COMMUNITIES' ROLE IN SUSTAINABLE FOREST MANAGEMENT IN CAMEROON: MANAGERS OR PARTICIPANTS?

by

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Declaration of Originality

I, Njandome Irene Monsi, wish to declare without any doubt or contradiction, that this thesis is a true discourse of my own original investigations and any other information used in the study have been cited appropriately. I hereby submit this thesis to the Graduate School of Asia Pacific Studies, Ritsumeikan Asia Pacific University, Japan in partial fulfillment of the requirements for the acquisition of the Degree of Masters of Science in International Cooperation Policy; specializing in Environmental Policy and Administration.

Dedication

This work is dedicated to my beloved son, Axelle K. Bengyela and daughter, Nivea B. Bengyela. I missed seeing you grow up during all these years of my study.

Thank you for your patience. May God Almighty continue to guide and protect you.

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BBCF	Bimbia-Bonadikombo Community Forest
BBNRMC	Bimbia-Bonadikombo Natural Resource Management Council
CAMPFIRE	Communal Areas Management Program for Indigenous Resources
CANARI	Caribbean Natural Resources Institute
CBFM	Community-based forest management
CBRM	Community-based resource management
CDC	Cameroon Development Corporation
CF	Community Forestry
CFCs	Chlorofluorocarbons
CFDP	Community Forestry Development Project
CFM	Community Forest Management
CFME	Community forest management entity
CFU	Community Forestry Unit
CH4	Methane
CIA	Central Intelligence Agency
CICES	Common International Classification of Ecosystem Goods and Services
CIFOR	Center for International Forestry Research
CIG	Common initiative group
CO	Community Organization
CO2	Carbon dioxide

DENR	Department of Environment and Natural Resources
EIG	Economic interest group
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agricultural Organization
FCFA	Franc Communauté FinancièreAfricaine
FMA	Final Management Agreement
FRA	Forest Resources Assessment
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GHGs	Green House Gases
GOs	Governmental Organizations
HCV	High Conservation Value
ICRAF	International Centre for Research in Agro-forestry
IPCC	Intergovernmental Panel on Climate Change
ITTO	International Tropical Timber Organization
JFM	Joint Forest Management
MCP	Mount Cameroon Project
MCPFE	Ministerial Conference on Protection of Forests in Europe
MDGs	Millennium Development Goals
MINAT	Ministry of Territorial Administration
MINEF	Ministry of Environment and Forests
MINFOF	Ministry of Forest and Fauna

MoP	Manual of Procedures
N2O	Nitrous oxide
NGOs	Non-Governmental Organizations
NPFE	Non Permanent Forest Estate
NRM	Natural Resource Management
NTFP	Non Timber Forest Products
OFAC	Office of Foreign Assets Control
PFE	Permanent Forest Estate
Pos	People's Organizations
RDI	Research Development and Innovation
RECOFTC	Center for People and Forests
SD	Sustainable Development
SFM	Sustainable Forest Management
SLIMFs	Small or Low Intensity Managed Forests
SMP	Simple Management Plan
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Conference on Climate Change
US EPA	United States Environmental Protection Agency
WB	World Bank

WCED	World Commission on Environment and Development
WRI	World Resource Institute
WSSD	World Summit on Sustainable Development

ABSTRACT

The main objectives of this study are to identify the role of the local communities in sustainable forest management in Cameroon; to describe their dependence on forest resources; to describe their perception of SFM, and the challenges they face in forest management. To achieve these objectives the Bimbia-Bonadikombo Community Forest (CF) in the South West Region of Cameroon was selected as the site for the study, because it is accessible and currently under pressure from the public whereby even those who are not members of the CF get free access to it.

Based on the 1994 forestry law reform, the local people were given the opportunity to manage the resources on which their lives depend on and this led to the inception of community forests in Cameroon. Much has been written reiterating the importance of allowing the local communities to make decisions concerning their CF, to plan, implement and evaluate projects. However, little efforts have been done to optimize the strengths and opportunities available for the local people in respect to this.

This research is a descriptive study using a quantitative cross sectional design (that is, respondents were examined once and at a single point in time) which is necessary for obtaining numerical data. Primary data was collected using a survey questionnaire consisting of structured questions. Closed ended and likert scales questions were employed and the questionnaire was divided into six sections. Subject

for the survey were drawn from five villages (compartments), and representatives were selected from each compartment depending on the population of those who are members of the CF (because not everybody in the village is a member of the CF). Secondary data was obtained from the Ministry of Forest and Fauna, reports and literature related to the study. Microsoft Excel Software was used to process the data extracted from the questionnaires after being carefully sorted and coded, and the results were displayed in charts, tables and percentages.

The study revealed that:

(1) The local communities are greatly dependent on forest resources for their livelihood. All of the respondents (100%) agreed that farming is one of their major occupation, with others being hunting, collection of fuel wood and logging.

If the forest is not well managed with this degree of dependence, this will result to depletion of the resource base due to overharvesting. Therefore to sustainably manage the forest, the local people should be real managers and not just participants considering that they are the main users of the forest;

(2) 86% of respondents acknowledged that the financial cost involved in the establishment of community forests is significantly high for local communities to afford. So the local people become vulnerable to some elites and logging companies who can pay the cost. By so doing the community forest is virtually "taken over" by these elites or companies, leaving all the decision making, planning, and implementation processes in their hands; and (3) the role of local people in SFM is very limited as only 15% of the community is engaged in decision-making/ planning,

10% in implementation and 10% in evaluation and monitoring. Hence they cannot be considered as the managers of the forest rather they are participants.

Findings from this study will provide information to policy makers which will help in future policy formulation that will better improve the role of the local people in forest and natural resource management.

Keywords: Cameroon, sustainable forest management, forestry law reform, managers, participants, communities and natural resources.

