (5yrs)

While ensuring that;

- ✓ Viable population of resource base is maintained;
- ✓ There is improvement of livelihood and poverty is alleviated from revenue generated;
- ✓ Local communities fully participate;
- ✓ *Prunus* is planted on support zones, community forest and private farms;
- ✓ Management, harvesting and trades follow both, international and national norms.

According to Blom et al. (2010), CBNRM, forest certification, market access for non-timber forest products (NTFP) and ICDP which were once hailed in tropical forest conservation did not meet-up to expectations due to application of impracticable assumptions and there is fear that REDD+ might be next on the list. Therefore, there is need to analyse the progress of REDD+ from an early stage and adapt strategies that are

geared toward appropriate satisfactory outcomes especially for local communities to prevent early failure of initiative. Stating ‘what to do’ is far easier than stating ‘how’ to accomplish these principles. This study seeks to examine ‘what has been done’ by local communities in providing practitioners with useful information (state-of-the-art) that need to be considered in enhancing effectiveness, efficiency and equity in MCNP-REDD+ projects. This study focuses on practical local community engagement within the co-management approach of MCNP.

### **9.1.1 Background – *Prunus* management unit within MCNP**

MCNP was established in December 2009 and launched on Wednesday 17 February 2010, at the Pan African Institute for Development to support conservation of biodiversity, reduce deforestation and land degradation, and improve livelihoods of forest dwellers (Moki, 2010). The report further states that, Frank Stenmanns (GFA) disclosed a programme to help divert villagers from encroaching into the park through provision of small income generating projects such as improved cocoa and oil palm, domestication of non-timber forest product (NTFP), improved palm oil and cassava processing and establishment of community forest. Projects designed for village development plans included pipe born water, farm-to-market roads and crops preservation facilities with implementation partners being GIZ, WWF, Wildlife Conservation Society (WCS), MINFOF and MINEPDED.

MOCAP is a local CBNRM initiative responsible for the organisation and monitoring of sustainable exploitation and management of *Prunus* (established in 2005). The Ministry of Forestry and Fauna (MINFOF), through MCNP is responsible for the sustainable management of *Prunus africana*. The management plan for *Prunus* is fully integrated into the park management plan which is co-managed between park managers and local communities and its exploitation is in conformity with conservation objectives. The park is aimed at linking conservation, community development, poverty alleviation and improving livelihood.

*Prunus africana* is an Afro-montane light demanding hardwood tree attaining more than 30m in height with a rough and dark bark whose thickness varies with age, ecology and

size. It is commonly known as *Pygeum*, a medicinal plant used as health supplement and for treatment of prostate cancer, and as a major source of income for forest dwellers and enterprises, providing about 1,320 million CFA (\$2,686,000) export revenue to Cameroon with an annual 2000 tonnes exportation permit (Ingram & Nsawir, 2007). The international trade of *pygeum* was restricted in 1995 because of the fear of unsustainable exploitation due to high demand (Eben, 2011). In this regard, there was need for the creation of a national plan for the management of *Prunus africana* to ensure that the resource is not endangered and that the benefits flow improve livelihood of indigenous people and local communities while respecting both international and national norms.

In 1981, Cameroon joined the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) which was later enacted into Cameroon law on 29 July 2005 (Decree no. 2005/2869/PM) and ANAFOR was designated in 2006 as the scientific authority for plants, specifying the organisation, functioning and monitoring of how CITES is implemented. In 1995, *Prunus* was listed as an Appendix-II species and classified; therefore, its trade needed to be regulated because bark sold at international market were from wild harvest (Amougou et al., 2011). To ensure that trade did not threaten the survival of wild animal and plants, a technical report which specifies the method of harvesting and quantities harvested, was submitted by the Provincial Chief of Forestry as demanded by the Forestry Law of 1994. Since then, an annual based exploitation permits system for dried barks, has been used to regulate harvesting and exportation of this 'special forest product'. But illegal bark exploitation soon cropped in bringing a ban on export and commercial exploitation in 2007 by CITES. All stakeholders (Fig. 9.1) especially local communities involved in the trade of *Prunus*, faced economic hardship until 2011, when this ban was up-lifted after the government reviewed its methods of attributing special permits, took an inventory of existing stock and prescribed new sustainable exploitation methods satisfactory to CITES.

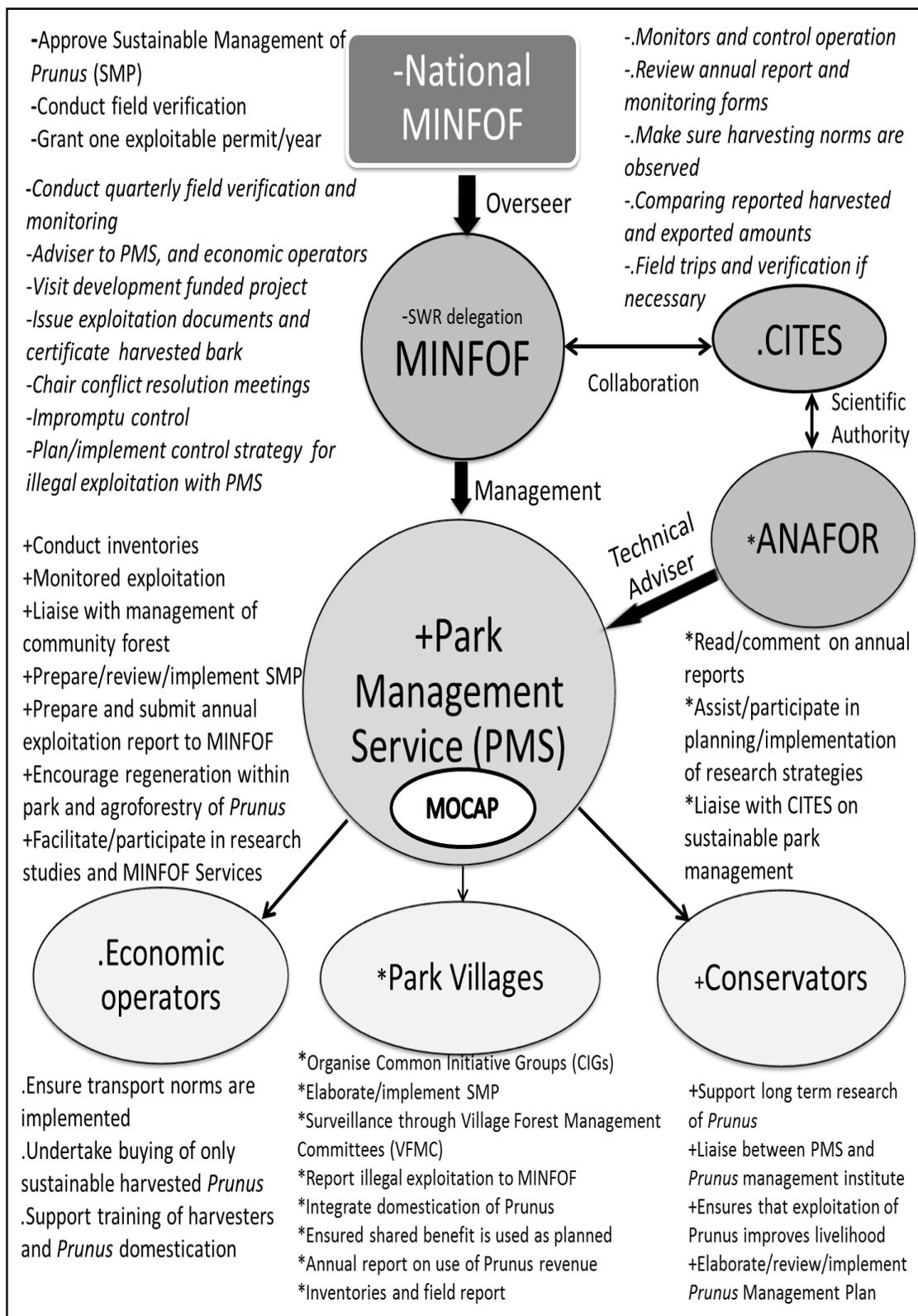


Figure 9.1: Roles and responsibility of stakeholders in sustainable management of *Prunus* (SMP).



For a five year rotation, 377,482tons of fresh bark can be harvested resulting into 178,741tons of dry weight (Eben, 2011). Only one authorised buyer, identified through a transparent bidding procedure by MINFOF is allowed - for effective monitoring and accountability. With increase in international trade, pharmaceutical industry has changed the use of *Prunus* bark as a local medicine, timber and fuel wood to a high volume export goods for the treatment of prostatic hyperplasia. Cameroon has exported more than 7300 tons since 2005 and this has provided the country with more than \$2,738,027 making it a major source of income for local communities in the highland area. Presently, Cameroon supply almost half of the world's *Prunus* bark with major importers as France (53%), Spain (31%), Madagascar (11%), India (1%), USA (1%), Belgium (1%), China (1%) and others (1%) (Eben, 2011).

Table 9.1: Density and exploitable *Prunus* on Mount Cameroon (Amougou et al., 2011).

Location	Density (number of trees) dbh<30cm	Density (number of trees) dbh>=30cm	Total density (number of trees)	Stock of fresh bark (tons)	Annual quota (tons) R:5yrs
National Park	1.92 (27,984)	2.01 (28,740)	3.93 (56,724)	1580,701	316,140
Support zone	1.65 (10,635)	0.79 (3,758)	2.44 (14,394)	206,710	41,342
Average	1.79	1.40	3.19		
Total	(38,454)	(32,498)	(71,117)	1787,411	357,482
Total dry bark equivalent				893,705	178,741

Participation of local communities is an integral part of *Prunus* management plan, whereby, each village signs a Memorandum of Understanding (MoU) with the park management services with stated roles and responsibilities of the villages and benefits-sharing-mechanism for poverty alleviation, geared toward sustainable development. Harvesting, trade and management are also done following specified *Prunus africana* norms. Villagers are also encouraged to regenerate *Prunus* plantation and integrate *Prunus* into agro-forestry. Only trained and certified harvesters are allowed to harvest under strict supervision. It is believed that through this management plan, the resources are able to regenerate and increase both qualitatively and quantitatively.

## 9.2 Methodology (See 1.6)

### 9.3 Results

Few members of Bomboko and Buea clusters (<2%) have been involved in forest management projects before 2005, but with the launch of MCNP in Dec. 2009, all four clusters had become engaged in forest management projects as from 2010 and in 2012/2013, 17% of respondents participated in park activities (Fig. 9.2a). Before the creation of the park, communities' common forest practices included protection of specific tree species, education on forest management, mapping/inventory of forest resources, enactment of forest by-laws, cutting down of competing trees and establishment of clear use rights for special products (Fig. 9.2b).

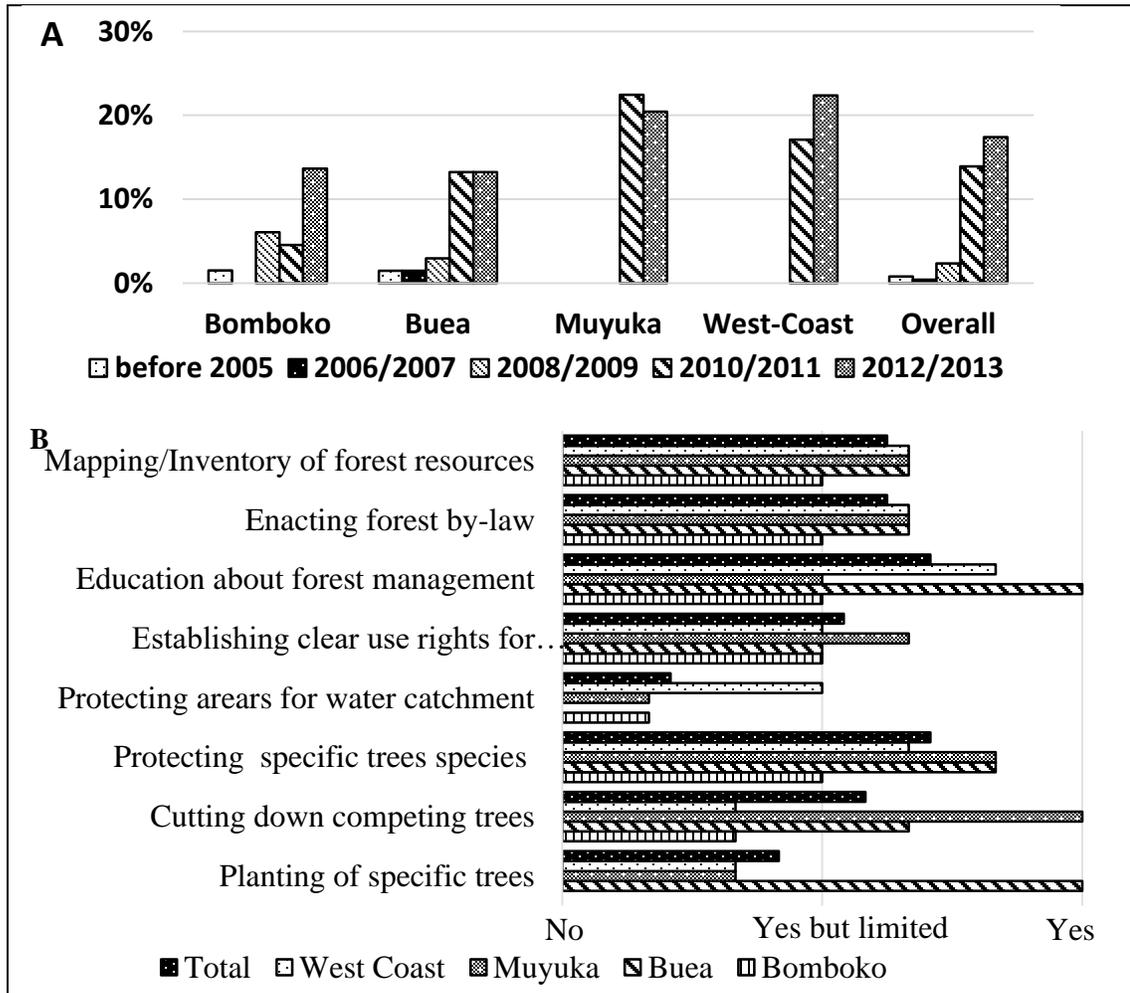


Figure 9.2: Increased percentage of participants engaged in forest projects with the launch of MCNP (a) and common forest practices before the launching of the park (b).

### 9.3.1 Community perception towards establishing strict conservation zone

A Kruskal-Wallis test shows a significant difference in perception that, strict conservation zone enhances efficiency of conservation within different clusters ( $H(3)=12.55$ ,  $p=.006$ ) (Fig. 9.3a). Pairwise comparison shows significant differences between Muyuka-Bomboko ( $H(3)=37.876$ ,  $p=.032$ ,  $z=2.788$ ,  $r=26\%$ ) and Muyuka-Buea ( $H(3)=41.158$ ,  $p=.014$ ,  $z=3.049$ ,  $r=28\%$ ). Result shows a significant trend between cluster ( $J=10,868.5$ ;  $p=.013$ ,  $z=-2.493$ ,  $r=15.5\%$ ) from Buea, Bomboko, West-Coast and Muyuka in descending order with an effect size of 15.5%.

Independent sample t-test also shows a significant relationship between participation in MCNP-activities and perception that, strict conservation zone enhances conservation initiative ( $t=-3.346$ ,  $df=257$   $p=.001$ ) (Table. 9.3) (Fig. 9.3b). Results also show significant relationships in Muyuka ( $p=.008$ ) and West-Coast ( $p=.004$ ), but non-significant relationships in Bomboko and Buea ( $p>.05$ ) (Fig. 9.3c).

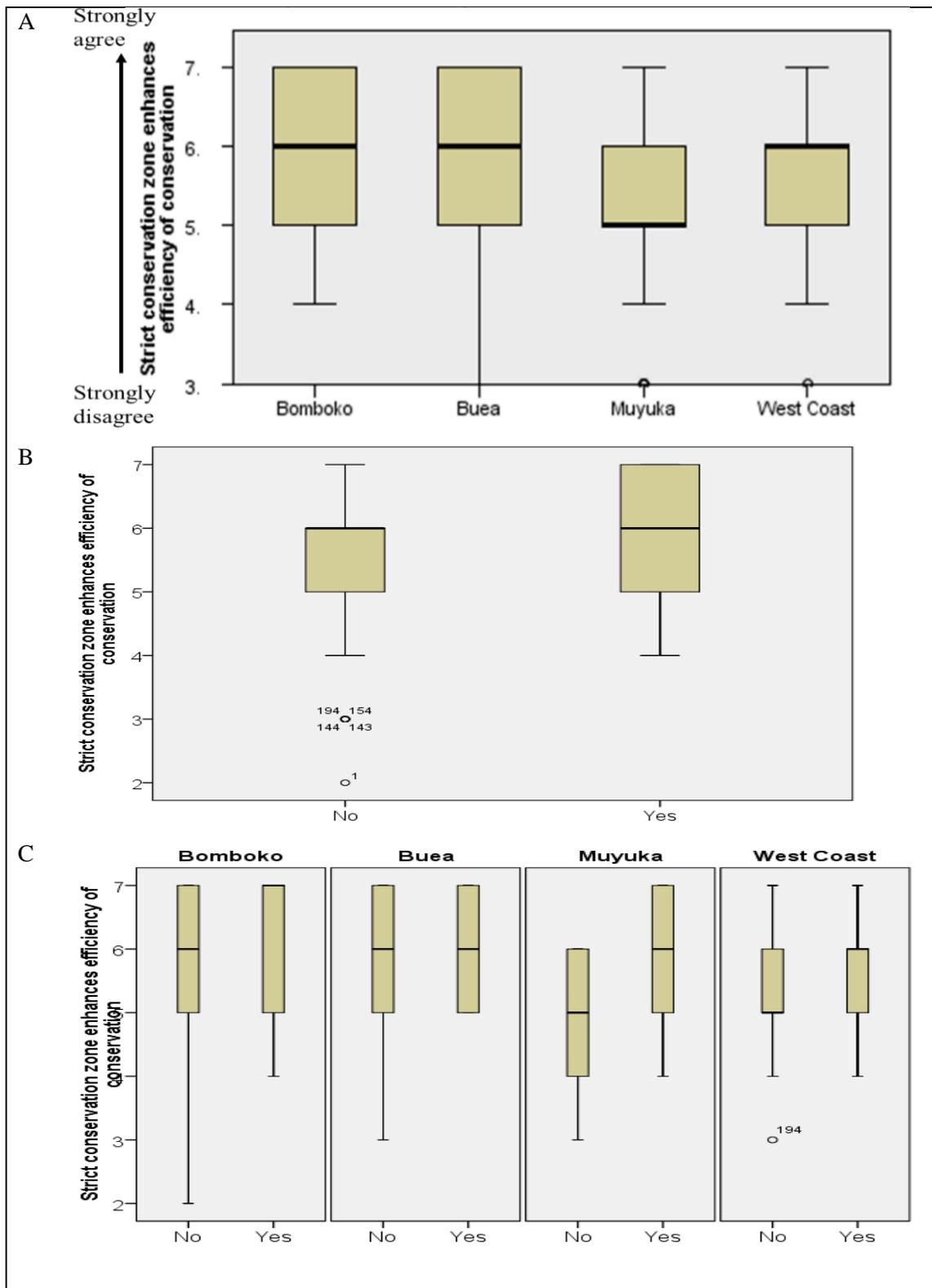


Figure 9.3: Kruskal-Wallis plot showing variance of perception of strict zone between clusters (a), and t-test plots showing how perception of strict conservation zone influences participation in MCNP-activities in all clusters (b) and within each cluster (c).