CHAPTER ONE

INTRODUCTION

The central concern in the science and practice of forestry has always been the sustainable use of forests and forest resources. Indeed if forest resources are not sustainably managed, they will subsequently be depleted over time causing both economic and social harm (Sample, 2004).

During the past decades, there has been an important shift taking place in the discussion of sustainability in forest management. Sustainable Forest Management (SFM) and the sustainable use of natural resources have become one of the challenging issues in the forestry profession given that the dependence of people on the forest has negative impact. For example, FAO (FRA, 2010) stated that the rate of deforestation in most countries is occurring in an alarming rate mainly through agriculture and about 13 million hectares of forest are destroyed by natural causes or converted to other forms. All these processes have led to the dwindling state of forests worldwide.

In the report of FAO (2010), the world's forests were assessed according to regions and the global trend in extent of forest cover was presented in Table 1.1.

Table 1.1 World forest cover, 1990-2010

Region	**Total forest cover (million of hectares)**		
	1990	**2000**	**2010**
Africa	749	709	674
Asia	576	570	593
Europe	989	998	1,005
North and Central America	708	705	705
Oceania	199	198	191
South America	946	904	864
World	4,168	4,085	4,033

Source: FAO, Forest Resources Assessment 2010. Global tables (Rome, 2010).

Table 1.1 shows a general decrease in world's forests. Hence to solve this problem it is imperative that forests be sustainably managed. This management can only be a success when those who live near forests and depend on them are the actual managers of the resources. This is important because the locals are those who depend on the forest, they know how important it is to them and they also know the immediate needs of the community. So having the autonomy of managing the forest, they will direct their decisions based on the needs of the community and how to better improve the health of the forest on which they depend. This will prevent the resources from depleting.

1.1 Forest Services

Forest as a natural resource provides us with food, energy, living space, materials for health maintenance, and livelihood (Bob et al. n.d, cited in Bob, U. & Bronkhorst, S., 2011, p4).

The forest provides a variety of services and also energy in the form of renewable bio-fuels and abiotic energy sources. It helps in atmospheric regulation, water quality regulation, lifecycle maintenance & habitat protection, air flow regulation, dilution and sequestration. It also helps in religious and spiritual wellbeing; in recreation and community activities as well as in information & knowledge (Common International Classification of Ecosystem Goods and Services (CICES), 2010).

It is without doubt that forests and ecosystems provide human kind with a variety of services. Millions of people worldwide depend on the forest for their livelihoods, in one way or the other; through food consumption and sale, as well as employment from forestry enterprises, services from forest ecosystem, and forest biodiversity (FAO, 2013). 2.6 billion people are estimated to depend on fuel wood for cooking , charcoal making and for energy generation (FAO, 2013).

Forests have the potential of protecting the soil and watershed and can also reduced vulnerability of agriculture to climate change. When ecosystems are not sustainably managed, they become degraded and lead to the loss of food biodiversity which is contributing greatly to the increase in poverty and malnutrition in developing countries, and Africa in particular. In order to meet up with the

Millennium Development Goals (MDGs) to reduce hunger by half in 2015, the contribution made by forests and trees to food security and nutrition deserves urgent consideration (FAO,2013).

1.2 Forests for poverty reduction and economic growth

Given the numerous services provided by the forest, people overexploit the forest resources in an unsustainable manner, which can lead to the depletion of the resource base. This is a common problem faced by most developing countries, where due to poverty high pressure is exerted on the forest resources. Cameroon is one of the developing countries whose economy is reliant on the forest for timber production as well as on non timber Forest products (NTFP) given that about 70% of the population is engaged in the agricultural sector (CIA, 2012).

The forest sector of Cameroon is the second largest source of export revenues after petroleum and contributes to the 6% of the Gross National Product (de Wasseige et al. 2009). Topa et al. (2009, pg 15) estimated that the forest sector accounted for 29% and 24% of nonpetroleum export in 2001 and 2004 respectively. ITTO (2011), estimates on average the annual industrial round wood production to be 2.27 million m^3 between the years 2007–09, and the annual sawn wood production to be 773 000 m^3 within the same period. Although timber exploitation helps to boost the country's economy and creates forest-based jobs to many people, when the exploitation is done unsustainably it leads to degradation of the forest.

The NTFP sector is also rapidly expanding, and these products are traded within the country or in the central African sub-regions with Nigeria.

NTFP such as the bark of trees, bush meat, leaves of *Gnetum africanum* are collected from the forest and traded. The bark of *Prunus africana* is extracted for sale to pharmaceutical companies for processing to treat prostate related disorders in men (ITTO 2009a). The increased commercial demand for the NTFP is leading to over harvesting of these species. The local people specifically the forest dwellers of the East Region, rely on the forest for their livelihood and the forest provides them with food, medicines, locally traded goods and even some spiritual values.

The forest communities in Cameroon use forest resources as a way to alleviate poverty when they trade on some of the non-timber forest products. Therefore, when the forest is degraded, it implies a disruption of economies of the local people; food security becomes threatened, and their traditional way of life is eroded.

1.3 **Shift in forest management paradigm**

Considering that the forest is also important in mitigating climate change, it is of paramount importance to decentralize forest management not only on papers but also in practice, so that the rural community people can use indigenous knowledge to protect the forest and maintain the carbon stock of the trees as well as ensuring food security. The first step to conservation and sustainable use of biodiversity for food and nutrition as well as maintaining the carbon stock is to return to local crops and traditional food systems (FAO, 2013).

Considering the dwindling state of forests today, the governments of many countries have chosen to devolve the management of forests to the local communities since central management alone is not solving the current situation of the forests. This has made the concept of community forestry to spread across many countries in Southeast Asia, Tropical America and Africa, with successes recorded in countries like the Philippines, Nepal, Thailand and Mexico.