Mann-Whitney U test shows that participation is significantly affected by perception that, strict conservation zone is necessary to enhance efficiency of conservation (U=9,332.5; p=.002 z=3.129) with an effect-size (r) of 20% in MCNP-clusters. Bomboko and Buea show non-significant relationships with effect sizes of 16% and 8% respectively, while results reveal significant relationships for Muyuka (U=410.5, p=.015, z=2.436) and West-Coast (U=922, p=.009, z=2.614) with effect sizes of 35% and 30% respectively (Table 9.3).

Significant linear regression model presenting how perception of strict conservation zone (A) contributes to participation in MCNP-activities is significant at F=11.2, p=.001, adjusted R=.038 and is explained by the following equation:

$$\text{Overall: } P = .827 + .204(A)$$

*Where P=Participation, A=Perception in support of strict conservation zone.*

### **9.3.2 Community support of MCNP-conservation initiative**

Results show that most members of community support the MCNP-initiative (Fig. 9.4a) because they wish to improve the natural environment, enhance carbon stock, promote local participation, generate income, promote community development and solve land ownership conflict (Fig. 9.4b). But few members do not support the initiative because of no benefit to them, loss of rights over forest, lack of awareness, conflict resulting from spying on each other and exclusion of local people in decision-making (Fig. 9.4c).

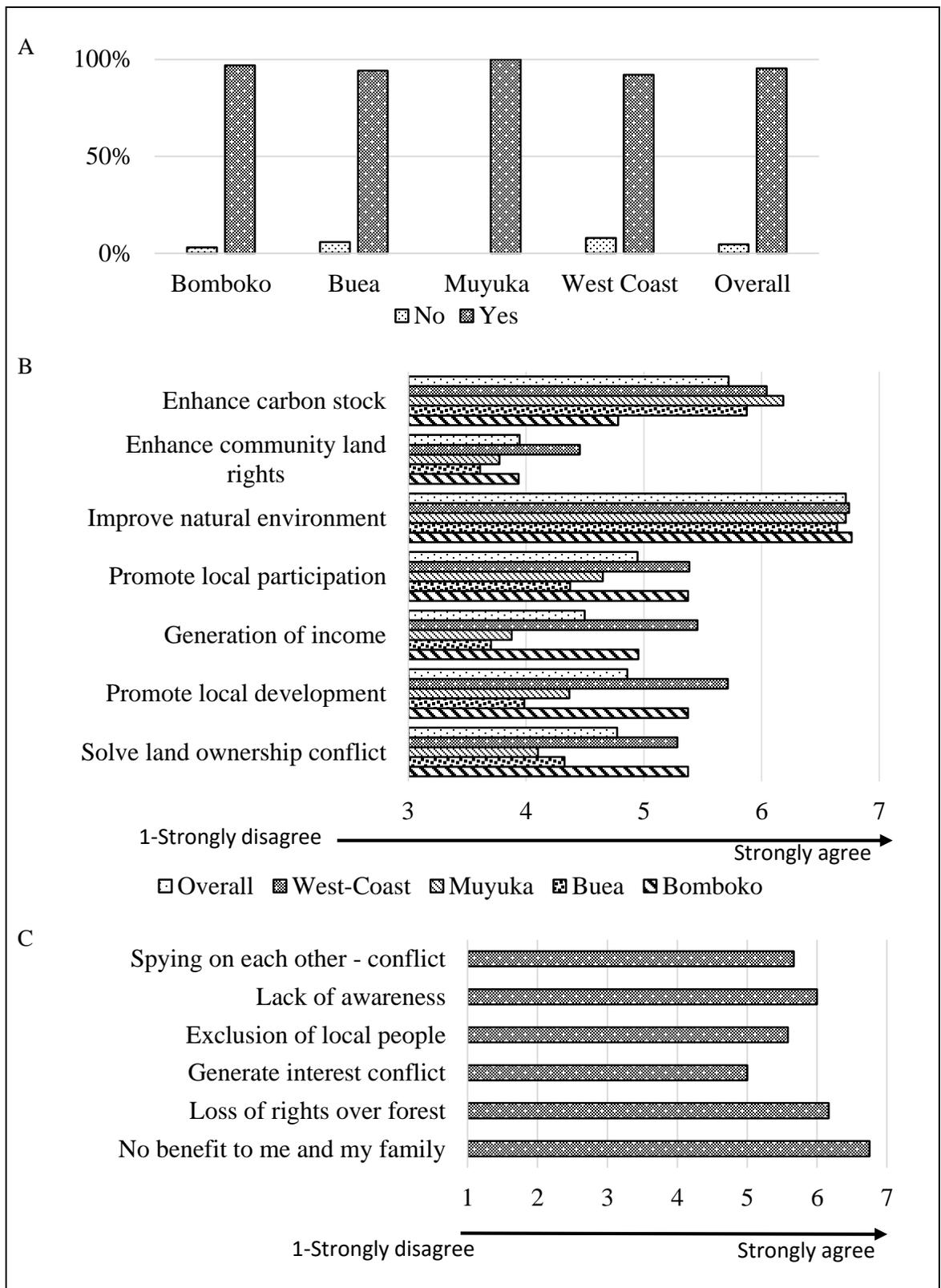


Figure 9.4: Percentages of respondents supporting MCNP-initiative (a), and reasons for supporting (b), or not supporting (c) MCNP conservation initiative.

A Kruskal-Wallis test shows that promotion of local participation as one of the reasons for supporting MCNP-initiative is significant between clusters ( $H=42.192$ ,  $p<.0001$ ) (Fig. 9.5a). Pairwise comparison shows significant differences between Buea-Bomboko ( $H=58.727$ ,  $p<.0001$ ,  $z=5.05$ ,  $r=.446$ ), Buea-West-Coast ( $H=62.105$ ,  $P<.0001$ ,  $z=-5.458$ ,  $r=.471$ ), Muyuka-Bomboko ( $H=42.368$ ,  $p=.004$ ,  $z=3.393$ ,  $r=.391$ ) and Muyuka-West-Coast ( $H=45.747$ ,  $p<.0001$ ,  $z=-3.733$ ,  $r=.342$ ). Result reveals a non-significant trend ( $J=11,907$ ,  $z=.915$ ,  $p=.360$ ) from West-Coast, Bomboko, Muyuka to Buea in descending order with an effect size of 6%.

Independent sample t-test shows that, participation significantly relates to perception of promoting local engagement ( $t=-6.561$ ,  $p<.0001$ ) (Fig. 9.5b) as well as in each of the clusters ( $p<.05$ ) (Table 9.4; Fig. 9.5c). A Mann-Whitney test also shows that participation is significantly influenced by perception of promoting local engagement ( $U=9,778$ ,  $z=5.452$ ,  $p<.0001$ ,  $r=34\%$ ) as well as in each of the clusters with Bomboko, Buea, Muyuka and West-Coast registering effect sizes of 39%, 35%, 52% and 33% respectively (Table 9.4).

Significant linear regression model, revealing contribution of perception of promoting local participation to actual engagement is significant at  $F=36.46$ ,  $p<.0001$ ,  $\text{adj. } R=.126$  and explained in the equation:

$$\text{Overall: } P = .566 + .360(PLP)$$

Where  $P$ =Participation; and  $PLP$ = perception of promoting local participation

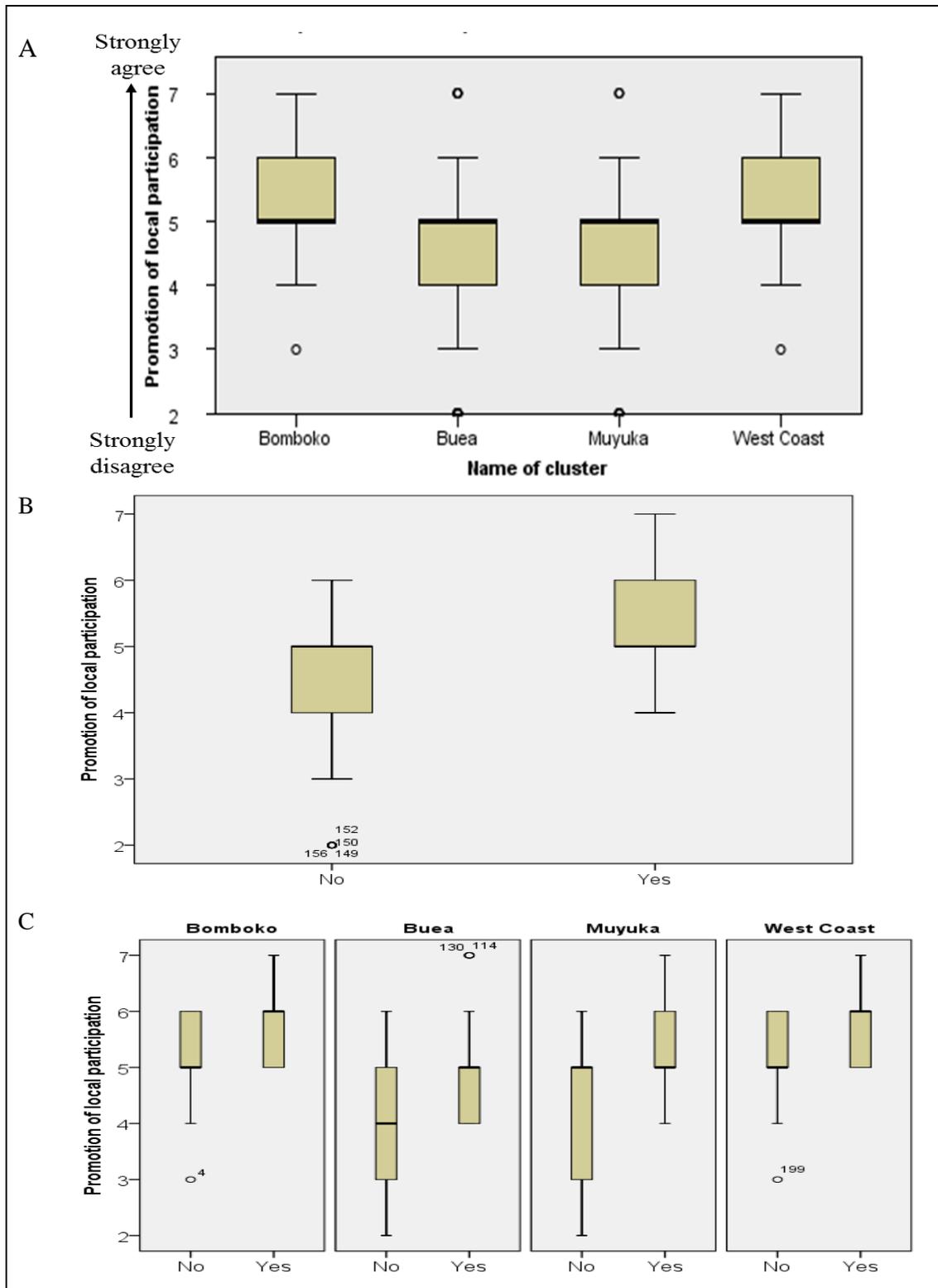


Figure 9.5: A Kruskal-Wallis plot showing variance in promoting local participation within clusters (a), and t-tests showing how perception of wanting to promote local participation influences participation in MCNP-clusters (b) and within each cluster (c).

### **9.3.3 Influence of perception of tenure, cost-bearer and benefactors on support of MCNP-projects**

Figure 9.6 shows that some reasons for not supporting MCNP initiative is because of government ownership (Fig. 9.6a) control (Fig. 9.6b) and decision-making of forest policies (Fig. 9.6c), and these factors also affected participation in MCNP-activities even within supporters. Non-supporters perceive that the local communities are bearing the cost of the projects while the government remains main benefactor, but the reverse is true for supporters (Fig 9.6d and 9.6e).

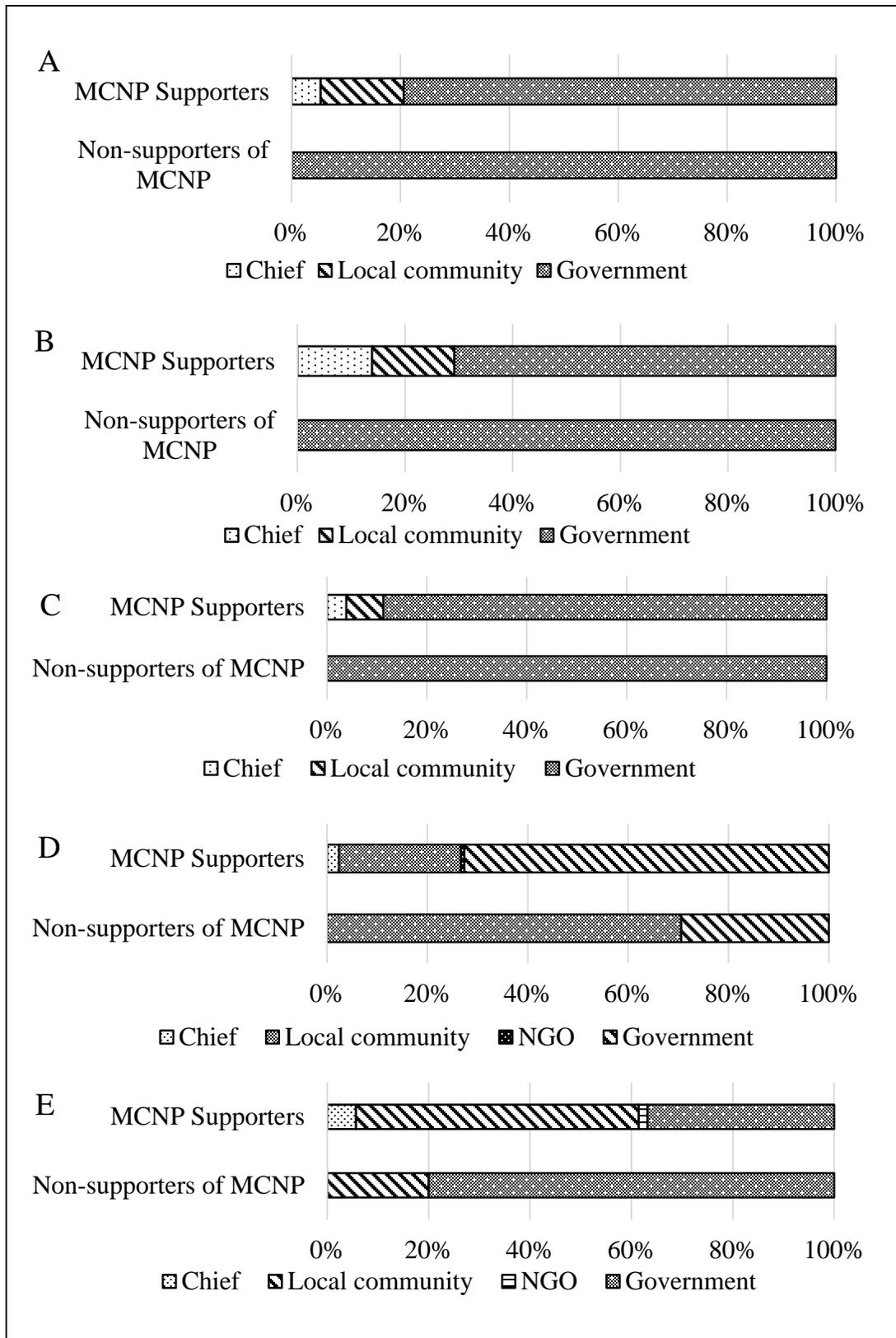


Figure 9.6: Variance of forest ownership (a), control (b), policy makers (c), cost bearers (d) and benefactors (e) between supporter and non-supporters of MCNP projects.

### 9.3.4 Level of engagement in MCNP-activities

Though 95.4% of respondents supported MCNP, only 34.7% have ever taken part in forest management projects at any given time (Fig. 9.7a), one of the reasons being that most of them have never been invited to participate, especially, in Bomboko (Fig. 9.7b) which also shows the lowest percentage in participation. Respondents are therefore, seeking for more mobilisation and sensitisation, direct employment to work in the park and incentives to get them on board (Fig. 9.7c).