Cameroon on its part to ensure that its vast forest is not destroyed, the management of its forest was decentralized through the enactment of the forestry law in 1994 (Oyono et al. 2006, 2007, Bigombe, 2003, Bigombe et al. 2005, Ezzine de Blas et al. 2011, Mandondo, 2003, Djeumo, 2001). This enactment gave the rural communities the right to manage the forest since they are the custodians of the forest and also depend on it.

Although the forest management has been decentralized, the rural community's role in management is not clear (whether they are managers or participants). In this light, this research aims at identifying the role of these rural communities as either managers or participants in forest management in Cameroon. If they are actually the managers then they should be the decision makers, planning, implementing and evaluating the projects carried out in their community forests.

This study describes the role of the rural people in SFM. Primary data was collected using a survey questionnaire consisting of structured questions. Data collected was analyzed using Microsoft Excel and the results were displayed in charts,

percentages and description. The result shows that the local people are not managers; rather they are participating in management contrary to what the law stipulates.

1.4 Statement of the problem

Legally, the rural people are given the right to manage their community forests. As managers of the forest, the communities are expected to be the decision makers, planners, implementers, and evaluators of any developmental project in the community forest. However, the study of Oyono et al. (2006) revealed that local governance over forest resources is still very poor and that the local community members have not received significant decision-making powers, because decision is still in the hands of timber companies and municipal authorities. The local community representatives usually act as observers in meetings which are mostly chaired by the mayors or their representatives (Oyono et al. 2007).

Given that the main objective of the forestry law reform in Cameroon was to increase tax revenue from the forest, the law favors large scale forestry enterprises by encouraging commercial exploitation. Part of the reason for this is that the legal framework is inadequate or poorly enforced. For example, Cerutti et al. (2008) argue that some logging companies do not respect the law in Cameroon and even harvest some plant species which are restricted by the management plans. This creates conflicts between the local community and logging companies on how the management of the forest should to be done.

The forestry law fails to give the local people ownership right over forest resources; this tends to undermine customary laws and norms (Samdong, 2009). As a result, the forest is treated as public or even "state-owned" domains, which are subject to "free-riding" effects with the consequences of over-exploitation and degradation. Chhatre and Agrawal (2009) pointed out that when communities have ownership right over a piece of forest, that forest will be well managed as opposed to a state-owned forest.

These major issues in the forestry law reform and the decentralization of forest management are the basis on which my research is based, which is 'to identify the communities' role in forest management, either as managers of their forests (as stipulated by the law) or as participants. In order to tackle this research problem, following questions need to be answered.

1.5 Research Questions

- What is the role and responsibilities of the rural community in sustainable forest management? Managers or participants?
- What is the rural community's dependence on forest resources?
- What is the rural community's perception regarding forest management and its sustainability?
- What challenges do the rural community people face in managing the forest?
- What are recommendations to enhance the role of rural communities in SFM?

1.6 Research objectives

- To describe the rural community's role in sustainable forest management.
- To describe the community's dependence on forest resources.
- To describe the perception of the rural community about sustainable forest management
- To identify problems that will provide information for future policy formulation.
- To provide recommendations to enhance the role of rural communities in SFM.

1.7 Significance of the study

While a number of researches have been carried out on the issue of forest management in Cameroon, none has emphasized the role of the rural community in SFM. Emphasis will centre on rural community's role (responsibility) on the sustainable management of the forest, from which suggestions will be made on how to improve their performance, the techniques they will require and at the same time improving their livelihoods.

This research will help the government to identify and create national programs that would strengthen the implementation of policies regarding environmental management and protection, and particularly policies on community forestry. Findings from this research will provide ways to better the management of

forests and natural resources by the rural people. This research aims to fill the gap, especially in identifying the role of the rural community regarding SFM, given that they are the custodians of the forest and who solely depend on it for their livelihood.

1.8 Limitations of the study

The study was limited to one community forest in Fako division, South West Region of Cameroon. This community forest was selected because previous studies have shown that it is at a risk of free riders due to its proximity to the metropolitan town of Limbe having a population of about 8ooo people who gain free access to the forest. This free access has made some plant and animal species to be locally extinct (Bimbia-Bonadikombo Community Forest Management Plan, BBCFMP, 2001). The region was also selected because it is easily accessible to collect data. The constraints encountered were in the collection of data, because of the 200 questionnaires that were issued, just 41 of them were answered and those who provided answers were afraid to express their feelings and chose the option 'neutral' in questions that were sensitive. Because of the small sample size it becomes difficult to generalize the results to the entire country based on the findings of this study. Considering that this study was centered on just one community forest among many, represents another limitation given that no comparison was done with other community forests within Cameroon.

1.9 Thesis Organization

This work has been organized into five chapters. Chapter one introduces the state of the forest at the global level and country (national) level and what is causing the current degradation in the forest and how countries are working towards overcoming this problem. The objectives of the study are also illustrated in this chapter.

Chapter two presents past literature on forest resources, use and sustainable management of the forest and its resources. This chapter also looks at some theories (management and participation) and how they are related to the study. It also looks at the country's profile, resources present, how they are managed; some policies and how the local people carry out their role in SFM.

Chapter three deals with the research method and the technique used to analyze the data. Chapter four presents the research findings and discussion of the findings. Chapter five gives the conclusion and recommendations.

CHAPTER TWO

REVIEW OF LITERATURE

This chapter explores some theories, concepts and previously published research works that are relevant to the context of this research. These theories and concepts are discussed and their importance and implications with regards to forest management and sustainability highlighted appropriately. Past literatures on the subject matter are explored and at the end summarized in order to justify the relevance of the study.

The increasing pressure on the forest and on other natural resources has made management challenging, and as the world's forests have become scarce, they are becoming increasingly more valuable and worth managing (FAO, 2001, p.g 3). As a result of the diverse functions of the forest, conflicts are often generated between economic development and conservation objectives (FAO, 2001).