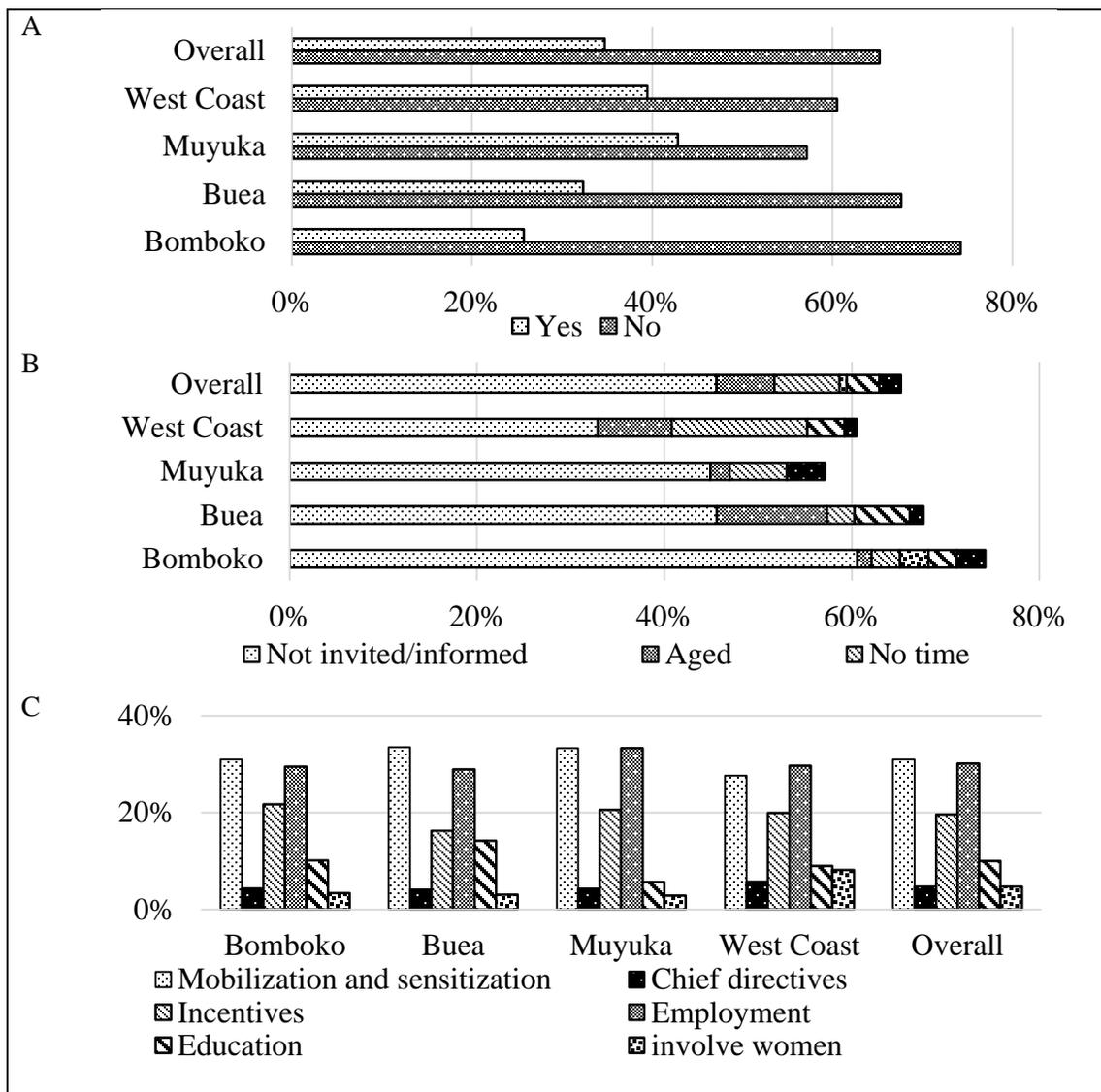


Figure 9.7: Percentages of local communities' member that have ever participated (a), reasons for not participating (b) and ways to enhance participation (c) in MCNP-activities.

Although the study shows that only 1.9% of respondents have ever heard of REDD+, they were all aware of projects like conservation of MCNP, sustainable management of *Prunus* and/or reforestation/tree planting which are an integral part of MCNP-REDD+ projects (Fig. 9.8a). Though 14 different functions/roles are carried out by local participants, results show that they are mostly involved in manual labour (one-off involvement) or being member of committee, whose main role are to enforce regulation within their community, therefore, real engagement is negligible (Fig. 9.8b).

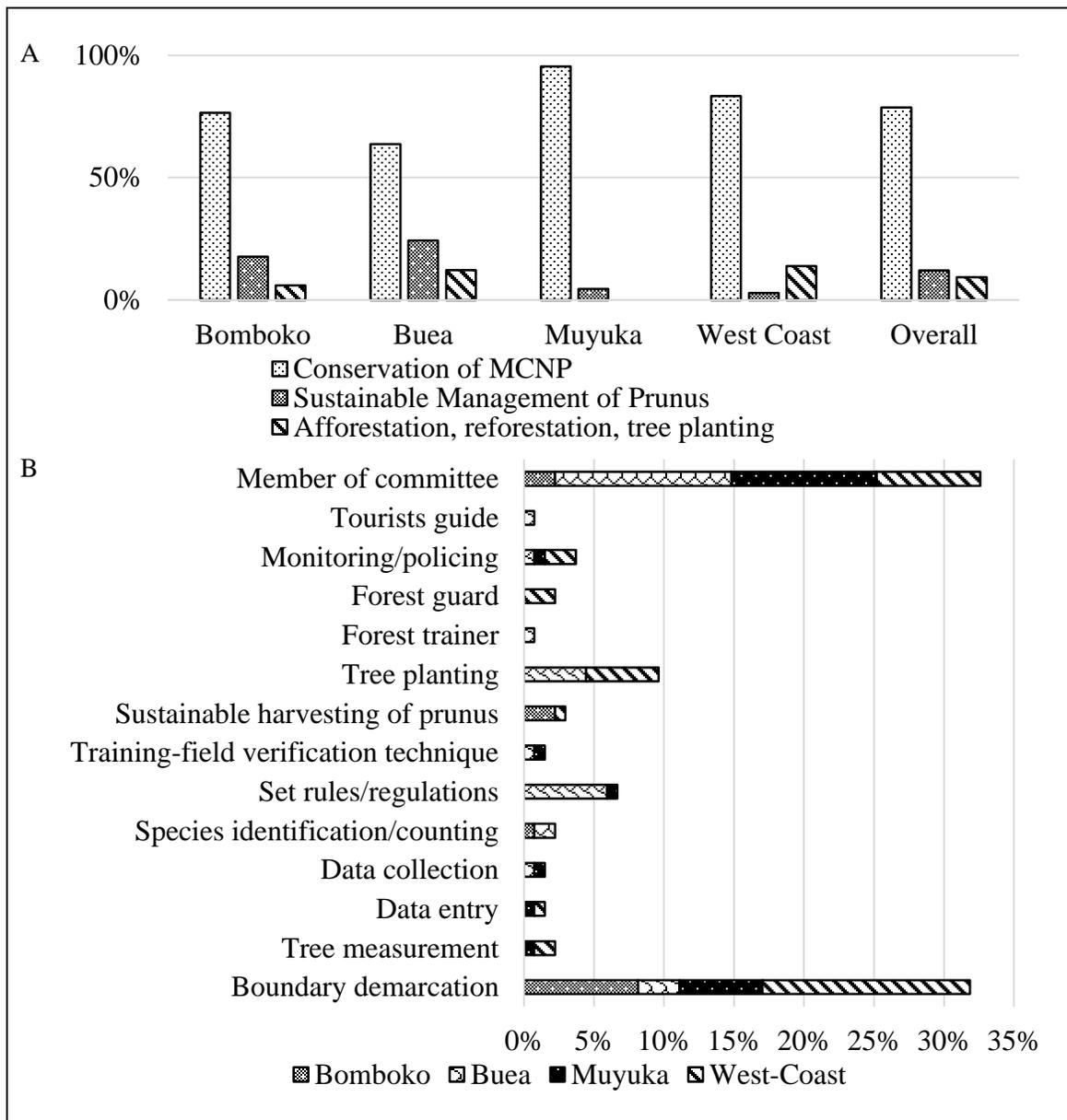


Figure 9.8: Percentages of different projects participated in (a) and function/role carried out (b) by participants within all clusters.

An average of 6-10 members have been trained to carry out forest activities (9.9a), but most community members do not know how many members have been trained (especially in Bomboko, Buea and West-Coast). 17% of respondents are not aware of any training opportunity especially in Muyuka (45%). Figure 9.9b goes further to show that 35% of these information recorded by participants, concern illegal activities, especially in Bomboko (42%).

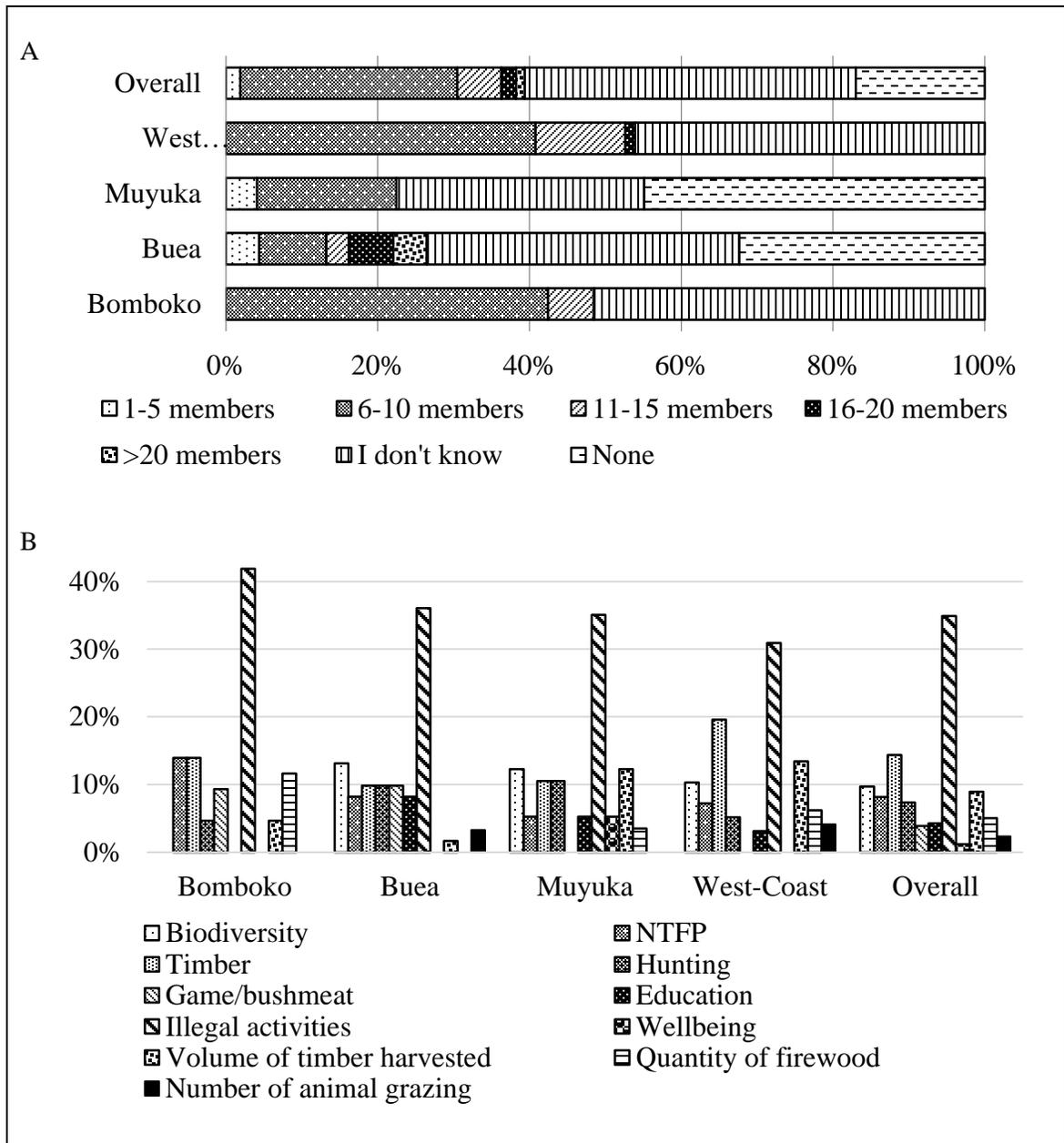


Figure 9.9: Percentages of average number of community members trained for (a) and types of information recorded during (b) MCNP-activities.

Result shows that only 11.8% of respondents have used electronic devices in carrying out any MCNP-activities (Fig. 9.10a). These instruments include GPS, camera and phones which are mostly used in the West-Coast, followed by Buea, Bomboko and Muyuka (Fig. 9.10b). Figure 9.10c shows that other non-electronic devices like cutlasses are also being used, though 6% of participants do not know if there is any use of equipment.

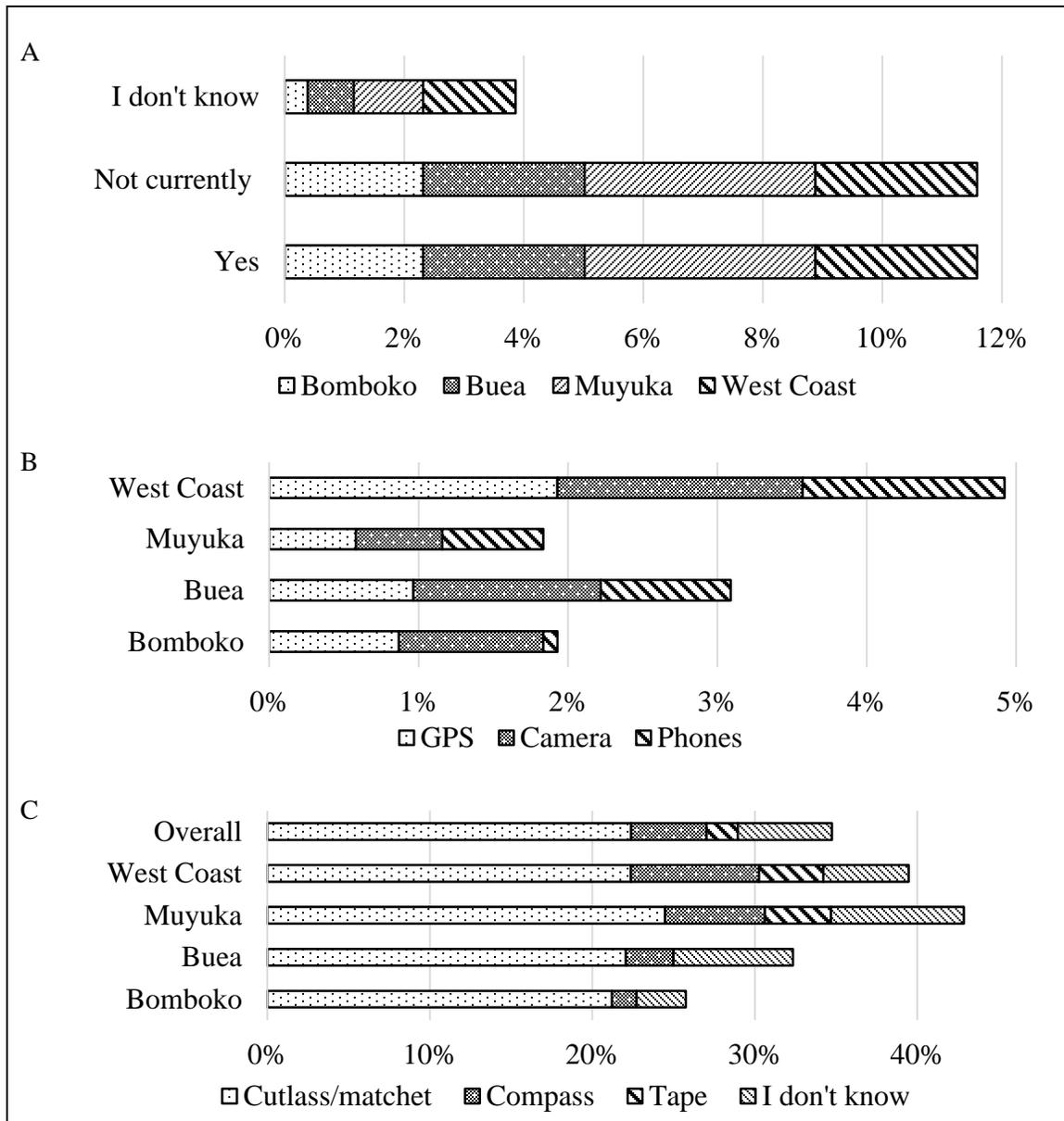


Figure 9.10: Percentages of electronic devices used (a), types of electronic devices (b) and non-electronic devices used (c) in carrying out MCNP-activities.

### 9.3.5 Qualitative results

The word clouds show that, respondents talked mostly about community, park, involvement, working, development, conservation, activities and management (Fig. 9.11a), from where two major themes were established; village community development/benefits (A), and park conservation management activities (B). Figure 9.11b and table 9.2 further show the nature of comments from different levels of stakeholders.

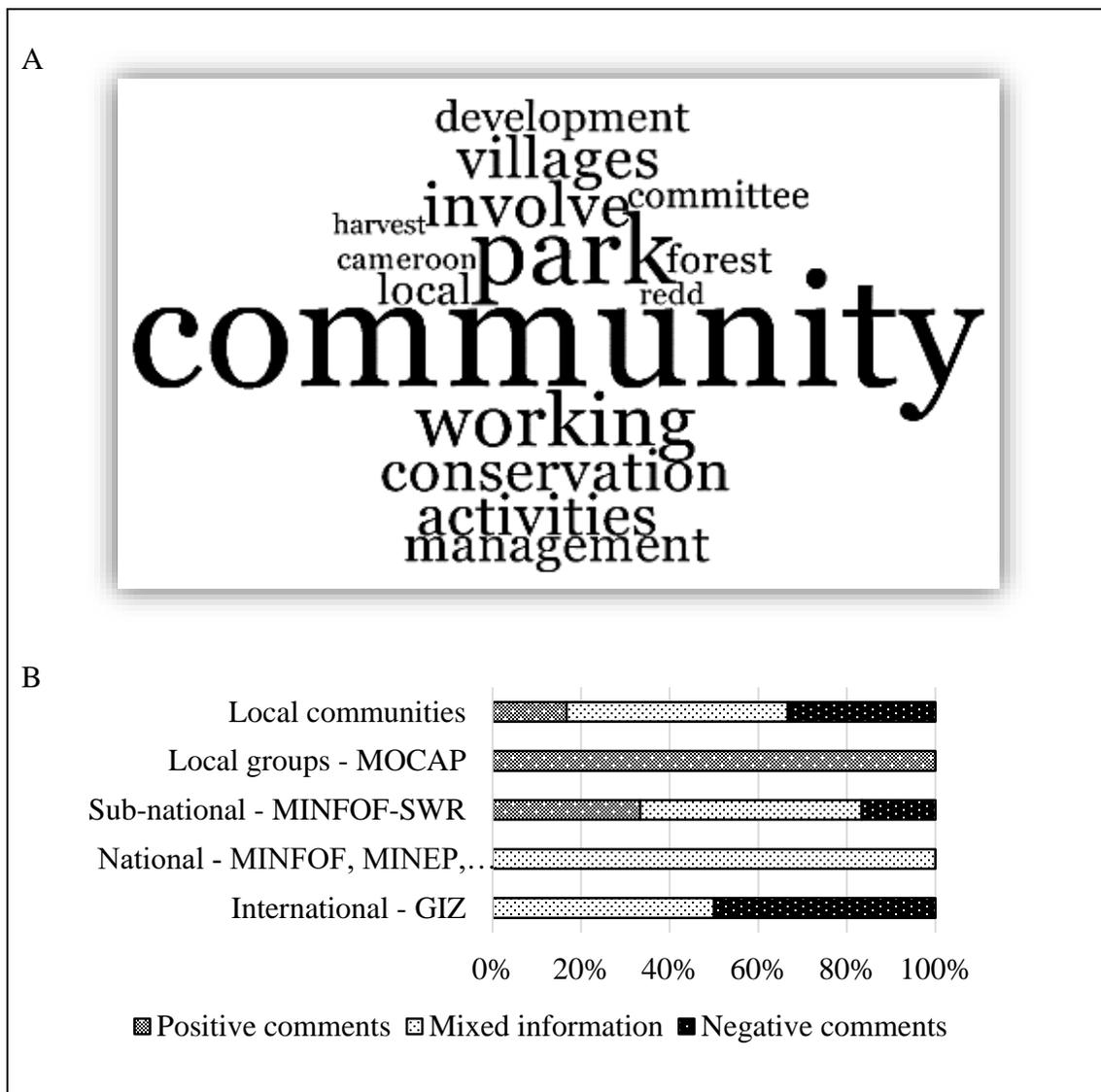


Figure 9.11: Word clouds showing most mentioned words from interviewees (a) and types of comments provided by different levels of stakeholders (b) on co-management issues around MCNP.

### **9.3.5.1 Village community development and benefits**

GIZ interviewee perceives MCNP initiative as having the potential to deliver its sustainable development objective, if and only if, the state dominant power structure is diluted to empower local communities' participation as well as resolution of other challenges like migration.

Question: *“Do you think that MCNP-REDD+ activity will lead to sustainable development of local community?”*

GIZ: *“In general yes. If we involve local communities in the participation of forest activity, it will lead to sustainable development. But in Cameroon, we are at the initial stage to really involve communities in REDD+ issues. Moreover, Cameroon has a very hierarchical structure. So it will take a long time for communities to see that they are empowered enough to participate. In the long run it will certainly lead to sustainable development if other problems like migration are also addressed.”*

Local communities' respondents are concerned about lack of employment, financial assistance, agricultural training as well as other basic necessities. They also show total dissatisfaction in the way communities are treated by park services.

LC: *“We need financial assistance and training to do large scale farming.”*

LC: *“It is better they employ us the indigenous people because we know and understand the forest better.”*

LC: *“We have also asked them to employ the village boys who know more about the forest because they live there, but they refused.”*

LC: *“There is no light, no good road, no health centre, no bank or credit union, but there are private money lenders. Only two houses have lights, no pipe-water. We travel to other villages to fetch water very far from here. We are not motivated. We need microfinance, institutions, schools to train us, we need jobs.”*

LC: *“We are just praying that the REDD+ should put into practice all their conservation ideas. We love the national park too, we love the conservation programme, but we are not happy with the way they are treating us. Our cry is that we need*

*employment, we must not work only on the mountain, and we can work anywhere else. We just need a job and a salary at the end of the month.”*

### **9.3.5.2 Park conservation management activities**

GIZ interviewee reveals a top-down governance approach; whose main reason to include local communities is to amass state benefits; though the national stakeholders assure that they are trying to involve communities. These perceptions contradict statement by sub-national stakeholders as concerns inclusion of local communities as partner because members of local communities function mostly in cheap labour (demarcating boundaries) and reporting illegal activities, while committee members urge their communities' members to implement rules and regulation.

*GIZ: “It is a top-down approach, not a bottom-top. So it is not the community asking for more involvement in the park management, it is coming from the park service trying to involve more local stakeholders because we see more benefit in involving the communities.”*

*National: “We involve the local community in identifying the key drivers of deforestation and land degradation.... local communities are involved in carbon sequestration like CED.”*

*Sub-national: “We are implementing collaborative management approach, whereby, we mobilise the community towards appropriate measures. We try to involve the community as partners and the villagers can tell you how involved they are.”*

*Sub-national: “The clusters are divided by natural boundaries; by hills, rivers etc. ... It enables the conservation members to really know the boundaries ... We employ local community here to demarcate the boundary. ...they (boundary tracers) inform other members of community that any activities on certain areas are illegal. Illegal activities are reported and the park service takes necessary actions. They choose the people who are going to work in this activity and they are actually paid. The village committee send three members each to present what have been done”.*

The approach is more of explanation by park services and instruction compliance by members of communities which contradict co-management approach. Though the sub-national respondent claims that they are not imposing on local communities, the limited function of communities in reporting illegal activities proves that communities are marginalised.

Sub-national: *“We are implementing a collaborative management approach, where, those who are elements of the community development explain about conservation and development. The park was created as a motivator for development... We are assisting villagers to come out with conservation development agreement. We assisted the villages to carry out the ‘agro-ecological socio-economic assessment’ to know what the villages are really doing to earn a living, what they are collecting in the forest, how they use the forest, what are their problems.”*

Sub-national: *“We have to sensitise the communities and negotiate with them. Based on funds available, we can select one or two micro-projects to be funded. It is after this that we can add it in the document of conservation development agreement. It is this document that segregates conservation activities and defines also the responsibilities in the park and conservation development agreement. Stating clearly how we can assist the community by building roads, buying cassava machine etc. So we do not just impose...”*

Sub-national: *“We are working within the framework of MCNP. This park was created in December 2009 with the objectives to ensure sustainable management. The MCNP is peculiar in plants and animals species and also to promote aqua-tourism which is one big objective in this forest projects... One of our responsibilities now is to see, how we can put in place structures for park management. We are looking at the park and activities of the surrounding park... these 41 villages already give you an idea of the pressure around this area. It has a human population of more than 100,000 and a surface area of 58,178 ha. So it is a big challenge to take this responsibility.”*

Sub-national: *“The Park has a lot of protective units like the collaboration management unit which does a lot of patrol to ensure that no illegal activity is done.”*

MOCAP respondent reveals the fact that more communities have engaged in forest projects since the creation of MCNP, and *Prunus* harvesting, though strenuous, is now done in a sustainable way.

Local-group: *“MOCAP was created in 2005 before the national park was created. We started with 13 villages.... After the creation of MCNP, we had about 31 villages that registered with MOCAP.”*

Local-group: *“They cannot harvest it as they used to harvest because it was unsustainable, but now they have to plant the trees and harvest with a specific method which we are training them and only specific trees are harvested though strenuous.”*

Though communities are preserving plant species and felling some, they pride themselves as forest custodian and score their conservation effort at 80%.

LC: *“We are falling down trees, but we are also planting and preserving some particular trees species.”*

LC: *“We are the ones preserving the forest. If we have to rate ourselves in the involvement in forest activity, we would earn 4/5.”*

## **9.4 Discussion**

Local forest management and access to forest resources are essential in maintaining functioning of local communities and culture (Shepherd, 2004) and also vital in the implementation of sustainable REDD+ projects (Peskett et al., 2008). The Programme for Sustainable Management of Natural Resources (PSMNR-SWR) was launched in 2004 when a financial agreement was signed between Cameroon (MINEFI and MINFOF) and Germany (GIZ) as a development aid for sustainable management of natural resources within the South West Region (SWR) and €7,000,000 was disbursed (Mbolo, 2012). The aim was to sustainably manage forest, promote community participation and alleviate poverty, but this has also increased the grip of MINFOF over local communities. MINFOF depends on GIZ and other western donors for financing the programme and this has strengthened their influence in national forest policy and implementation strategies. Thus, projects are operating on a set of foreign ideas and

values which do not fit local ideas. This €7,000,000 development assistance budget was enough incentive to incite appropriate behaviour within MINFOF. Few community projects have also induced behavioural change within members of local communities who stand to lose expected benefits, in case they resist, and their chance of positive outcomes from the battle is negligible.

Before 2009, there were few forest projects operational within MCNP-clusters, but communities had already been practicing forest management such as protection of specific plant species, extension on forest management, inventory of special forest products, enactment of forest by-laws and establishment of clear use rights for specific products among others. The establishment of MCNP in Dec. 2009 registered an increase in forest projects participants. With knowledge of these prior forest practices, it is expected that members of local community would play a major role in MCNP, but the results fall short of this expectation.

#### **9.4.1 Community support for MCNP initiative**

According to Krott et al. (2014), the concept of Actors Centred Power (ACP) is “*a social relationship, where actor A alternates the behaviour of actor B without recognising B’s will*”, while trust is when actor B, accepts actor A’s information without proof/check. Actor A can persuade, provide or with-hold specific information and interacts with B so much so that, B gains confidence in A and acts accordingly, especially, when B is expecting benefits at the end of his/her action. A may use incentives to motivate B’s behaviour and trigger appropriate action so long as A attends to B’s interest. This has made local communities, to willingly, support MCNP-REDD+ projects bestowed on them, as they are reluctantly losing their land rights and access rights to forest and forest resources; with expectation of financial benefits and community development projects.

Local communities perceive the establishment of strict conservation zone as absolutely necessary in enhancing conservation effort and this perception significantly influences participation in MCNP-activities. The major reasons why local communities support the conservation initiative are to promote local communities’ participation, enhance natural environment, generate income and improve community development. Incentives and

information they received, motivated communities into supporting project, but it may be disastrous if their expectations are not met.

#### **9.4.2 Ownership, control, decision-making and projects benefactors**

The processes of forest governance and outcomes of REDD+ initiatives depend heavily, on foreign and national stakeholders who apply elements of ‘actor-centred power’ (trust, incentives and coercion) to influence forest management by empowering marginalised local stakeholders, who, by virtue of poor financial background, have no choice, than to act accordingly, in expectation of developmental and/or financial benefits. According to Larson & Ribot (2007), forest policies and manner of implementation exclude local poor communities from forest benefits with international and national stakeholders influencing outcomes, while manipulating and marginalising local stakeholders. Krott (2005) goes on to state that “*those who utilise or protect forests are forced to subordinate their interests to politically determined programmes in the face of conflict*” as a result of “*external stakeholders and political players availing themselves of power*” These findings alongside that of this study are critical in questioning effectiveness of REDD+ concept in achieving socio-economic outcomes.

Power which is considered “*a hidden factor in development assistance*” is evident in MCNP, where external stakeholders have become more influential, while local stakeholders are powerless with no option, but to follow reluctantly. A study carried out by Mbolu (2012), shows that MINFOF and GIZ are powerful influential actors determining outcomes of natural resource management projects in the South West Region. While local communities are relying on unchecked information from these influential stakeholders, they still comply without checking alternatives because they trust MINFOF-SWR who also trusted GIZ and accepted management conditions laid down by them without checking for alternatives. MINFOF and GIZ have become more influential and powerful (Mbolu, 2012), while local communities have reluctantly lost their rights over the same forest that they had control for decades. Thus, rendering common initiative groups and/or village forest management committees ineffective, powerless and often portray as captives to incentives (motivations) than community representatives.

The 1994 Forest Law allows state ownership of permanent forest domain, but does establish usufruct rights to local communities. This law also enables GIZ, KfW, and other international organisation to exert more influence in controlling natural resource management policies in Cameroon (Mbolo, 2012) which make them to become a *sine qua non* in formulating and implementing forest project with westernised political ideology (Yufanyi & Krott, 2011), that doesn't fit local perspectives. Before the arrival of colonial masters, forest resources were managed according to customary laws with chiefs as main administrators (Bigombé, 2003). State ownership, control and decision over forest policies have induced some community members not to support forest projects and this has significantly affected participation in MCNP-activities. Supporters think that they are the benefactors, while the government bear the cost. However, non-supporters see local communities as cost-bearers and the government as main benefactor. But who really is the main benefactor? The government, international organisation or local communities? At the moment the answer is hardly positive for local communities because expectations have not been met, but time will tell about what happens when carbon is sold.

#### **9.4.3 Local engagement and expectations**

Most members of local communities support the conservation initiative, but between 2012 and 2013, only 17% of respondents took part in MCNP-activities because of inadequate information or lack of invitation to participate. The high level of support shows that they are eager and willing to engage, but the big question is: "*Why are local communities members not given the chance to take up position, and continue with or enhance their common forest practices?*" Even those that are opportune to take part are not taking-up any tangible positions. Instead, they are used as manual labourer (boundary demarcation, tree planting, illegal activities) or mere committee members whose main roles are to enforce rules/regulations within communities. An average of 6-10 members have been trained from each cluster which is relatively low (2.57%) to provide the capacity needed to embark on meaningful participation. This also justifies why the three major activities/roles carried out by participants are being members of

committee, boundary demarcation and tree planting which requires just manual labour. Improve training and education on forest/REDD+ issues will enhance local participation.

According to Kremen et al. (2000), conservation benefits are global, but cost is mainly incurred by local communities who must forgo exploitation rights, restriction from forest and forest resources for the sake of conservation, despite high cultural and livelihood implications. Past PES programmes showed mixed results in benefits to local communities (Pagiola, 2008) and the Clean Development Mechanism did not result into any substantial benefits to the poor and rural farmers, despite its sustainable development objectives due to lack of recognition of customary land claims (Boyd et al., 2007). In 2000, Plantecam enterprise sold *Pygeum* at 2000CFA/kg and in 2006 the export value was about 2,649 million CFA with price ranging from 660-1000CFA/kg (Ingram & Nsawir, 2007). Despite the high price of *Prunus*, only 150CFA is being paid to harvester because of lack of market information, dissemination and market monopoly by park managers. Given the availability of capital, more value could be added to *pygeum* through production and transformation (drying, chipping and extraction). The government and international organisation have successfully used the element of trust and incentives to put local communities under their influence, it is now left for them to prove their trustworthiness because there is yet no meaningful community development or income generated through employment to improve livelihoods.

## **9.5 Conclusions and recommendations**

Despite local communities' massive support of MCNP-REDD+ projects, forest managers have taken advantage of communities' voluntary/cheap labour, who trust forest managers to compensate them, by providing socio-economic benefits and improving livelihood. While MINFOF and GIZ are becoming more influential, communities are losing their rights over decades of standing control of forest, thereby, rendering members of committees powerless and making them captives to motivations than community representatives. Some members of local communities do not support the conservation project because of perception that their land rights had been seized and this has also affected engagement. Members of MCNP-clusters have for decades lived

and derived their livelihood from the forest, and it would sound unbelievable if they cannot boast of enhancing livelihood, alleviating poverty and community development with such bio-diversifying rich natural forest as co-managers.

As of now, REDD+ is still in its infant stage and has actually not yielded any substantial income or development to local communities, though, expectations remain high. Its threats are evident, but REDD+ has much potential in showcasing the opportunity it holds if carried out through a bottom-top approach where, local communities are main stakeholders and managers of the initiative. So trade-off between conservation and development should be acknowledged, negotiated and accepted by both, REDD+ promoters and community representatives during project planning to enable realistic appraisal and legitimisation of the conservation initiative. Project design needs to be flexible, and based on adaptive collaborative management approach which aims at producing appropriate outcomes that renders project more resilient. National level REDD+ should be subject to adaptation and community development objectives as agreed at COP-18 in Doha.

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## **10 Mt. Cameroon National Park REDD+ project: a threat or an opportunity to local communities?**

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This study presents an analysis of the involvement of local communities in the design, implementation and monitoring of REDD+ projects at an early stage to provide information that guide management strategies in ensuring effectiveness, efficiency and equitable REDD+ programmes. Such a transition will also prevent early failure of the initiative as REDD+ projects get implemented through the UNFCCC process. This chapter provides a broad overview of REDD+ concepts, a synthesis of results, and conclusion from the research, that evaluates if the MCNP-REDD+ projects is an opportunity or a threat to local communities.

### **10.1 Introduction**

REDD+ may result to land grab rendering socio-economic consequence to local communities; yet, there is no binding commitment to safeguard standards, local rights, tenure security and government failure in securing Free Prior Informed Consent (Larson et al., 2013). Good forest projects should be more about recognising the rights of indigenous people rather than being in control of their territory. As stated by Mbow et al. (2012), 70 million hectares of land have been grabbed in unsustainable land deals in tropical African countries by multinational investors and this has led to massive deforestation without any benefits for local communities. With increase in logging, mineral and oil exploitation, large-scale monoculture plantation, grazing, construction and big hydroelectricity dams, local territories are being invaded with activities that result into major deforestation and land degradation. Both international and governmental strategies to reduce deforestation have sometimes, had socio-economic consequences on the indigenous people and local communities (Blom et al., 2010). Eviction of indigenous people and limited access to forest resources are evident in the history of national park and protected or conservation areas creation, though, Burgess et al. (2013) argue that local eviction events on some projects site like the Rufiji delta, had nothing to do with REDD+ or changes in government policy, but rather a historical

event that stretch back over 100 years and therefore, unconnected to REDD+ implementation. Deforestation is not a common practice for forest dwellers because they cultivate only small farming area for food crops and exploit the forest for basic needs, yet, they still preserve the forest which is their home. It is big companies and private land owners who gain exploitation rights from government, permitting them to deforest and degrade large areas of forest. Quiet often these big companies use local people as labourers to deforest their project sites.

Climate change issues have created an urgent need to reduce carbon dioxide emissions largely produced by burning fossil fuels. Despite the fact that this fossil fuel is burnt mostly by developed countries, lands in the global South now face the threat of being grabbed for monoculture tree planting. The replacement of natural forests for monoculture tree planting and plantation causes deforestation that only goes to increase climate issues. Instead of confronting the root cause of climate crisis, organisation like Forest Stewardship Council now legitimise the replacement of natural forest by biomass plantation as ‘sustainable certified’ (Larson et al., 2013). This has resulted to an increase in price of wood, which in turn causes a rise in demand for woody biomass energy that adds pressure to the forest, increase conflict between different land tenure systems and affects other tropical ecosystems.

Contrary to logging companies that cut down trees and sell timber for money, REDD+ promoters make money by leaving the trees standing, to enhance the amount of carbon stock. Now companies are buying carbon credit; the right to continue emitting carbon by paying someone to stop the same amount of carbon to be stored somewhere else in the world. The storage of carbon and making of money by REDD+ promoters are guaranteed, if and only if, the trees remain standing. This sometimes might lead to conflict with local communities who live in and derive their livelihood from the forest, as only members of the community benefited.

REDD+ is now seen as a tool to mitigate deforestation that is fast spreading across tropical forest countries because of the potential to store about 50% more carbon per unit area than forest outside the tropics. According to Siteo et al. (2013), REDD+ must be implemented in a manner that respects the rights and livelihoods of local communities.