2.1 Definition of terms

2.1.1 Sustainable Development

Different definitions exist regarding sustainable development, from different disciplines and with different assumptions, relating the society and nature (Elliott, J. A. 2012). However, the World Commission on Environment and Development, (WCED, 1987), defined Sustainable Development as "*development which meets the*

needs of the present without compromising the ability of future generations to meet their own needs".

The concept of SD has been evolving since its inception in 1972, when the international body first looked at the connection between the quality of life and the environment at the UN Conference on Human Environment at Stockholm. It was only in 1987 that the term SD was defined by the World Commission on Environment and Development. Several other definitions of SD exist based on different approaches, from economic, ecological to socio-cultural. The World Bank (1992) used the economic approach and defines SD as;

> *"the development that bases developmental and environmental policies on a comparison of cost and benefits and on careful economic analysis that will strengthen environmental protection and lead to rising and sustainable levels of welfare"*.

In this definition the World Bank is looking at the cost involved in protecting the environment. Edward Barbier (1987) looks at it from the socio-cultural point of view, which involves maintaining the stability of cultural and social systems.

No matter the definition that is used, sustainable development takes into account three concepts; social development, economic development and environmental protection. These concepts are often termed triple bottom line and

Rogers et al. (2008) argue they must be given equal consideration in order to obtain sustainable out comes.

Rogers et al. (2008, p47) identified that poverty and the environment are related in a very complex way. That in order for the poor to survive, they turn to over-exploit the forest through overgrazing, collection of fuel wood and this can result in local deforestation and subsequent topsoil erosion.

One pillar on which SD rests is participation. Participation is essential because it involves stakeholders with different interests and responsibilities to ensure the success of a project through collaborative decision making, consultation and empowerment. Empowerment makes the stakeholders to develop ownership of the project, and so, they are motivated to work hard to ensure the project's success. It also encourages the stakeholders to learn more during their training programs (capacity building).

Rogers et al. also noted that two vicious cycles have to be broken in order for sustainable development to be achieved. These are the vicious cycle of poverty and the vicious cycle of development. This is because poverty as well as economic development makes use of natural resources.

It has been difficult to achieve SD in Africa due to a number of challenges ranging from conflicts, debts, to inadequate investments and limited opportunities to access the market (World Summit on Sustainable Development, WSSD, 2002).

In order to ensure SD, many nations were appealed to include the management of all forest types (United Nations Conference on Environment and Development (UNCED, 1992) leading to the adoption of Agenda 21, at the Rio Declaration on Environment and Development and the statement of the principles for SFM. One of the objectives of the Agenda 21 was to ensure sustainable management by conserving existing as well as future forest resources.

In order to ensure that the local community is fully involved in sustainable development, Agenda 21 was adapted by the different countries to suit each country's specific goals leading to formation of local Agenda 21. Local Agenda 21 is an approach which is based on high level of participation at the local level in the management of natural resources.

2.1.2 Natural Resource Management

The three basic natural resources are soil, water and vegetation (includes biodiversity, fauna, flora, and forests). These are the foundation of human progress and survival. However, over the years these resources have been experiencing high pressure due to population growth and poverty leading to over-exploitation. The consequence of over-exploitation is the destruction of vegetation leading to forest degradation, soil erosion, landslides, and flooding (Ghosh, n.d). Thus there is urgent need for us to balance the ecosystem given the unprecedented rate at which erosion and flooding are occurring, hence the need for the management of these natural resources.

Ghosh defines Natural Resource Management (NRM) as *"The sustainable utilization of major natural resources such as land, water, fisheries, forest, fauna and flora."* However, if poverty is not alleviated in developing countries, the natural resources will continue to be degraded because a majority of those who depend on them are the poor.

In 2002, the World Summit on Sustainable Development (WSSD) was held to emphasize the need to protect and sustainably manage natural resources as the basis for sustainable development. This was in response to poor farming techniques, over-exploitation of resources caused by poverty and population growth.

It has been realized by natural resource managers all over the world that the common practice when making decisions in natural resource management projects is top-to-down. In top-to-down decision making, government representatives at the top of the hierarchy make all the decisions and then impose them on the actual actors, usually the forest users at the bottom of the hierarchy. This system of decision making, according to Kusumanto et al. (2005), has been responsible for many failures in natural resources management. Through community based natural resource management, as well as co-management of natural resources, there has been decentralization in natural resources management involving different stakeholders with different interests and responsibilities (Table 2.1). This is to ensure that the resource users are actively involved in their conservation.

Table 2.1 Stakeholders in natural resource management

Stakeholder group	Responsibility	subgroups
Users	Monitor the resource, and respond to threats such as fire	Numerous subgroups with different interests, power and location.
Governments	Formulate policies and legislation/regulators	-Politicians -Government officials -Field assistants -Institutions (Education and training)
Development Agents	Provide technical support and expertise	-International donors -Consultants -Bilateral and multilateral donors -NGOs -Research and training organizations
Private sector	Brings investment and links to markets.	-Private enterprises -Other individuals (entrepreneurs)

Source: Adapted from Carter and Gronow (2005).

2.1.2.1 Co-management

Co-management or collaborative management is a participatory management process where there is active involvement of all the relevant stakeholders in management activities (Kusumanto et al. 2005). These activities may include the development of a joint vision, adapting to new management practices and learning jointly. Other terminologies closely related to 'co- management' include joint

management, participatory management, or multi-stakeholder management (Kusumanto et al. 2005).

In co-management arrangement there is collective action of different stakeholders with regards to natural resources management. The stakeholder's responsibilities are identified following continuous consultation and negotiation processes.

Co-management is also important in empowering the community since all the stakeholders and especially the local people participate in decision making and in benefit sharing (Yasmi, 2003).

For a successful collaborative management;

1. The stakeholders must participate in all stages of management; reflection, planning, implementation and monitoring.
2. There should be the building of effective local skills, interests and capacities that can adjust to dynamic and rapid changes after the end of the project. (Kusumanto et al.2005).

Co-management has received increasing attention over the years as it provides a substantial promise to resource base conflict (Yasmi, 2003).

2.1.2.2 Community-based resource management

Community-based resource management is a process of achieving sustainable development. It applies local knowledge, practices, and institutions, in partnership

with state/governmental organizations (GOs) or non-governmental organizations, NGOs (Pongquan, 2009), where the primary actor is the community and the state and NGO are secondary actors.

Fellizar et al. (1993) define CBRM as;

"a process by which people are given the opportunity/responsibility to manage their own resources, define their needs, goals and make decision affecting their well-being."

CBRM can also be defined as a strategy for achieving a people-oriented development where the decision making process regarding resource-use sustainability in a locality is in the hands of the people living in that locality.

By giving the local people the right to manage their resources, they will gain autonomy over a pre-determined area covering the resources, and in such a case there is sharing of responsibilities regarding the resource by the different stakeholders. Through this initiative, it is expected that the authority delegated to the rural people will result in sustainable use and management of natural resources, improved livelihoods and good governance. It is believed that when the locals are given the right over a resource, they will develop a sense of ownership over that resource and will work towards sustaining that resource rather than depleting it.

One important factor of CBRM is property rights; without property rights local management of the resource will likely fail. As defined by Schlager and Ostrom (1992), *rights refer to particular actions that are authorized; while property right is the authority to undertake particular actions related to a specific domain* (Commons,

1968 cited in Schlager & Ostrom, 1992). In terms of natural resources, we agree with Schlager and Ostrom (1992) that ownership of natural resources is composed of five clearly distinct rights (Table 2.2): the right to access the resource, to withdraw or harvest the resource, to manage the resource, to exclude the others from the use of the resource, and to alienate part or all feasible uses to third parties.

Table 2.2 Bundle of right associated with position

	Owner	Proprietor	Claimant	Authorised user
Access	X	X	X	X
Withdrawal	X	X	X	X
Management	X	X	X	
Exclusion	X	X		
Alienation	X			

Source: Schlager and Ostrom (1992)

Access and withdrawal, are operational-level property rights while management, exclusion, and alienation, are collective-choice level property rights. The collective choices determine what the operational rules of forest management are and who may participate in changing these rules (Schlager and Ostrom, 1992). Thus when the locals have the proprietor right, they possess the collective choice right to participate in management and exclusion. This is important because access to the resource will be controlled as they will authorize who may access the resource and how the resource maybe utilized. If the local people have management rights, they

will have the authority to determine how, when, and where harvesting from a resource may occur, and whether and how the structure of the resource may be changed (Schlager & Ostrom, 1992 cited in Bouriaud & Schmithuesen, 2005). When harvesting of a resource is controlled, in this manner it will give the resource time to regenerate and ensure sustainability. Thus when the locals are given property right over a resource, they will be more committed to sustaining the resource more than when they have no right over it, in which case it will be treated as state-owned. The next section describes the key elements of CBRM.

2.1.2.2.1 Key concepts and elements of CBRM

a) Community organization

Community Organization believes in human progress and improvement provided that certain definable skills are applied. According to Ross (1955), cited in Rengasamy (n.d) community organization means

> *'a process by which a community identifies its need or objectives, finds the resources to deal with these needs or objectives, takes action in respect to them, and in so doing extends and develops co-operative and collaborative attitudes and practices in the community'.*

This simply means that the community is responsible for the decision making concerning the resource in question and how to go about achieving their goals.

Fellizar et al. (1993), define C.O as

> *"The process which builds/ mobilizes people and other community resources towards identifying and solving their own problems, establishing people's self awareness and capacities to stage their own future, taking action collectively considering the bureaucratic structures and restrictive institutional arrangements*".

From the different views presented above on community organization, both are pointing to the fact that communities need to identify their needs and collectively work towards achieving the needs. This means that CBRM will be a greater success if the community is organized.

Community Organization is an important aspect of CBRM because it facilitates participation of members in the community so that a greater majority can participate in the decision-making process and benefit from projects (Ferrer & Nozawa, 1997). In this way, the community is empowered and gets to collectively address their needs including the management of their resources. This empowerment is important in CBRM and can only be realized through organization (Speer & Hughey, 1995).

b) Participation

Another important element of the CBRM approach is the active participation and involvement of the community in every step of the process. It is an operational mechanism applied in CBRM. For the management of any natural resource, active participation of its direct users is required. Participation can be at an individual level, household level or community level, involving in decision making, implementation,

monitoring and assessment etc. participation can be direct, through the local people or a group or indirect through representatives. Participation involves information sharing, consultation, collaboration and empowerment (Pongquan, 2009).

c) Livelihood development

Chamber and Conway (1992), defined livelihood as *"a means of gaining a living, including livelihood capabilities, tangible assets, such as stores and resources and intangible assets such as claims and access"*. Their literature has been widely used on livelihood development. Another definition on livelihood states that;

> *"a livelihood is sustainable when it can cope with and recover from stresses and shocks maintain or enhance its capabilities and assets, while not undermining the natural resource base"*(Scoones, 1998).

Literarily, livelihood is the activity that people do to survive and to meet their everyday needs. This is a method of reducing pressure on natural resources by the local people. This can be achieved through the provision of alternative livelihood options so that they can meet their basic needs through other income generating sources, for example providing them with off farm jobs, or by widening their socio-economic range by allowing them have access to some social services (Ferrer & Nozawa, 1997). This will open up some opportunities for them, and so reduce their dependence on natural resources. This will also give the resources time to recover. This will lead to resource conservation and at the same time improving on the well being of the local people.

d) Education and training

Education and training is important because it creates awareness, and acts as a tool for development of skills and also helps in capacity building. It is a channel through which knowledge from research is passed on to the users. Education can be through meetings, seminars or workshops.