But how much information do these people have on REDD+? Is it what they want or it is imposed on them? Who is the main benefactor of these projects? The world at large, REDD+ promoters, the government or the local community? At COP-16, a consensus was reached that REDD+ should be carried out in three different phases; developing an action plan, implementation of REDD+ policies and performance based payment, though, financial options were deferred to COP-17 in Durban. By using the tripology of property rights - authoritative, control and use rights (Sikor et al., 2012), actors and their rights need to be identified to determine the allocation of appropriate incentives to stakeholders.

However, REDD+ has become a vital climate change mitigation option in Africa with its greatest challenges revolving around implementation and impacts on livelihoods of forest dwellers. With 60% of Africans living in rural areas and surviving mostly from agriculture, food security (adequate nutrition) should be balanced with efforts to avoid deforestation. The major cause of forest loss in this continent has been that of poor farming practices such as the use of fire to burn down cultivated land and shifting cultivation amongst others. Population increase has led to an increase in the demands of food, bio-fuels, minerals and timber, which also contributes to deforestation. Addressing the multiple drivers of deforestation is becoming complex, so there is need for a close examination of effort to fight climate change, mitigation, adaptation and meeting up with developmental goals simultaneously. Therefore, REDD+ if carried out effectively, could contribute to poverty alleviation while addressing mitigation and adaptation of climate change, hence, in line with sustainable development and meeting-up with the Millennium Development Goals (MDGs) and the upcoming Sustainable Development Goals (SDGs).

Although the eight MDGs provided a focal point for government to establish policies and aid programmes to improve livelihood and environmental sustainability, it failed to consider the holistic nature of development with no mention of human rights issues. Theoretically, the goals applied to all countries, but in reality, it provides achievable targets for poor countries (good health, poverty reduction and hunger). Still, more than 800 million people live in hunger as we approach the MDGs deadline of 2015 (UN-

MDGs, 2014). From January 2016, it is hope that the 17 SDGs with 169 proposed targets and indicators aimed to frame the UN members states agenda and policies to end poverty, improve livelihood and wellbeing, good governance, human rights, gender equality, biodiversity conservation, sustainable management of natural resources and economies, combat climate change and its impacts, promote sustainable use of natural ecosystems, social justice and global partnership (local stakeholders inclusive), will better transformed the world toward sustainable development.

State ownership of forest is central in Cameroon and all land without a registered land title is treated as state land. The registration procedure is also inaccessible making the state to be in control of most of the land. Ngendakumana et al. (2013), argues that the success of conservation and REDD+ implementation cannot be effective without recognition and enforcement of traditional tenure because the institutional and policy frameworks give exclusive land tenure rights to the states, with local farmers having limited access to forest and its resources which is their source of livelihood. Cameroon's national REDD+ readiness process is at a pilot stage covering 30% of forested land involving nine REDD+ projects. Freudenthal et al. (2011) in his report on REDD and Rights in Cameroon, found out that Cameroon REDD+ readiness preparatory plan lacks effective strategies to enhance engagement of local communities, insufficient data on drivers of deforestation, lack of free prior and informed consent, and unclarified benefit-sharing mechanism, resource tenure and carbon rights.

There is need for carbon as well as social and economic data to be validated, verified and periodically monitored for all REDD+ projects. Quantifying changes in carbon stocks; assessing permanence and leakages; and understanding projects implication for biodiversity and local communities remains major challenges in designing, implementing and monitoring of REDD+. Though many activities have been launched to improve the content and functions of REDD+, these activities seem to be distributed into various programmes with different implementation modalities and some programmes seem to show redundancies, resulting into complexity in understanding major stakeholders, implementation strategies, aims, policies and methodology surrounding REDD+.

This study supports the findings of Freudenthal et al. (2011), who argues that, REDD+ plans include little engagement of local communities, hence, developing in a top-down manner and there is fear that REDD projects could marginalise and increase poverty among local communities because contrary to the 1994 Forestry Law, local people are not aware of REDD+ existence, no evidence of plans for participation of local communities in national REDD+ readiness process that connects to FCPF. Only 1.5% of respondents in MCNP communities know the reality of REDD+, though, most respondents are aware of the need to reduce climate change, deforestation, tree planting, conservation of forest and biodiversity. REDD+ promoters also promise employment and finance of local projects through a participatory-based approach. With this promise of a better life, these vulnerable communities with limited financial resources have no other choice, but to follow reluctantly.

For the past 30 years, the government of Cameroon has not been engaged on the management of this reserve and this negligence had encouraged encroachment. Since 2009, members of park villages are deprived from extending farmlands into the park. Although communities' members do have claims, they still recognise that they were not supposed to be in the park. It is due to increased population, farmland scarcity, and state laxity that plantations were open in the park, but they still expect compensation. Insecure tenure has resulted to land claims and contestation within MCNP. The 1974 Land Ordinance allows the government to be guidance of all lands, but traditional rulers have rights over land within their territories and this has led to unresolved land claims. For communities to actually benefit from forest initiatives the proposals should come from within the community itself and members of communities should be the main stakeholders managing the initiative. The projects must not be imposed on members of communities from the outside (government, NGOs, or multinationals). Most of these communities affected by REDD+ projects, rely essentially on farming, agro-forestry and harvesting of NTFPs to feed their households and generate income for themselves. REDD+ must not be a situation where local communities and forest are subjected to a form of expropriation. Excluding indigenous people from accessing forest resources (food, fruits, medicines, fibres, fishing and hunting) for basic need is an infringement on

their livelihood, survival, and above all, their customs and traditions with limited land rights.

When environmental and developmental concerns/priorities are defined without according standing to local voices in decision-making, negative consequences are inevitable. Indigenous people in local communities around REDD+ projects areas are subjected to sensitisation and awareness raising, leaving out migrants who have been living in harmony with each other for more than a decade and this is causing some of them to relocate. Some are persecuted for not following the rules, making them to lose their freedom and independence. Some members of the community who depend heavily on the forest relocate to cities for alternatives.

Incentives are offered to communities through a participatory-based approach as compensation for their support and limited use of forest in the form of jobs and finances for community projects. Some community members are recruited for boundary demarcation, while most of them work as security guards trapping down defaulters and reporting illegal forest activities which result to conflict within MCNP. Community head reports any unlawful entrance or activity in the forest, creating hatred and conflict amongst them. But then, the most disadvantaged members of the community are excluded because they neither get hired nor participate in community projects.

## **10.2 Conclusions and recommendations**

Forest dwellers have preserved and coexisted with the forest for centuries before the arrival of REDD+, but the vast majority of local community members do not benefit from government regulated forest revenue. Instead, they are accused of deforestation while polluting companies go scout free with claims that buying carbon credits permit them to pollute. Even if leakages are prevented and REDD+ projects are successful, climate change might not be mitigated if the polluting countries continue to pollute and offset in tropical countries at the expense of local communities' livelihoods and land rights. The future of these forests will continue to be threatened by climate change and the raw materials needed by these big polluters such as minerals, oils, coal, timber, will be causing deforestation in other areas. Reducing emission (on site) from big companies

while supporting community forest management is a more feasible option to mitigate climate change and safeguard land rights and livelihood of indigenous people.

REDD+ donors and managers should support local community quest for secure tenure and national level REDD+ programmes should be linked to adaptation and community development objectives as agreed at COP-18 in Doha (UNFCCC, 2012). Members of local communities are now being restricted access to land, water, food, and firewood for daily livelihood because most of them do not hold legal title to the forestland they occupy, use and derive their basic needs. Because of decline in forest products due to restriction on reserve, developmental projects and provision of improved agricultural techniques to farmers to meet up with livelihood challenges should be a priority. Therefore, community forest management might be a feasible option in enhancing sustainable livelihood and communities' development while safeguarding their rights and values. Lack of recognition of land rights, poor livelihood, unemployment, bad roads and absence of markets for forest products are the major problems faced by local community that is not being targeted by REDD+. It is unlikely if REDD+ will really benefit local communities with associated restrictions, without solving these major issues faced by local communities.

Forest governance or policies should be framed within the context of climate change and build capacity for monitoring, reporting and verifying. To avoid projects based inconsistency within countries, an institution should be established to measure and account for national emission levels while coordinating across different government departments and integrating all agencies, programmes and donors for coherency in development policies. Cameroon should be capable to keep drivers of deforestation under control and embed customary laws into forest laws in such a way that national REDD+ strategies will fall under a broad national development strategies without marginalising forest dwellers. National institutional framework should be regulated to promote equity, efficiency and accountability in verifying results and compensation for reduction in emissions or increments in carbon stock while ensuring that local communities also benefits from REDD+ activities. Forest policies should ensure participation of forest users in developing forest management plan. According to Evely

et al. (2011), high level of participation in conservation projects increases sustainability and adaptability because they build capacity of participants to learn and better manage projects and also stakeholders' participation in developing policy. Implementing them encourages both ownership and responsibility of environmental problems.

There is need to empower local communities to better engage in decision-making about issues that concern them, claim ownership of their land through community forestry and participate as major stakeholders in all activities in their environment. State establishment of community forest will strengthen community rights and guarantee livelihoods. Communities' rights need to be protected through forest education, gender balance, social justice, capacity building, access to information, standing and influence accorded at decision-making processes and engagement in sustainable resource management. To ensure appropriate tenure at local context, the local communities must be involved in decision-making through a Free Prior and Informed Consent. So effective communication and education on relationship between climate change, deforestation and land degradation, aim of project, roles of villages during implementation and request of permission to carry out projects within villages is vital. Local people should be equal stakeholders with full information access and consented to planned projects activities and intervention. Their opinion should be considered since the outcome of REDD+ can have impact on their rights and livelihoods.

Local communities are raising expectation on REDD+ projects, but there is still no benefit-sharing mechanism which may later render projects unsustainable. Define rules for accounting, management and transfer of incentives should be set-up to nest MCNP-REDD+ projects, through a broader approach which does not only monitors, reports and verifies carbon stock, but tries to understand and analyses the impact between REDD+ policies and other management objectives. Socio-economic availability and deployment of finance will enhance forest management, conservation and livelihood of forest dependent communities. Incentives need to be created for REDD+ activities alongside with government reforms and policies to address the drivers behind deforestation. Project performance must be assessed alongside substitute to livelihood (like animal husbandry, finance for small businesses, employment), innovative agricultural technique

to enhance yield, and other sources of forest products should be explored to maintain permanence in forest cover.

Participation of delegates at cluster platforms may not necessarily indicate a commitment to the project, the true extent of engagement can only be known (maybe in five years) when participants must have made their own evaluation. With capacity building among local institutions, REDD+ should be geared towards sustainable development with effective equal local property rights and legal carbon ownership rights while creating government mechanism that favours co-benefits and equitable distribution of carbon revenue. The status, context and trend of specific sites need to be known to support argument and improve capability at negotiation tables accompanied by solid review of forms of land tenure, available resources and level of property rights. Members of communities should also be given the opportunity to engage in meaningful positions (like forest guards, species identification and tree measurement) rather than mere labourers.

Securing tenure rights and effective engagement in decision-making at cluster platforms are essential in realising MCNP-REDD+ objectives and community adaptive capacity to climate change. Above all, good forest projects should be more about recognising the rights of indigenous people rather than claiming ownership and control of their territory. Based on the findings, this study proposed the following top 10 recommendations to enhance effectiveness, efficiency and equity in MCNP-REDD+ initiative and prevent socio-economic marginalisation of forest dwellers:

- The goals of REDD+ should be clearly defined with adequate information; on processes and outcomes - both positive and/or negative impacts to the environment and/or local livelihoods; effectively communicated to local communities, and the level of reduced emissions should be measurable and verifiable to quantify payment.
- Alternative livelihoods such as animal husbandry, finance for small business and employment (like forest guards and data collectors) should be provided, with

schools, hospitals, pipe-borne water, markets established to sell local communities' products and services, as well as establishment of farm-to-market roads.

- Programmes should be built on the understanding and scope of forest dependency, progress and outcome of the programmes should be closely monitored and evaluated, and the use of an adaptive approach to project management should be encouraged.
- Forest policies should be able to support project activities that yield desirable outcomes without marginalising local communities, by clarifying and securing community rights, recognising and integrating customary practices and values in the REDD+ governance strategies.
- External threats like plantation expansion, illegal logging and population migration should be resolved at sub-national and national levels, while local threats should be addressed with locally based conservation solutions such as levying of fines and seizure of illegal products or equipment by the Village Forest Management Councillors.
- Trade-offs between conservation and development should be acknowledged, negotiated and accepted by both REDD+ promoters and local representatives during project planning to enable equitable and transparent benefit-sharing and responsibilities, realistic appraisal and legitimisation of MCNP initiative.
- The heterogeneity and complexity of communities should be acknowledged (different cultural and ethnic backgrounds) instead of the 'one size fit all' approach to avoid elite capture of benefits which could result into conflict of interest and encroachment by non-elite such as immigrants and outsiders.
- Community livelihood needs should be best understood and treated as top priority during negotiation and planning while respecting communities' usufruct rights which grant local forest access rights to harvest NTFP.
- Project design needs to be flexible and based on adaptive collaborative management approach which is aimed at producing appropriate outcomes, that renders projects more resilient to vulnerable livelihood, by ensuring continuous provision of food, enhancement of customary rights, community development and provision of alternative livelihoods for the sustainability of REDD+ projects.

- Enhanced community engagement in planning, implementation, monitoring and evaluation through sensitisation and collaborative decision-making at all project levels to enhance long-term communities' support and project legitimacy.

The success of REDD+ depends on the effective engagement of local communities because they are the ones to implement REDD+ in tropical forest and are the potential benefactors, but few researchers have paid attention to what triggers changes in perceptions that lead to appropriate behaviours and enhanced engagement of communities in forest projects. As the adverse effects of climate change become more evident, the REDD+ implementation challenges such as tenure insecurity, inadequate forest governance, inequitable benefits-sharing, livelihood challenges and ineffective communication should be addressed to get all stakeholders on-board. This study attempts to make a contribution to this by carrying out a multi scale analysis of local reality to assess the compatibility and influence of land tenure systems, forest policies, communication processes, benefit-sharing mechanism and present co-management approach to full and effective engagement at local level. Though the future of REDD+ initiative is yet unknown, it has the potential of conserving the environment, mitigating climate change, generating income, developing communities and improving livelihoods for local communities. The present level of community engagement in MCNP projects makes the attainment of these goals difficult. This study strongly recommends a participatory bottom-up approach that empowers and allows more decision-making powers to members of community to achieve the potential co-benefit expectations of REDD+. The lessons presented in this research are relevant in (re)designing and implementing legitimate management strategies that favour REDD+ social-safeguard standards and ensure effective engagement of all stakeholders for legitimacy and sustainability of all REDD+ initiatives.

### **10.3 References**

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# Appendices

## 1. Definition of terms

A **Cluster Facilitator (CF)** ensures the animation and coordination of the cluster platform and facilitates the communication between park service, the villages and the cluster platform.

**Cluster Conservation Zone (CCZ)** is a section of the park allocated to a group of villages to facilitate collaborative management.

**Cluster Platform (CP)** is the central communication and information hub between the park management and the park villages.

**Collaborative Management Activities (CMA)** are activities needed for sustainable management of the national park and are executed by villagers independently and/or together with the park service.

**Conservation Bonus (CB)** is a fixed amount per village per year rewarding villagers' efforts in collaborating actively in conservation efforts.

**Conservation Credit (CC)** are virtual coupons generated through the participation of an individual or group of individuals in remunerated CMA's, and is used only to facilitate village contribution to village development measures.

**Conservation Development Agreement (CDA)** is a written agreement between the park service and park villages to prove their willingness to collaborate in the management of the park and in village development.

**Village Development Measures (VDM)** is the main measures identified for support and development in park villages (income generating activities and/or infrastructure).

## 2. Supplementary tables

*Table 3.2 Types of comments from different stakeholders on different tenure related themes derived from the word clouds.*

<b>Stakeholders</b>	<b>Types of comment</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>Total</b>
International - GIZ	Positive	-	1	-	-	1(20%)
	Mixed	-	-	-	-	-
	Negative	1	-	4	-	5(80%)
National - MINFOF, MINEP, Planet Survey	Positive	-	1	-	-	1(100%)
	Mixed	-	-	-	-	-
	Negative	-	-	-	-	-
Local communities (LC)	Positive	-	3	-	-	3(23%)
	Mixed	-	-	-	-	-
	Negative	1	4	1	2	8(77%)

*Table 4.1: Types of comments across different stakeholders on different family farming related themes derived from the word clouds.*

<b>Level of stakeholders</b>	<b>Types of comments</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>Total (%)</b>
International - GIZ	Positive	1	-	-	1(25%)
	Mixed	-	-	-	-
	Negative	1	1	1	3(75%)
Local communities (LC)	Positive	-	1	-	1(10%)
	Mixed	-	1	1	2(20%)
	Negative	1	-	6	7(70%)

Table 4.2: Normality, Mann-Whitney and t-test, showing how participation in MCNP-activities relates to number of landholding.

A: Have you ever taken part in any of these forest projects at any level?		Group statistics			Test of Normality (Shapiro-Wilk's)			Mann-Whitney U Test			
		N	Mean	S.D.	Stat.	df	Sig.	U	Sig.	z	r
No		169	2.17	.970	.843	169	.000	10258	.000	4.522	.30
Yes		90	2.87	.962	.883	90	.000				
Bomboko	No	49	2.02	.854	.834	49	.000	568	.019	2.351	.29
	Yes	17	2.59	.712	.837	17	.007				
Buea	No	46	2.43	1.068	.871	46	.000	683	.017	2.384	.29
	Yes	22	3.23	1.343	.899	22	.028				
Muyuka	No	28	2.57	.879	.773	28	.000	394	.023	2.276	.33
	Yes	21	3.19	.750	.840	21	.003				
West-Coast	No	46	1.83	.902	.725	46	.000	974.5	.001	3.193	.37
	Yes	30	2.53	.730	.700	30	.000				
<b>B: Independence samples t-test</b>		<b>Levene's Test for Equality of Variances</b>			<b>t-test for equality of Means</b>			<b>BCa 95% Confidence Interval</b>			
		<b>F</b>	<b>Sig.</b>	<b>T</b>	<b>df</b>	<b>Sig.</b>	<b>Lower</b>	<b>Upper</b>			
		2.368	.125	-5.507	257	.000	-0.944	-.447			
Bomboko		.349	.557	-2.458	64	.017	-1.029	-.106			
Buea		1.973	.165	-2.630	66	.011	-1.394	-1.91			
Muyuka		1.442	.236	-2.595	47	.013	-1.099	-1.139			
West-Coast		6.789	.011	-3.756	70.461	.000	-1.083	-.332			

Table 4.3: Linear regression model summary and coefficient showing relationship between participation and landholding in all/each cluster

<b>Model summary</b>						
<b>Model</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>Adjusted R<sup>2</sup></b>	<b>ANOVA</b>		
				<b>F</b>	<b>Sig.</b>	
Overall	.325	.106	.102	30.328	.000	
Bomboko	.294	.086	.072	6.043	.017	
Buea	.308	.095	.081	6.918	.011	
Muyuka	.354	.125	.107	6.734	.013	
West-Coast	.385	.149	.137	12.906	.001	
<b>Linear regression Coefficient</b>						
<b>Model</b>		<b>B</b>	<b>SE</b>	<b>β</b>	<b>t</b>	<b>Sig.</b>
Overall	Constant	.981	.072		13.582	.000
	Landholding	.152	.028	.325	5.507	.000
Bomboko	Constant	.928	.144		6.458	.000
	Landholding	.152	.062	.294	2.458	.017
Buea	Constant	1.001	.134		7.462	.000
	Landholding	.120	.046	.308	2.630	.011
Muyuka	Constant	.854	.231		3.692	.001
	Landholding	.202	.078	.354	2.595	.013
West-Coast	Constant	.953	.134		7.122	.000
	Landholding	.210	.058	.385	3.593	.001

Table 4.4: Linear regression model summary and coefficient showing how livelihood depends on number of landholding and labour in all/each cluster(s).

<b>A: Model summary</b>						
Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	ANOVA		
				F	Sig.	
Overall	.435	.189	.183	29.926	.000	
Bomboko	.494	.244	.220	10.179	.000	
Buea	.467	.218	.194	9.046	.000	
Muyuka	.404	.163	.146	9.179	.004	
West-Coast	.303	.092	.067	3.691	.030	
<b>B: Coefficient</b>						
Model		B	SE	$\beta$	t	Sig.
Overall	Constant	.900	.199		4.53	.000
	Landholding	.453	.067	.394	6.732	.000
	Labour	.093	.051	.106	1.820	.070
Bomboko	Constant	.661	.304		2.173	.034
	Landholding	.532	.129	.474	4.133	.000
	Labour	.040	.078	.059	.514	.609
Buea	Constant	.855	.506		1.688	.096
	Landholding	.551	.130	.469	4.253	.000
	labour	-.053	.122	-.048	-.435	.666
Muyuka	Constant	1.094	.538		2.034	.048
	Labour	.462	.153	.404	3.03	.004
West-Coast	Constant	1.697	.279		6.081	.000
	Landholding	.199	.117	.207	1.707	.092
	Labour	.102	.080	.154	1.267	.209

*Table 5.1: Types of comments across different stakeholders on different forest governance related themes derived from the word clouds*

<b>Levels of stakeholders</b>	<b>Types of comments</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>Total</b>
International - GIZ	Positive	-	-	-	-	-
	Mixed	-	-	-	1	1(20%)
	Negative	3	1	-	-	4(80%)
National - MINFOF, MINEP, Planet Survey	Positive	-	-	1	4	5(83%)
	Mixed	-	-	-	1	1(17%)
	Negative	-	-	-	-	-
Sub-national - MINFOF-SWR	Positive	-	-	-	-	-
	Mixed	-	-	2	-	3(67%)
	Negative	1	-	-	-	1(33%)
Local communities	Positive	-	1	-	-	1(17%)
	Mixed	-	2	-	-	2(33%)
	Negative	1	2	-	-	3(50%)

Table 5.2: Mann-Whitney test (a), independent samples t-test (b) and significant linear regression models and coefficient (c) within MCNP showing how participation depends on perception of land-rights enhancement.

<b>A:</b>		<b>Mann-Whitney test</b>	<b>U</b>	<b>Z</b>	<b>p</b>	<b>Effect-size (r)</b>				
		Overall	10,6770	7.11	<.0001	.452				
		Bomboko	708.0	5.11	<.0001	.639				
		Buea	606.0	2.19	.029	.274				
		Muyuka	827.0	2.88	.004	.412				
		West-Coast	493.5	4.21	<.0001	.503				
<b>B: Independence samples t-test</b>		<b>Levene's Test for Equality of Variances</b>		<b>t-test for equality of Means</b>			<b>95% BCa CI</b>			
<b>Equal variance assumed</b>		<b>F</b>	<b>Sig.</b>	<b>t</b>	<b>df</b>	<b>Sig.</b>	<b>Lower</b>	<b>Upper</b>		
Overall	Land-rights	.400	.528	-7.714	245	.000	-1.249	-.741		
Bomboko	Land-rights	1.136	.291	-6.409	62	.000	-1.478	-.779		
Buea	Land-rights	3.599	.062	-2.794	62	.007	-1.377	-.229		
Muyuka	Land-rights	.059	.808	-4.939	47	.000	-2.077	-.875		
West-Coast	Land-rights	.187	.666	-3.005	68	.004	-1.095	-.221		
<b>C: Significant model summary</b>						<b>Coefficient</b>				
	<b>R</b>	<b>R<sup>2</sup></b>	<b>Adj. R<sup>2</sup></b>	<b>ANOVA</b>			<b>B</b>	<b>β</b>	<b>t</b>	<b>Sig.</b>
				<b>F</b>	<b>Sig.</b>					
Overall	.442	.195	.192	59.512	.000	Constant	.585		5.586	.000
						Land-rights	.196	.442	7.714	.000
Buea	.334	.112	.098	7.808	.007	Constant	.841		4.457	.000
						Land-rights	.139	.334	2.794	.007
Muyuka	.585	.342	.328	24.395	.000	Constant	.555		2.976	.005
						Land-rights	.231	.585	4.939	.000
West-Coast	.342	.117	.104	9.031	.004	Constant	.635		2.350	.022
						Land-rights	.178	.342	3.005	.004

*Table 6.1: Types of comments across different stakeholders on different communication related themes derived from the word clouds.*

<b>Level of stakeholders</b>	<b>Type of comments</b>	<b>A</b>	<b>Total (%)</b>
International - GIZ	Positive	3	3 (75%)
	Mixed	1	1(25%)
	Negative	-	-
National - MINFOF, MINEP, Planet Survey	Positive	2	2(50%)
	Mixed	1	1(25%)
	Negative	1	1(25%)
Sub-national - MINFOF-SWR	Positive	2	2(50%)
	Mixed	1	1(25%)
	Negative	1	1(25%)
Local groups - MOCAP	Positive	2	2(67%)
	Mixed	-	-
	Negative	1	1(33%)
Local communities (LC)	Positive	2	2(67%)
	Mixed	-	-
	Negative	1	1(33%)

Table 6.2: Kendall's  $\tau$ -values showing significant correlation between participation and knowledge and/or understanding of REDD+.

		<b>Participation in MCNP activities</b>		<b>Have you ever heard of REDD+?</b>	<b>If yes, what are its objectives?</b>
Participation in MCNP activities		1		.133*	.132*
Have you ever heard of REDD+?		NO	YES	1	.998**
	NO	168 (66.1%)	86 (33.9%)		
	YES	1 (20%)	4 (80%)		
If yes, what are its objectives?		.033		.000 95% BCa CI (.997 – 1.00)	1

\*p < .05, \*\*p < .001.

Table 6.3: Normality and Mann-Whitney U tests for various communication predictors of participation (a), independent samples t-test (b) and significant regression model (c) within MCNP

A: Have you ever taken part in any of these forest projects at any level?		Group statistics			Test of Normality (Shapiro-Wilk's)			Test of homogeneity of variance		Mann-Whitney U Test
		N	Mean	S.D.	Stat.	df	Sig.	F	Sig.	
Level of education	No	169	2.31	.645	.803	169	.000	5.389	.021	U=93870. p=.001 r=.332
	Yes	90	2.79	.989	.755	90	.000			
Perception of 'we can'	No	169	5.38	1.658	.803	169	.000	21.36	.000	U=10532 p=.000 r=.088
	Yes	90	6.34	.938	.715	90	.000			
Frequency of information	No	169	2.74	.908	.859	169	.000	29.64	.000	U=10734 p=.000 r=.362
	Yes	90	3.46	.706	.824	90	.000			
B: Independence samples t-test		Levene's Test for Equality of Variances			t-test for equality of Means			95% BCa CI		
Equal variance not assumed		F	Sig.	T	df	Sig.	Lower	Upper		
1. Education		21.571	.000	-4.169	130.45	.000	-.730	-.223		
2. Perception of 'we can'		16.459	.000	-5.984	256.04	.000	-1.257	-.705		
3. Frequency of information		3.700	.050	-7.016	223.22	.000	-.909	-.518		
C: Significant model summary					Coefficient					
Model	R	R <sup>2</sup>	Adj. R <sup>2</sup>	ANOVA		B	β	t	Sig.	
Overall	.416	.173	.167	F	Sig.	Constant	.522		4.367	.000
						Perception	.060	.192	3.155	.002
						Info. freq.	.161	.306	5.021	.000

Table 6.4: Mann-Whitney and t-test showing relationships between participation and various predictors within MCNP clusters

Have you ever taken part in MCNP activities?		Mann-Whitney U Test			Levene's Test for Equality of Variances		t-test for equality of Means			BCa 95% confidence interval	
		U	Sig.	r	F	Sig.	T	df	Sig.	Lower	Upper
Bomboko	Frequency of information.	603	.002	.190	.559	.458	-3.117	64	.003	-.992	-.295
	Perception	503.5	.158	.088	.581	.449	-1.261	64	.212	-.653	.174
	Level of education	491.5	.203	.080	9.24	.003	-1.695	19.5	.106	-1.241	.087
Buea	Frequency of information.	679	.016	.150	2.45	.122	-2.801	66	.004	-1.104	-.288
	Perception	714.5	.005	.175	8.352	.005	-3.430	60.1	.001	-2.375	-.701
	Level of education	690.5	.009	.163	6.42	.014	-3.281	30.1	.008	-1.3.9	-.194
Muyuka	Frequency of information	409.5	.006	.172	2.454	.122	-2.801	66	.007	-1.043	-.241
	Perception	444.5	.001	.199	8.352	.005	-3.430	60.1	.001	-2.435	-.703
	Level of education	392	.028	.137	6.419	.014	-2.850	30.1	.008	-.941	-.179
West-Coast	Frequency of information	1010	.000	.222	1.362	.249	-3.037	47	.004	-1.319	-.490
	Perception	1041	.000	.246	13.13	.001	-3.726	37.4	.001	-1.061	-.364
	Level of education	758.5	.403	.052	1.333	.254	-2.534	14	.015	-.605	.042

*Table 6.5: Significant models summary presenting the relationships between participation and various communication predictors in all clusters.*

Model	R	R <sup>2</sup>	Adj. R <sup>2</sup>	ANOVA		Coefficients				
				F	Sig.		B	$\beta$	t	Sig.
Bomboko	.363	.132	.118	9.717	.003	Constant	.656		3.286	.002
						Frequency of education	.201	.363	3.117	.003
Buea	.339	.159	.133	6.159	.004	Constant	.716		3.871	.000
						Perception	.057	.252	2.026	.047
						Frequency of education	.109	.225	1.812	.075
Muyuka	.405	.164	.146	9.223	.004	Constant	.591		2.081	.043
						Frequency of education	.276	.405	3.037	.004
West-Coast	.433	.188	.165	8.435	.001	Constant	.661		2.993	.004
						Level of education	.067	.098	.917	.362
						Frequency of education	.189	.404	3.765	.000

*Table 6.6: Kruskal-Wallis test for frequency of information received as predictors for perception of local ability to protect forest, trends and pairwise follow-up comparison*

Local people have the ability to protect forest		Kruskal-Wallis test			Trends			Significant pairwise-comparison			
		H	df	Sig.	J	Sig.	r	Groups	T	Sig.	r
Different clusters		14.50	3	.002	11.905	.371	-.056	Buea - Bomboko	46.95	.001	.328
Frequency of information		37.33	4	.000	14775	.000	.354	Never -Quarterly	-70.34	.000	-.398
								Never - Monthly	-92.22	.000	-.542
								Never - Weekly	-150.7	.000	-.887
								Yearly - Monthly	-44.88	.014	-.342
								Yearly - Weekly	-130.4	.009	-.477
Freq. of info.	Bomboko	11.34	3	.010	860.5	.006	.340	Never -Quarterly	25.26	.034	-.432
								Never - Monthly	-32.38	.005	-.746
	Buea	11.00	4	.027	1024	.006	.331	None			
	Muyuka	10.04	4	.040	462.0	.002	.439	None			
	West-Coast	14.25	4	.007	1419.5	.000	.423	Never - Monthly	-25.89	.020	-.521

*Table 6.7: Significant models summary presenting the relationship between local ability to protect forest and frequency of information in all clusters.*

Model	R	R	Adj. R <sup>2</sup>	ANOVA		Coefficients	B	$\beta$	t	Sig.
				F	Sig.					
Overall	.363	.163	.128	38.963	.000	Constant	3.902		12.862	.000
						Frequency of information	.606	.363	6.242	.000
Bomboko	.425	.181	.168	14.131	.000	Constant	5.174		16.892	.000
						Frequency of information	.373	.425	3.759	.000
Buea	.402	.161	.149	12.689	.001	Constant	2.411		3.227	.002
						Frequency of information	.856	.402	3.562	.001
Muyuka	.485	.235	.219	14.478	.000	Constant	1.951		1.994	.050
						Frequency of information	1.191	.485	3.805	.000
West-Coast	.426	.182	.171	16.429	.000	Constant	4.992		18.952	.000
						Frequency of information	.337	.426	4.053	.000

*Table 7.1: Types of comments across different stakeholders on different decision-making related themes derived from the word clouds.*

<b>Level of stakeholders</b>	<b>Types of comments</b>	<b>A</b>	<b>B</b>	<b>Total (%)</b>
International - GIZ	Positive	-	-	-
	Mixed	1	-	1(100%)
	Negative	-	-	-
Sub-national - MINFOF-SWR	Positive	-	1	1(33%)
	Mixed	1	4	5(67%)
	Negative	-	-	-
Local communities	Positive	-	-	-
	Mixed	-	-	-
	Negative	-	5	5(100%)

Table 7.2: Normality test, Mann-Whitney and t-test relating participation and standing in MCNP clusters.

A: Have you ever taken part in any of these forest projects at any level?		Group statistics			Test of Normality (Shapiro-Wilk's)			Homogeneity of variance		Mann-Whitney U Test
		N	Mean	S.D.	Stat.	df	Sig.	F	Sig.	
No		169	4.26	1.283	.931	169	.000	5.6	.019	U=9145, Z=2.766, p=.006, r=.22
Yes		90	4.78	1.169	.927	90	.000			
Bomboko	No	49	3.76	1.234	.897	49	.000	2.33	.132	U=513, p=.136, r=.18
	Yes	17	4.24	1.091	.859	19	.015			
Buea	No	46	4.50	1.346	.940	46	.020	1.60	.111	U=733, p=.002, r=.37
	Yes	22	5.59	1.141	.891	22	.020			
Muyuka	No	28	4.46	1.201	.796	28	.000	1.54	.221	U=284, P=.823, r=-.03
	Yes	21	4.52	.873	.791	21	.000			
West-Coast	No	46	4.43	1.205	.901	46	.001	.948	.333	U=746, p=.539, r=.071
	Yes	30	4.67	1.155	.935	30	.066			
B: Independence samples t-test		Levene's Test for Equality of Variances		t-test for equality of Means			BCa 95% Confidence Interval			
Equal variance not assumed		F	Sig.	T	df	Sig.	Lower	Upper		
		3.037	.083	-3.278	196.9	.001	-.782	-.236		
Bomboko		.763	.386	-1.422	64	.161	-1.155	.194		
Buea		.500	.482	-3.278	66	.002	-1.755	-.426		
Muyuka		1.248	.270	-.192	47	.849	-.683	.564		
West-Coast		.562	.456	-.834	74	.407	-.786	.322		

Table 7.3: Model summary presenting the relationship between standing and participation in MCNP activities.

Model summary						
Model	R	R square	Adjusted R	ANOVA		
				F	Sig.	
Overall	.195	.038	.034	10.150	.002	
Bomboko	.175	.031	5	1.022	.160	
Buea	.374	.140	.127	10.742	.002	
Muyuka	.028	.001	-.020	.037	.849	
West-Coast	.096	.009	-.004	.695	.407	
Linear regression Coefficient						
Model		B	SE	$\beta$	t	Sig.
Overall	Constant	1.021	.106		9.600	.000
	Standing	.073	.023	.195	3.186	.002
Bomboko	Constant	1.01	.182		5.547	.000
	Standing	.064	.045	.175	1.422	.160
Buea	Constant	.701	.197		3.551	.001
	Standing	.128	.039	.374	3.278	.002
Muyuka	Constant	1.369	.316		4.330	.000
	Standing	.013	.069	.028	.192	.849
West-Coast	Constant	1.213	.225		5.390	.000
	Standing	.040	.048	.096	.834	.407

Table 7.4: Normality test, Kruskal-Wallis test, trends and effect sizes of standing at decision-making process within MCNP clusters.

Everyone's opinion/contribution counts	Group statistics			Test of Normality (Shapiro-Wilk's)			Homogeneity of Variance	
	N	Mean	SD	Statistic	df	Sig.	F	p
Bomboko	66	3.88	1.209	.900	66	.000	.788	.502
Buea	68	4.85	1.374	.936	68	.002		
Muyuka	49	4.49	1.063	.787	49	.000		
West-Coast	79	4.53	1.183	.929	76	.000		
Effect size from pairwise comparison				Non-parametric test				
	Adj. p	z	r		T	p	r	
Bomboko-West-Coast	.012	-3.09	-.257	<b>Kruskal-Wallis Test</b>	21.29	0.00	-	
Bomboko-Muyuka	.028	-2.83	-.264	<b>Trends-Jonckheere-Terpstra</b> Test for order alternatives	14008	.019	0.15	
Bomboko-Buea	.000	-4.49	-.388					
West-Coast-Muyuka	1.00	.076	.007					
West-Coast-Buea	.753	1.53	.126					
Muyuka-Buea	1.00	1.29	.119					

Table 7.5: Relationship between standing and influence in different cluster

		Group statistics				Test of Normality (Shapiro-Wilk's)			Homogeneity of variance	
		N	Mean	S.D.	Cor.	Stat.	df	Sig.	F	Sig.
Bomboko	Influence	66	2.33	.997	.043	.868	66	.000	.331	.803
	Standing	66	3.88	1.187						
Buea	Influence	68	3.28	1.314	.000	.938	68	.002		
	Standing	68	4.85	1.374						
Muyuka	Influence	49	3.22	1.159	.109	.893	49	.000		
	Standing	49	4.49	1.063						
West-Coast	Influence	76	3.07	1.237	.000	.911	76	.000		
	Standing	76	4.53	1.183						
Effect-size from pairwise comparison						Non-parametric Test				
		Adj. p	z	r			Statistics			
Bomboko-West-Coast		.001	-3.706	-.311	<b>Kruskal-Wallis Test</b>	H=25.810 df=3, p=.000				
Bomboko-Muyuka		.000	-4.064	-.379						
Bomboko-Buea		.000	-4.448	-.384	<b>Trends Jonckheere- Terpstra Test for orders alternative</b>	H=14630.5 df=3 p=.001 r=.24				
West-Coast-Muyuka		1.00	.779	.070						
West-Coast-Buea		1.00	.869	.072						
Muyuka-Buea		1.00	.012	.001						

Table 7.6: Linear regression model summary (a) and coefficient (b) indicating how standing contributes to influence.