2.1.3 Sustainable forest management

2.1.3.1 Forestry

The variability of ownership in forestry makes the practice of forestry extra-ordinarily diverse; ranging from public forestry, urban forestry, to agro-forestry. According to Ford-Robertson (1971), as cited in Helms, (1999), *"forestry is a science, a business, or an art involving the creation, conservation and management of forests and forest lands, to ensure the continual use of their resources, materials or other forest produce"*. Such a definition is much more geared towards the goal of timber management rather than forest management; hence the idea of forest management.

2.1.3.2 Forest management

Forest management is;

> "*The process of planning and implementing practices for the stewardship and use of forests and other wooded land aimed at achieving specific environmental, economic, social and/or cultural objectives"*(FAO, Global Forest Resources Assessment 2005).

This management can be for aesthetics, recreation, wood products etc, and can be based on conservation or economics purposes or both. The rising demand for forest products and resources requires that the forest should be sustainably managed, so as to ensure its availability in the future.

2.1.3.3 Sustainable forest management

The sustainability for forest products has traditionally been used to refer simply to the maintenance of a harvesting regimen over time (Toman, 1992). As a way of ensuring sustainable development worldwide, sustainable forest management has become the most suitable technique to manage the world's forests (Hoffmann, 2006).

A better understanding of sustainable forest management was provided by the UNCED, (1992). One of the outcomes of the summit was the statement of forest principles for sustainable management of forests, and was the first global agreement made concerning sustainability of forest management. SFM encompasses an approach which keeps the forest ecosystems healthy with a simultaneous emphasis on ecological, social, and economic considerations. These three aspects are in fact mutually dependent. Sample, (2004) stated that it is impossible to get forest ecosystems protected without the economic and social needs of the local people being incorporated in the conservation processes.

Many definitions for SFM have evolved. The International Tropical Timber Organization, (ITTO, 1992), defines SFM as;

> *"the process of managing forest to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment."*

As a follow up of the Rio declaration, the Ministerial Conference on Protection of Forests in Europe ((MCPFE, 1993), also provided a definition of SFM as

> *"The stewardship and use of forests and forest land in such a way and rate, that maintains biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, and that does not impact negatively on other ecosystems."*

Many other organizations came up with different definitions, but the basic principles in all the definitions were the same – managing forests and forest resources in a way that meets present and future generation's needs, from social, ecological to economic perspectives. To broaden the scope of SFM, a number of criteria and indicators were developed, so as to ensure that SFM is not only considered in terms of sustained yield of timber, but also other forest functions like protecting the soil, watersheds, and supporting livelihood.

In the next section the author will be discussing about community forestry and some related terminologies.

2.1.4 Community forestry and related terminologies

In the early 1980s when central management could not reverse the rapidly degrading forests and other resources, many countries began to include the local communities in decision making concerning resources management (Mansuri & Rao, 2004). This shift in the trends of forest management led to decentralization of forest management and the subsequent creation of community forests.

2.1.4.1 Community Forestry

This is a Community-Based Resource Management approach with a focus on the forest and forest resources. Through decentralization, management of forests has been transferred to the rural communities, and according to Brown & Lassoie, (2010); this process gives the local communities the opportunity to regain rights to forest resources which they were deprived of due to colonization and central management of forests. Community forestry is a forest management strategy which involves active participation of an organized community. FAO (1978), defines community forestry as,

"a*ny situation which intimately involves local people in a forestry activity"*.

This embraces a spectrum of situations ranging from woodlots in areas which are short of wood and other forest products for local needs, through the growing of trees at the farm level to provide cash crops and the processing of forest products at the household, artisan or small industry level to generate income, to the activities of forest dwelling communities.

Likewise RECOFTC defines community forestry as

> *"Community forestry involves the governance and management of forest resources by communities for commercial and non-commercial purposes, including subsistence, timber production, non-timber forest products, wildlife, conservation of biodiversity and environment, social and religious significance. It also incorporates the practices, art, science, policies, institutions and processes necessary to promote and support all aspects of community based forest management"* (RECOFTC Strategic Plan, 2004: 11).

Community forestry evolved in the late 1970s as a means of combating deforestation and forest degradation caused by central management. Community forestry is a terminology often used in Cameroon and Nepal.

Although the concept of community forestry appeared in the 1970s, it was embraced in Cameroon only after the 1994 forest law; the first in Central Africa (Beauchamp & Ingram, 2011) and Cameroon saw itself and was seen as the regional leader in SFM (Topa et al. 2009).

2.1.4.2 Social forestry

This is the management and protection of forests to help in environmental, social and rural development. The principal interest in social forestry is to ensure the well-being of the local people who are dependent on forest resources, while conserving the environment in the process. Social forestry is common in many countries in Asia and

in 1997; the National Commission on Agriculture in India introduced it in many states of the country. This program involved tree planting on village wastelands and common lands.

2.1.4.3 Participatory forest management (PFM)

This is a management regime where the local people participate in decision making and in policy formulation. PFM is an important element in the strategic management of forests. The Caribbean Natural Resources Institute (CANARI) defines participatory forest management as

> *"Structured collaboration between governments, commercial and non-commercial forest resource users, interested organizations, community groups, and other stakeholders, to achieve shared objectives related to the sustainable use of forest resource"*(CANARI, 2002).

2.1.4.4 Joint Forest Management (JFM)

This is a term commonly used in forest management in India where the government forest departments partner with the local communities to ensure sustainable forest management. This was in response to huge forests degradation caused in the country. Thus the Forestry Department of India developed scheme which restricted local residents from grazing, collection of woods, so as to preserve the forest ecosystems by allowing them to regenerate.

2.1.4.5 Community-based forest management (CBFM)

CBFM is defined by FAO as "*the management of forest lands and forest resources by or with local people, individually or in groups, and for commercial or non-commercial purposes*".

CBFM started in the mid-1970s and was adopted in the Philippines as a national strategy for management and conservation of forest resources.

The promotion of community-based forest management worldwide is to enable local communities capture the value of the forests they inhabit (Ezzine de Blas et al. 2009); and this involvement by communities in the management of forests has become the pillar for SFM worldwide. Since its inception in the late 1970s, community forestry has been evolving but the process still remains a challenging option (Brown & Schreckenberg, 2001). The next section presents the theoretical framework of this study.

2.2 Theoretical Framework

2.2.1 Management

The Business Dictionary defines management as the act of coordinating activities in order to achieve defined goals and objectives; in which case the managers have the power and responsibility of making decisions and overseeing the project. Hitt et al. (2009) define management as "*the process of assembling and using*

sets of resources in a goal-directed manner to accomplish tasks in an organizational setting".

Thus, as a process, management includes activities such as planning, implementing and evaluating. Assembling involves putting together all the resources; human, financial, technology and materials. Acting in a goal-oriented manner implies working towards achieving a particular purpose. An organizational setting implies that the group of people involved should be organized with individuals having specific responsibilities. Management however is such a complex concept and so no one definition can completely or accurately define it.

Who is a manager?

If the rural communities must be managers of the forest, they must be competent, have clear understanding of the resource they are managing and a clear definition of what they are expected to do (Michael, 2002), as well as possessing the qualities of a manager. According to Lewis (2007), "*a manager is one who looks around to see what needs to be done for the good of the organization and goes ahead to do it without waiting to be told to do it"*. This must be done in line with the mission of the project. He also stated that the principal responsibility of a manager is to ensure that all work is completed on time and at the correct performance level.

A manager is also someone who has been designated with the responsibility of performing a managerial task or activity. Thus as managers the communities must be in charge of their managerial duties and act according to the purpose of the project

and not be mere observers of what is happening. A manager is one who exercises leadership skills as well as management skills, because managers mostly deal with people. Leadership as defined by Packard (1962) *"is the art of getting others to want to do something that you believe should be done"*. Getting others to want to do something (project management) means the manager must encourage and motivate others. Project management is all about getting people to do some work that must be done to meet the objectives of the project. PMBOK (2004, cited in Lewis, 2007) defines project management as *"the application of knowledge, skills, tools and techniques to a project activity to achieve project requirements"*.

Some qualities of a leader according to Mark (2006) are; (1) a leader should live the values by providing a model for behavior which respects the organization (2) encourage and motivate others by reaching their minds, heart and financial interest (3) set new standards and go beyond the conventional system, as this will help achieve more ambitious goals.

What do managers do?

There are different topologies outlining the managerial roles of the manager with a range of responsibilities to be carried out by the manager, however, I will use the following managerial functions which will be more applicable to the context of this study. These are planning, implementation, and evaluation.

a) Planning

Planning simply deals with providing answers to the questions that will help in achieving the objectives of the project. For example, what resources do we have, who does what, how much does it cost, when is the deadline, and how should it be done? For a project to be properly planned three activities have to be performed, these are strategy (the method to be employed to do the job-strategic planning to achieve long term objectives), tactics (tactical planning to achieve short term objectives) and logistics during the life of the project; and as much information as possible is required during planning to avoid shortcomings (Dulmer & Skinner, 2004). This phase actually defines the problem, and provides solution options. The concept of project planning is very important in any project because during the process of planning six key elements come to play, these are resource (human, financial, material etc) and environmental (external) analysis, setting objectives, developing action plans, implementing action plans and monitoring outcomes (Hitt et al. 2009). This is to ensure the success of the project. Lewis (2007) stated that the objectives of a project should be specific, measurable, attainable, realistic and time-limited.

During the planning process the manager ensures that a good project plan is produced and should include the problem statement, mission of the project, objectives, the required work, schedule (timing), resources, control system, accountability (knowing who is responsible for what action, especially in the case where many people are involved in implementation of the plan) and a work breakdown structure.

For example, in the case of CF management the problem statement can be 'forest degradation due to poor management practices'. The mission for this problem can be to ensure forest sustainability. The work required will be restoration through reforestation and afforestation. Resources will be human, financial, and technical; for a period of two years. Control system will involve monitoring and weekly reporting to provide feedbacks.

In order to conceive a project, planning, implementation and evaluation aspects complement each other at all the stages of the Management process. And it is important to note that the people involved in the implementation should also be a part of the planning process. Planning usually takes place following a series of meetings and discussions. When the planning phase is completed, then the plan has to be implemented.

b) Implementation

Project implementation phase involves executing the plan and it includes logistics and tactics. Logistics ensures that the implementation team has the necessary materials they need for the job. And tactics deals with how the job will be done, the length of time the job will take (implementation schedule) and who does what. It is important to schedule a project because it ensures that deadlines are met. And schedules should be developed according to what is possible. Some plans fail in the implementation phase because of inadequate assessment of the resources needed and

the lack of accountability by the individuals assigned (Hitt et al. 2009). Implementation also focuses on the development of a detailed annual work plan with clear targets, and monitoring systems.

Therefore successful implementation of activities greatly depends on a good plan. However, no matter how good a plan is its implementation has to be monitored by the manager. The progress of the plan is monitored (to ensure that time allocated for each stage of implementation is respected, as well as to ensure that those assigned are aware of their responsibility). Then the support such as finance, coaching and encouragement that the plan receives is also monitored. Finally, the implementation is monitored; if the plan needs to be changed due to resistance of those concerned not wanting to take new challenges. The implementation phase also requires leadership and motivation, as this will inspire and generate personal encouragement and lead to positive outcomes.