<b>A) Model summary</b>						
<b>Model</b>	<b>R</b>	<b>R-square</b>	<b>Adj. R<sup>2</sup></b>	<b>ANOVA</b>		
				<b>F</b>	<b>Sig.</b>	
Overall	.432	.186	.183	58.91	.000	
Bomboko	.213	.045	.030	3.030	.087	
Buea	.453	.205	.193	17.03	.000	
Muyuka	.179	.032	.012	1.562	.218	
West-Coast	.541	.293	.283	30.65	.000	
<b>B) Linear regression Coefficient</b>						
<b>Model</b>		<b>B</b>	<b>SE</b>	<b>β</b>	<b>t</b>	<b>Sig.</b>
Overall	Constant	1.088	.254		4.278	.000
	Standing	.423	.055	.432	7.675	.000
Bomboko	Constant	1.653	.409		4.041	.000
	Standing	.175	.101	.213	1.741	.087
Buea	Constant	1.178	.529		2.227	.029
	Standing	.433	.105	.453	4.127	.000
Muyuka	Constant	2.346	.722		3.251	.002
	Standing	.196	.157	.179	1.250	.218
West-Coast	Constant	.505	.478		1.057	.294
	Standing	.566	.102	.541	5.536	.000

*Table 8.1: Types of comments across different stakeholders on different PES related themes derived from the word clouds.*

<b>Level of stakeholders</b>	<b>Types of comments</b>	<b>A</b>	<b>B</b>	<b>Total (%)</b>
International - GIZ	Positive	1		1(20%)
	Mixed	1	1	2(40%)
	Negative	2	-	2(40%)
National - MINFOF, MINEP, Planet Survey	Positive	-	-	-
	Mixed	1	-	1(100%)
	Negative	-	-	-
Sub-national - MINFOF-SWR	Positive	-	-	-
	Mixed	-	3	3(100%)
	Negative	-	-	-
Local groups - MOCAP	Positive	1	-	1(33%)
	Mixed	1	-	1(33%)
	Negative	1	-	1(33%)
Local communities	Positive	1	-	1(8%)
	Mixed	-	1	1(8%)
	Negative	7	4	11(85%)

*Table 8.3: Mann-Whitney U test showing how participation is influenced by perception of PES (a), expectation of local development (b) and income (c) with their corresponding effect sizes.*

<b>Mann-Whitney test</b>		<b>U</b>	<b>Z</b>	<b>p</b>	<b>N</b>	<b>Effect-size (r)</b>
A (PES)	Overall	10,165	4.758	.000	259	.296
	Bomboko	563	2.263	.024	66	.279
	Buea	698	2.768	.006	68	.336
	Muyuka	381	1.994	.046	49	.290
	West-Coast	890	2.245	.025	76	.258
B (Local development)	Overall	10,575.5	6.734	.000	245	.430
	Bomboko	727	5.259	.000	64	.657
	Buea	725	3.851	.000	64	.481
	Muyuka	447	3.332	.001	49	.476
	West-Coast	895	3.851	.000	70	.460
C (Income generation)	Overall	9,742	5.129	.000	245	.328
	Bomboko	590	3.094	.002	64	.387
	Buea	680.5	3.148	.002	64	.394
	Muyuka	434	2.916	.004	49	.417
	West-Coast	867	3.554	.000	70	.425

Table 8.4: Significant linear regression models showing how participation is influenced by perception of PES, expectation of local development and income generation with corresponding coefficients.

Significant linear regression model summary						Coefficient				
	R	R <sup>2</sup>	Adj. R <sup>2</sup>	ANOVA			B	β	t	Sig.
				F	Sig.					
Overall	.435	.189	.182	28.398	.000	Constant	.615		5.90	.000
						Local development	.117	.353	4.900	.000
						Income generation	.038	.118	1.638	.103
Bomboko	.368	.135	.121	9.712	.003	Constant	.611		2.825	.006
						Income generation	.132	.368	3.116	.003
Buea	.537	.288	.265	12.341	.000	Constant	.668		4.576	.000
						Local development	.128	.434	3.501	.001
						Income generation	.045	.169	1.361	.178
Muyuka	.456	.208	.191	12.307	.001	Constant	.766		3.839	.000
						Income generation	.171	.456	3.508	.001
Muyuka	.481	.232	.215	14.175	.000	Constant	.683		3.285	.002
						Local development	.171	.481	3.765	.000
West-Coast	.268	.072	.059	5.716	.019	Constant	.645		2.025	.046
						PES	.125	.268	2.391	.019

*Table 9.2: Types of comments across different stakeholders on different co-management related themes derived from the word clouds.*

<b>Level of stakeholders</b>	<b>Types of comments</b>	<b>A</b>	<b>B</b>	<b>Total</b>
International - GIZ	Positive	-	-	-
	Mixed	1	-	1(50%)
	Negative	-	1	1(50%)
National - MINFOF, MINEP, Planet Survey	Positive	-	-	-
	Mixed	-	1	1(100%)
	Negative	-	-	-
Sub-national - MINFOF-SWR	Positive	-	2	2(33%)
	Mixed	-	3	3(50%)
	Negative	-	1	1(17%)
Local groups - MOCAP	Positive	-	2	2(100%)
	Mixed	-	-	-
	Negative	-	-	-
Local communities	Positive	-	1	1(17%)
	Mixed	3	-	3(50%)
	Negative	2	-	2(33%)

*Table 9.3: T-test and Mann-Whitney test showing relationship between participation and perception that strict conservation zone enhances conservation initiatives.*

Clusters	Levene's Test for Equality of Variances		t-test for equality of Means			BCa 95% Confidence Interval		Mann-Whitney U Test		
	F	Sig.	t	df	Sig.	Lower	Upper	U	p	r
Overall	4.18	.042	-3.35	257	.001	-.720	-.187	9,333	.002	.200
Bomboko	.001	.979	-1.27	28.466	.210	-1.047	.241	503.5	.183	.166
Buea	2.97	.089	-1.05	54.589	.299	-.702	.219	555	.500	.084
Muyuka	2.06	.158	-2.79	39.835	.008	-1.498	-.240	410.5	.015	.348
West-Coast	2.63	.109	-2.95	68.646	.004	-.998	-.193	922	.009	.300

*Table 9.4: T-test and Mann-Whitney test relating participation and perception of promoting local participation*

Clusters	Levene's Test for Equality of Variances		t-test for equality of Means			BCa 95% Confidence Interval		Mann-Whitney U Test		
	F	Sig.	t	df	Sig.	Lower	Upper	U	p	r
Overall	2.900	.090	-6.561	230.9	.000	-1.050	-.565	9,778	.000	.339
Bomboko	2.160	.147	-3.298	23.51	.003	-1.124	-.258	582.5	.002	.389
Buea	5.155	.027	-3.444	62	.001	-1.670	-.512	655.5	.004	.346
Muyuka	5.886	.019	-4.210	47	.000	-1.882	-.665	463.0	.000	.524
West-Coast	.654	.421	-3.100	65.27	.003	-.712	-.154	812.5	.004	.331

### 3. Focus group discussion guidelines

#### Project schedule

Time spent in each village is 4 days given a total of 48 days for 12 park village surveys.

Task	Date(s)	Status OK? If not, give comments
Meeting with chiefs and councillors		
Village/focus group meetings		
Village survey		
Checking questionnaire		
Coding questionnaire		
Entering data		
Checking & approving data entry		

#### Section A. Demographics

1. In what year was the village established?	
2. What is the current population of the village?	
3. How many households live currently in this village?	
4. What was the total population of the village 10 years ago?	
5. How many households lived in the village 10 years ago?	
6. How many persons (approx.) living here now have moved to the village in the past 10 years (in-migration)?	
7. How many persons (approx.) have left the village over the past 10 years (out-migration)?	
8. How many different groups (ethnic groups or tribes) are living in the village?	

**Section B. Infrastructure**

1. How many households (approx.) in the village have access to electricity (from public or private suppliers)?				
2. How many households (approx.) in the village have access to (use) piped tap water?				
3. How many households (approx.) have access to formal credit (government or private bank operating in the village)?				
4. Are <i>informal</i> credits institutions such as savings clubs and money lenders present in the village?				
5. Is there any health centre in the village?				
6. Does the village have at least one road useable by cars during all seasons? <i>If 'yes', go to 8.</i>				
7. <b>If 'no'</b> : what is the distance in km to the nearest road usable during all seasons?				
8. Is there a river within the village boundaries that is navigable during all seasons?				
9. What is the distance to the MCNP boundary				
9a. What is the impact to the park area? ( <i>1=high, 2=medium, 3=low</i> )				
10. What is the distance from the village centre to the nearest...(in <i>km</i> and in <i>minutes</i> by <i>most common means of transport</i> )		<b>km</b>	<b>min</b>	<b>transport</b>
	1. District market			
	2. Market for major consumption goods			
	3. Market where agricultural products are sold			
	4. Market where forest products are sold			

**Section C. *Forest and land cover/use***

1. Land categories in the village

*Note: The purpose is to link forest types to ownership status*

<b>1. Land category</b> <i>(code-land)</i>	Ownership			
	<b>3. State</b>	<b>4. Community</b>	<b>5. Private</b>	<b>6. Open access</b>
<b><i>Forest:</i></b>				
<b>1.</b> Reserved forest				
<b>2.</b> Managed forests				
<b>3.</b> Plantations				
<b><i>Agricultural land:</i></b>				
<b>4.</b> Cropland				
<b>5.</b> Pasture				
<b>6.</b> Agroforestry				
<b>7.</b> Silvi-pasture				
<b>8.</b> Fallow				
<b><i>Other land categories:</i></b>				
<b>9.</b> Shrubs				
<b>10.</b> Grassland				
<b>11.</b> Residential areas, infrastructure				
<b>12.</b> Wetland				
<b>13.</b> Other (specify)				

**C2.** What are the 3 main livelihoods, food crops, cash crops and non-timber forest products in the village?

Main livelihoods (max 3)	Food crops (max 3)	Cash crops (max. 3)	Non-timber forest products (max 3)

**Section D:** *Village forest management practices*

**D1:** Does the village practice any form of active and deliberate management?.....

<b>D2: If yes, type of management?</b>	<b>Code</b>
1. Planting of trees	
2. Cutting down undesired (competing) trees	
3. Protecting certain desired (patches of) trees in the forest to promote the natural regeneration of these species	
4. Protecting areas of forest for particular environmental services, like water catchment	
5. Establishing clear use rights for a limited number of people to particular forest products (e.g. honey trees)	
6. Extension/education about forest management	
7. Enacted bylaw (e.g. no bush burning in or near forest)	
8. Mapping/inventory forest resources	
9. Other (specify)	

*1) Codes: 0=no, not at all; 1=yes, but only to a limited extent; 2=yes, they are common.*

**D2:** If No, why?

.....

.....

.....

**Section E. Forest resource base**

*Note: The questions will be asked for each of the categories in turn (i.e. column by column)*

		<b>1. Firewood or charcoal</b>	<b>2. Timber or other wood</b>	<b>3. Food from the forest</b>	<b>4. Medicine from the forest</b>	<b>5. Forage from the forest</b>	<b>6. Others<sup>(1)</sup></b>
1. What is the most important product (MIP) for the livelihood of the people in the village in this category ( <sup>2</sup> )? ( <i>name</i> )							
2. (code-products)							
3. How has availability of the MIP changed over the past 5 years? Codes: 1=declined; 2=about the same; 3=increased							
4. If the availability of the MIPs in this category has <b>declined</b> , what are the reasons?	<b>Reasons</b>		<b>Rank 1-3</b>	<b>Rank 1-3</b>	<b>Rank 1-3</b>	<b>Rank 1-3</b>	<b>Rank 1-3</b>
	1. Reduced forest area due to small-scale clearing for agriculture						
	2. Reduced forest area due to large-scale projects (plantations, new settlements, etc.)						
	3. Reduced forest area due to people from outside buying land and restricting access						

<p><i>Please rank the most important reason, max. 3 (leave rest blank).</i></p>	4. Increased use of MIP due to more local village people collecting more						
	5. Increased use of MIP due to more people from other villages collecting more						
	6. Restrictions on use by central or state government (e.g., for forest conservation)						
	8. Climatic changes, e.g. drought and less rainfall						
	9. Other (specify)						
	10. Timber harvesting						
	11. Charcoal burning						
	12. Brick burning						
	13. Poor harvesting practices						
	14. Product attacked/consumed by forest dwelling vermin						
	15. Bush burning						

	16. Increased marketing potential for product						
5. If the availability of the MIP in this category has <b>increased</b> , what are the reasons? <i>Please rank the most important reasons, max. 3.</i>	<b>Reasons</b>	<b>Rank 1-3</b>					
	1. Less clearing of forests for agriculture						
	2. Fewer local (village) people collecting less						
	3. Fewer people from other villages collecting less						
	4. Reduced use from large-scale commercial users/projects						
	5. Changes in management of forests						
	6. Climatic changes, e.g. more rainfall						
	7. Forest clearing that increases supply of product e.g. fire-wood						
	8. Tree planting						
	9. Other (specify)						
	10. More illegal access of protected area						
11. Improved access rights to product							

	12. More secondary forest (as people clear land and forest regenerates)						
6. What would be most important to increase the benefits (use or income) from the MIP? <i>Please rank the most important reasons, max. 3.</i>	<b>Action</b>	<b>Rank 1-3</b>					
	1. Better access to the forest/MIP, i.e., more use rights to village						
	2. Better protection of forest/MIP (avoid overuse)						
	3. Better skills and knowledge on how to collect/use it						
	4. Better access to credit/capital and equipment/technology						
	5. Better access to markets and reduced price risk						
	6. Invest in planting trees/forest product						
	7. Develop forest user groups/collective action in harvesting						
	8. Control fire						
9. Other (specify)							

1) Select the most important product for the village that do not fall into any of the other five categories.

2) "Most important" is defined as the most important for the wellbeing of the village, whether it be through direct use in the home and/or through sale for cash

**Section F. Forest institutions, policies and strategies**

*Note: The MIP in each category will be identical to those in the table above.*

	<b>1. Firewood or charcoal</b>	<b>2. Timber or other wood</b>	<b>3. Food from the forest</b>	<b>4. Medicine from the forest</b>	<b>5. Forage from the forest</b>	<b>6. Others (<sup>1</sup>)</b>
1. What is the most important product (MIP) for the livelihood of the people in the village (in this category)?						
2. <i>(code-product)</i>						
3. In what type of forest do you get the MIP? <i>(code-forest)</i>						
4. What is the ownership status of this forest <i>(code-tenure)</i>						
5. Are there customary rules regulating the use of the MIP in the village? <i>Codes: 0=none/very few; 1=yes, but vague/unclear; 2=yes, clear rules exist If code '0', go to 7.</i>						
6. <b>If 'yes'</b> : are the <i>customary</i> rules regarding forest use enforced or respected by the population of the village?						
7. Are there <i>government</i> rules that regulate forest use? <i>Codes: 0=none/very few; 1=yes, but vague/unclear; 2=yes, clear rules</i>						

<p><i>exist If code '0', go to 9.</i></p>						
<p>8. If 'yes' (code '1' or '2' above): are the government rules enforced/respected by the members in the village?</p>						
<p>9. Do the villagers require any permission to harvest the MIP?  <i>Codes: 0=no; 1=yes, users have to inform the authorities; 2=yes, written permission needed If code '0', go to next section.</i></p>						
<p>10. If 'yes' (code '1' or '2' above): does the user have to pay for the permission? (1-0)</p>						
<p>11. If 'yes': who issues this permit?  <i>Codes: 1=village head; 2=FUG; 3=forest officer (forest departments); 4=other government official; 9=other (specify)</i></p>						

**Section G. Forest User Groups (FUG) and their involvement in forest projects**

1. How many forest user groups (FUG) are there in the village? .....
2. Information about each FUG (use one column per FUG).

	FUG1	FUG2	FUG3
1. When was the group formed? (year)			
2. How was the group formed? <i>Codes: 1=local initiative; 2=initiative from NGO; 3=initiative from government, e.g., Forest Department; 4=other (specify)</i>			
3. Is the FUG's main purpose related to the management of a particular forest area or of particular forest product(s)? <i>Codes: 1=area; 2=product(s); 3=both</i>			
4. If for a product (code 2 or 3 above), what is the (main) product? ( <i>code-product</i> )			
5. How many members are there in the group?			
6. How many times per year does the FUG have meetings?			
7. Does the group have a written management plan?			
8. What are the main tasks of the FUG? <i>Select as many as appropriate: 1-0 code</i>	1. Setting rules for use		
	2. Monitoring and policing		
	3. Silviculture & management		
	4. Harvesting forest products		
	5. Selling forest products		
	6. Tree planting		
	7. Tourism (i.e. maintaining tourist infrastructure; guiding tourists etc.)		
	8. Education/extension support		
	9. Other (specify)		

	10. Savings and credit			
9.	Has any development project been implemented in the village over the past 5 years using proceeds from the FUG?			
10.	Has anyone in the village been violating the rules of the FUG over the past 12 months? <i>If 'no', go to 14</i>			
11.	<b>If 'yes'</b> : did the FUG impose any penalties on those violating the rules? <i>If 'no', go to 14</i>			
12.	<b>If 'yes'</b> : what type of penalties? <i>Codes: 1=fee (cash payment); 2=returning collected products; 3=labour (extra work); 4=exclusion from group; 5=warning; 9=other (specify)</i>			
13.	Which group of forest users have most commonly violated the rules over the past 5 years? <i>Codes: 1=members of FUG; 2=non-FUG members in the village; 3=people from other villages; 9=other (specify)</i>			
14.	Overall, on a scale from 1-5 (1 being highest, 5 being lowest) how effective would you say that the FUG is in ensuring sustainable and equitable forest use?			

*Note: Any FUGs in the village will be further discussed in the village narrative.*

**Section H: Communication process and local contribution at decision-making process**

*(open-ended questions to assess level of interaction during discussion)*

H1. How does forest or conservation information circulate within this village?

H2: What types of information are given out?

H3: Who gives out the information?

H4: Where does this take place?

H5: Do you contribute in discussion or sharing your own views?

H5: If **yes**, give examples?

H5b: If **no**, why?

H6: What happen at cluster platform during the decision-making session?

H7: What is your own contribution/idea/view to this conservation initiative?

***Thank you for participating***

## 4. Questionnaire for park villages

### Local communities, forest users, NGOs, forest users group

Forest is an economic resource and provides environmental services to planet earth. Human survival and wellbeing depend on the forest reserves because it provides oxygen, food, shelter, recreation, raw materials and spiritual sustenance. Africans depends mostly on natural resources from forest and non-forest ecosystems. With the upcoming global climate change negotiations, more value has been put on forest ecosystems which have proven to be relevant to mitigation and adaptation in terms of carbon stock and sequestration potentials. So we are faced with major challenges to preserve ecosystems while pursuing socio-economic development by avoiding deforestation and land degradation. Thus, a balance between production and conservation need to be found. REDD+ is considered as one of the mitigation strategies as well as an adaptation strategy for climate change and is geared towards sustainable development of local communities.

This questionnaire is being undertaken to collect data as a part of PhD degree at the University of York, for a study titled '*Assessing Community Involvement in the Design, Implementation and Monitoring of REDD+: a case study of Mount Cameroon National Park*' conducted by Nvenakeng Suzanne Awung - a PhD student of the Department of Environment, University of York. The information is for academic and learning purposes only. All information provided will be treated in strict confidence and used ONLY for the purpose intended. Your names will not be used against you, but to cross-check in case of missing data. This survey will help in establishing a benchmark for current capacity and area of improvement through critical analyses of current situation to enhance local community participation in REDD+ design, implementation and monitoring strategies. Key findings will be provided back to the community.

You are kindly requested to answer the questions below as honestly as possible. Your responses are very important, and I encourage you to respond as best as possible.

- Please answer all questions
- Please cross, circle, tick or write clearly with a blue or black pen (☒ ① ☒)
- No pencil please
- Write in CAPITAL LETTERS where appropriate.

Thank you for your co-operation

## Questionnaire

Enumerator code.....  
 Name of Respondent .....  
 Address: ..... Town/Village: .....  
 Division: ..... Region: .....  
 Date: ..... Phone number.....  
 Questionnaire No: .....

**Instruction:** Please tick, cross, circle or **write** where appropriate  
 Numbers highlighted are code, for example **1**

### *Section A. Demography and socio-economic characteristic of respondents*

- |  |   |   |  |   |  |
|--|---|---|--|---|--|
| <b>1.Head of family</b>                | <b>1</b> <input type="checkbox"/> No                  | <b>2</b> <input type="checkbox"/> Yes                 |  |   |  |
| <b>2.Sex</b>                           | <b>1</b> <input type="checkbox"/> Male                | <b>2</b> <input type="checkbox"/> Female              |  |   |  |
| <b>3.Age</b>                           | <b>1</b> <input type="checkbox"/> 20-40               | <b>2</b> <input type="checkbox"/> 41-60               | <b>3</b> <input type="checkbox"/> >60                          |   |  |
| <b>4. Marital status</b>               | <b>1</b> <input type="checkbox"/> Single              | <b>2</b> <input type="checkbox"/> Married             | <b>3</b> <input type="checkbox"/> Divorced                     | <b>4</b> <input type="checkbox"/> Widow(er)           |  |
| <b>5. Year of schooling</b>            | <b>1</b> <input type="checkbox"/> 0                   | <b>2</b> <input type="checkbox"/> 1-5                 | <b>3</b> <input type="checkbox"/> 6-10                         | <b>4</b> <input type="checkbox"/> 11 -15              | <b>5</b> <input type="checkbox"/> >15          |
| <b>6. Level of education</b>           | <b>1</b> <input type="checkbox"/> No formal education | <b>2</b> <input type="checkbox"/> Primary school      | <b>3</b> <input type="checkbox"/> Secondary school             | <b>4</b> <input type="checkbox"/> High school         | <b>5</b> <input type="checkbox"/> >High school |
| <b>7. Landholding (Ha)</b>             | <b>1</b> <input type="checkbox"/> 0                   | <b>2</b> <input type="checkbox"/> 1-2                 | <b>3</b> <input type="checkbox"/> 3-4                          | <b>4</b> <input type="checkbox"/> 5-6                 | <b>5</b> <input type="checkbox"/> >6           |
| <b>8. Annual cash income (frs CFA)</b> | <b>1</b> <input type="checkbox"/> <250,000frs         | <b>2</b> <input type="checkbox"/> 250,000-500,000frs  | <b>3</b> <input type="checkbox"/> 501,000-750,000frs           | <b>4</b> <input type="checkbox"/> 751,000-1000,000frs | <b>5</b> <input type="checkbox"/> >1000,000frs |
| <b>9. Sources of income</b>            | <b>1</b> <input type="checkbox"/> NTFP                | <b>2</b> <input type="checkbox"/> Cash crops          | <b>3</b> <input type="checkbox"/> Medicinal plant              | <b>4</b> <input type="checkbox"/> Animal husbandry    | <b>5</b> <input type="checkbox"/> Fishing      |
|  | <b>6</b> <input type="checkbox"/> Hunting             | <b>7</b> <input type="checkbox"/> Plantation labourer | <b>8</b> <input type="checkbox"/> Civil servant                | <b>9</b> <input type="checkbox"/> Business            | <b>10</b> <input type="checkbox"/> Timber      |
| <b>10. Household size</b>              | <b>1</b> <input type="checkbox"/> 1-2                 | <b>2</b> <input type="checkbox"/> 3-4                 | <b>3</b> <input type="checkbox"/> 5-6                          | <b>4</b> <input type="checkbox"/> 6-8                 | <b>5</b> <input type="checkbox"/> >8           |
| <b>11. Member of</b>                   | <b>1</b> <input type="checkbox"/> The community       | <b>2</b> <input type="checkbox"/> Local NGO           | <b>3</b> <input type="checkbox"/> Forest User Group e.g. MOCAP |   |  |

**Section B. *Land tenure and crops harvested within Mount Cameroon National Park villages***

**B1.** Please name the type of crops harvested in this community (code only)?

1vegetables, 2cocoyams, 3maize, 4fruits, 5plantains, 6banana, 7coffee, 8cocoa, 9palms, 10rubber, 11cassava, 12yams, 13groundnuts, 14potatoes 15egusi, 16njansanga, 17casu, 18eru, 19bush mango, 20kola 21 beans 22 sugar cane 23bush pepper 24 honey, 25 tea

Food crops	
Cash crops	
Non-timber forest products	

**B2.** Please tick where necessary (one or more answers are allowed)

	1Chief	2Local community	3NGO (Specify)	4Gov't	5Others (specify)	99 I don't know
a. Who owns the forest?						
b. Who controls the forest?						
c. Who decides forest policies?						
d. Who bear the cost of forest projects?						
e. To who is the benefit paid?						

**Section C: *Forest governance, regulation and law enforcement***

**C2a.** Has anyone been caught violating the Memorandum of Understanding (MoU) agreed between the park villages and park services? 1  No 2  Yes

**C2b.** If **YES**, was there any penalty levy on the culprit? 1  No 2  Yes

**C2c.** If **YES**, what was the nature of the penalty?

1  Fee (cash) 2  Return of product 3  Extra work/labour 4  Warning 5  Other

**C2a.** Was this executed or enforced? 1  NO 2  YES

**C3b.** If **NO**, why? .....

.....

.....





<b>D5. Perception towards forest conservation</b>	Strongly disagree>>>>>>Strongly agree						
	1	2	3	4	5	6	7
a. Forest cover has declined over the past 5 years							
b. Livelihoods are affected by forest decline							
c. The local people have the ability to protect the forest							
d. Sustainable forest management must be implemented to sustain forest							
e. Payment for ecosystem services is necessary to sustain the forest							
f. Implementation of the strict conservation zone is require for efficiency of the conservation							
g. The forest management system solved the conflict over forest							
h. Establishing the MCNP REDD+ project is necessary to sustain the forest in your area							

**D6.** How often do you get information about forest conservation?

1  Never    2  Yearly    3  Quarterly    4  Monthly    5  At least weekly

**D7.** Which media are used to communicate this information?

1  Tribal meeting    2  Radio    3  Focus group    4  Project workshop  
5  Newspaper    6  TV    7  Public hearing    8  Others.....

**D8.** Which of these methods do you prefer the most.....

**D9.** Would you like to get more information about forest projects? 1  NO    2  YES

**D10a.** Have you ever heard of REDD+?    1  NO    2  YES

**D10b.** If YES, what are its objectives? .....  
.....  
.....  
.....

**D10c.** If YES or NO, answer section G



**Section F: *Benefit-sharing and local expectations from Mount Cameroon National Park***

**F1:** How is the revenue from forestry projects distributed? .....

.....

**F2:** What is the nature of the benefit?

1  Cash      2  Material      3  Individual      4  Community      5  Others      99  I don't  
 distribution      benefit      employment      projects      (specify)      know

**F3.** Has any developmental project been carried out in this village within the last 5 years with revenue from the forest? 1  NO      2  YES

**F3a.** If YES, Which project is/was that? .....

**F3b.** How much was given for the projects? .....

**F3c.** If NO, why? .....

.....

**F4.** How can we ensure equitably distribution of forest revenue? .....

.....

**F5.** What type of development do you expect MCNP project to bring to this community? Rang them according to importance, 1 being most important and 14 being least important.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Community hall														
2 Piped water														
3 Schools														
4 Electricity														
5 Roads														
6 Market														
7 Hospital														
8 Finance for small business														
9 Cocoa oven														
10 Training on animal husbandry														
11 Employment														
12 Chief palace														
13 Village library														
14 Others (specify)														

**Section G. Local support and actual role/responsibility within MCNP REDD+ projects**

**G.** Do you support the MCNP conservation project?    **1**  NO                      **2**  YES

Respond using a scale from 1 to 7 (1 being strongly disagree and 7 being strongly agree).

<b>G1. If YES, what are your reasons for supporting the conservation project?</b>							
	Strongly disagree>>>>>>>>>Strongly agree						
a. Solution for land ownership conflict	1	2	3	4	5	6	7
b. Promotion of local development	1	2	3	4	5	6	7
c. Generation of income	1	2	3	4	5	6	7
d. Promotion of local participation	1	2	3	4	5	6	7
e. Improvement of the natural environment	1	2	3	4	5	6	7
f. Enhance community land rights	1	2	3	4	5	6	7
g. Enhance carbon stock (more trees)	1	2	3	4	5	6	7
h. Others (specify)	1	2	3	4	5	6	7
<b>G2. If NO, what are your reasons for not supporting the conservation projects</b>							
a. No benefit for me and my family	1	2	3	4	5	6	7
b. Loss of right over forest	1	2	3	4	5	6	7
c. Generate interest conflict	1	2	3	4	5	6	7
d. Exclusion of local people	1	2	3	4	5	6	7
e. Lack of awareness	1	2	3	4	5	6	7
f. Spying on each other causes conflict amongst us	1	2	3	4	5	6	7
g. Others (specify)	1	2	3	4	5	6	7

**G3.** Please respond if you have heard or never heard of REDD+.

<b>G3a:</b> Which of these forest projects have you heard of?	<b>G3b.</b> What are the objectives of these projects?
1 <input type="checkbox"/> Conservation of MCNP	
2 <input type="checkbox"/> Sustainable management of forest resources - <i>Pygeum</i>	
3 <input type="checkbox"/> Enhancement of carbon stock	
4 <input type="checkbox"/> Afforestation, reforestation, tree planting	

**G4.** Which of these forestry project(s) is/are taking place in this community?  
 .....

**G5.** Have you ever taken part in any of these forestry projects at any level? 1  NO 2  YES

**G6a.** If YES, when was that? .....

**G6b.** Which project is/was that? Name of the project(s)?  
 .....

**G6c.** What is/was your function/role played?

- |  |  |  |   |
|--|--|--|---|
| 1 <input type="checkbox"/> Boundary demarcation            | 2 <input type="checkbox"/> Assessment of emission source | 3 <input type="checkbox"/> Compilation of existing data                | 4 <input type="checkbox"/> Carbon stratification,                   |
| 5 <input type="checkbox"/> Tree measurement                | 6 <input type="checkbox"/> Data entry                    | 7 <input type="checkbox"/> Sampling design                             | 8 <input type="checkbox"/> Data collection                          |
| 9 <input type="checkbox"/> Species identification/counting | 10 <input type="checkbox"/> Set rules and regulations    | 11 <input type="checkbox"/> Training on verification technique (field) | 12 <input type="checkbox"/> Sustainable harvesting of <i>Pygeum</i> |
| 13 <input type="checkbox"/> Tree planting                  | 14 <input type="checkbox"/> FM Trainer                   | 15 <input type="checkbox"/> Forest guard                               | 16 <input type="checkbox"/> Monitoring/policing                     |
| 17 <input type="checkbox"/> Wild life conservator          | 18 <input type="checkbox"/> Tourist guide                | 19 <input type="checkbox"/> Member of committee                        | 20 <input type="checkbox"/> Other                                   |

**G7.** If NO, why?  
 .....  
 .....

**G8.** What do you think can be done to improve your participation in forestry projects?

- |                                       |   |   |                                       |
|---------------------------------------|---|---|---------------------------------------|
| 1 <input type="checkbox"/> invitation | 2 <input type="checkbox"/> more sensitisation | 3 <input type="checkbox"/> chief directives | 4 <input type="checkbox"/> incentives |
| 5 <input type="checkbox"/> employment | 6 <input type="checkbox"/> education          | 7 <input type="checkbox"/> involve women    | 8 <input type="checkbox"/> other...   |

**G9.** Please provide an estimate of the number of community members trained to take part in MCNP-REDD+ conservation project .....

**G10.** What information do community members collect as part of their involvement with the project? Please select all options which are applicable.

1 Biodiversity	2 Fishery	3 NTFP	4 Timber	5 Carbon
6 Hunting	7 Fire	8 Game/bush-meat	9 Culture	10 Education
11 Gender	12 Health	13 Land-use change	14 Illegal activities	15 Livelihoods
16 Wellbeing	17 Volume of timber harvested	18 Quantity of firewood	19 Amount of fertiliser applied	20 Number of animal grazing

**G11.** In recording and collating these data, do your community participants make use of mobile electronic devices?

- 1  Yes      2  Not currently, but we are exploring this option      3  We have no plans to explore this technology

**G11a.** If YES, which electronic devices are/were used? .....

**G11b.** If NO, why? .....

**G12.** What other tools are/were used to carry out these forest project activities?  
.....

**G13.** To what extent are you satisfied with the following: Using a scale from 1 to 7 (1 being not satisfied and 7 being very satisfied)

Statements	Not satisfied >>>>> Very satisfied						
	1	2	3	4	5	6	7
a. Forest user's right provided to your community	1	2	3	4	5	6	7
b. Functioning of MCNP-REDD+ initiative leaders	1	2	3	4	5	6	7
c. Involvement of the local people in the decision-making process within the MCNP-REDD+ projects	1	2	3	4	5	6	7
d. Participation of the local people within MCNP-REDD+ projects development and implementation	1	2	3	4	5	6	7
e. Developing project design within the MCNP-REDD+ plan to improve your well-being	1	2	3	4	5	6	7
f. Capacity building provided by MCNP project	1	2	3	4	5	6	7
g. Community development	1	2	3	4	5	6	7
h. Empowerment	1	2	3	4	5	6	7

**Thank you very much for responding to this questionnaire**

## Acronyms

ANAFOR	Agence Nationale d'Appui au Développement Forestier
ASB	Alternative Slash and Burn
AWG-LCA	Ad Hoc Working Group on Long-term Cooperative Action
CB	Conservation Bonuses
CBD	Convention on Biological Diversity
CBFF	Congo Basin Forest Fund
CBNRM	Community Based National Resource Management
CC	Conservation Credits
CCZ	Cluster Conservation Zone
CDA	Conservation Development Agreement
CDC	Cameroon Development Cooperation
CDM	Clean Development Mechanism
CFM	Community Forest Management
CGIAR	Consultative Group for International Agricultural Research
CIFOR	Centre for International Forestry Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMA	Collaborative Management Activities
COMIFAC	Central African Forest Commission
COP	Conference of Parties
DFID	Department For International Development
DNA	Designated National Authority
FCPF	Forest Carbon Partnership Facility
FEICOM	Special Fund for Mutual Assistance to Councils
FLEGT	Forest Law Enforcement, Governance and Trade
FPIC	Free, Prior and Informed Consent
GEF	Global Environmental Facility
GFW	Global Forest Watch
GHG	Greenhouse Gases

GIS	Geographical Information Systems
GIZ	German International Cooperation
ICDP	Integrated Conservation and Development Project
ICRAF	World Agroforestry Centre
IISD	International Institute for Sustainable Development
IPCC	Inter-governmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
KFW	German Development Bank
LC	Local Communities
LULUCF	Land Use, Land Use Change and Forestry
MCNP	Mount Cameroon National Park
MINEPDED	Ministry of Environment, Nature Protection and Sustainable Development
MINFOF	Ministry of Forestry and Fauna
MIPs	Most Important Products
MOCAP-CIG	Mount Cameroon <i>Prunus</i> Common Initiative Group
NGO	Non-Governmental Organisation
NTFP	Non Timber Forest Products
ONACC	National Observatory on Climate Change
PES	Payments for Ecosystem Services
REDD+	Reducing Emission from Deforestation and land Degradation, conservation, reforestation and enhancement of carbon stock
R-PIN	Readiness Plan Ideal Note
R-PP	Readiness Preparatory Plan
SBSTA	Subsidiary Body for Scientific and Technological Advice
SFM	Sustainable Forest Management
SWR	South West Region
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nation Environment Programme
UNFCCC	United Nation Framework Convention on Climate Change
VFMC	Village Forest Management Committees

VPA	Voluntary Partnership Agreement
WCS	Wildlife Conservation Society
WWF	World Wide Fund for nature