Usually capacity building occurs during this phase to ensure increased participation. For a management plan to be successfully implemented, it must be user friendly (should meet the user's needs, easy to understand and it should be drawn up by the users) FAO (2002).

c) Evaluation

Project evaluation has been used as means to appreciate how policies, programs and projects have actually affected the society ultimately on a positive note. Lewis (2007) defines evaluation as the process of determining or judging the worth of something. He also stated that evaluation gives an idea on how a project should proceed based on management decisions. The objective of project evaluation is to assess the results achieved during the whole implementation process, and also to compare the achieved results if they are in line with the set objectives of the project. During this phase, questions are asked to assess the progress of the project such as; are we on course? What did we do well? What can be done to improve? Answers to these questions can provide feedback and recommendation which will help at improving administrative operations by understanding the content and outcomes of those operations; and also provide results to the stakeholders. The feedbacks are necessary because in order to learn we need feedbacks, and we learn more from our mistakes than from our successes. The evaluation of any project is based on some general framework:

- Subject of evaluation: i.e. clarification of policy structures, PDM/PTM.
- Evaluation question: i.e. current project situation in implementation process, comparison with targets and performance measurement, and effect of project and impact.
- Methodology: i.e. economic, sociological aspects and other analysis.

The ex-ante evaluation criteria by DAC generally involve five aspects which seek to address very pertinent issues about the project. (1) Relevance: Examines and justify the necessity of project implementation, (2) Effectiveness: Examines the effects of the project based on intermediate outcome and causal relationships, (3) Efficiency: Examine how efficiently the activities would utilize the inputs at particular time interval and cost to obtain the outputs, (4) Impact: Examines effects and influences of the project to the society on long term bases and (5) Sustainability: Examines how the supportive variables for project realization can be sustained for a long period after termination of the project.

In terms of managing forest resources, Vu Van Me and Le Thi Mong Phuong (2010), stated that some specific objectives for an evaluation would be; to assess the impact of the project on economic conditions, policy and gender equality of the project beneficiaries; to assess the improvement in accessibility and control of forest resources for poor and ethnic minority people; and assess if changes in technical capacity and organization in forest management and production favor ethnic minority farmer.

Usually evaluation should be accompanied by review reports on the current status of the project, future status and some limitations for future lessons.

For a better project evaluation a participatory methodology is necessary where all the stakeholders are involved in the evaluation.

However, if the local people are only participants in forest management rather than managers, it was necessary to base the next section of the discussion on the theories of participation and the importance of participation to have an idea of what participation entails.

2.2.2 Participation and Related Theories

Participation is an important term in the management of natural resource, and for the management of any natural resource, active participation of its direct users is required. This is important for capacity building since some actors turn to learn on the field in the course of participation.

It was assumed by Hutton and Leader-Williams (2003) that involving (involvement is the act of participating or taking part in an activity, which can be a project or a business venture) the local community in management efforts would make it easier to achieve conservation goals especially if they have incentives to support protected areas. Other scholars like Hosseni (2011) in his work to identify methods of improving SFM in Iran showed that the participation of forest users in forest management processes was a main factor to improve on sustainable forest management. Yet others like Blaikie (2006) suggested that involving local people in conservation is important because it would make use of their indigenous knowledge in forest management.

Different topologies of participation have been used to describe the degree or levels of participation. Two topologies are discussed below.

2.2.2.1 A Ladder of Citizen Participation Theory

In this theory, Arnstein (2004) highlighted eight levels of participation namely manipulation, therapy, informing, consulting, placation, partnership, delegated power and citizen control.

a) Manipulation and therapy: In this theory manipulation and therapy were considered as levels of 'non-participation', because they are to enable the people to be educated by the power holders, rather than for them to participate in planning. Thus, the manipulation and therapy levels of the ladder of citizen participation are for information gathering and support.
b) Informing: This involves informing the citizens of their rights, and responsibilities. This step is important towards citizen participation. There must be provision for the citizens to give their own feedbacks. One-way flow of information is through posters, the media etc Forums for informing citizens should be during meetings where they can immediately give their feedback. Information of this nature also should not be delivered at the late stage of planning.
c) Consulting: This involves inviting the citizens and getting their own opinion about a project. This step is important towards citizen participation. However, this level must be combined with other levels of participation, because there is no guarantee that citizens concerns or ideas are considered.

d) Placation: This is the level where citizens begin to have some degree of influence. An example of a placation strategy is to allow citizens to advice but retain the right of the power holders to judge the feasibility of the advice. However, placation of citizens depend whether the community is organized to press their priority or whether they have technical assistance to articulate their priority.

   Informing, consulting and placation are referred to as the levels of 'tokenism'- a level where the 'have-nots' hear and can be heard.

e) Partnership: This is the level where power is redistributed between the citizens and the power holders. Citizens take part in decision making, policy formulation etc. in a community that is well organized, has financial resources, has resources to hire its own technicians etc, partnership can work most efficiently. This implies also that community organization is important for partnership.

f) Delegated power: This is the level where citizens achieve greater decision-making authority and have genuine managerial powers.

g) Citizen control: In this level the citizens have obtained a majority of decision-making seats. Levels 6-8 (e-g) are referred to as citizen power, because citizens have acquired greater power of decision making. The idea of power simply means empowering the community.

In some communities their participation only ends at the first four levels, and the community members will think that they have actually participated in project. However, active participation occurs at the last three levels of this ladder where the citizens have maximum control over resources and have achieved dominant decision making authority. Community participation is important since it aims at mobilizing the people for collective action and community building.

2.2.2.2 Pimbert and Pretty model of participation

Another participation model is that proposed by Pimbert and Pretty (1994). This model has seven topologies namely; passive participation, participation in information giving, participation by consultation, participation by material incentives, functional participation, reactive participation and self- mobilization participation (local initiatives). This is represented below starting from the lowest to highest level of participation.

Table 2.3 Topology of participation

Typology	Characteristics of each
Passive participation	Participation is by being informed of what has happened or what has been decided.
Participation in information giving	People answer questions asked through surveys by researchers. They cannot influence the research
Participation by Consultation	People are consulted, but they don't really make decisions, since external agents bring already defined problems and solutions, which can only be modified based on the views.
Participation by material incentives	People participate by being given food, cash or other material incentives for providing resources, such example labor,
Functional Participation	Participation occurs when major decisions have been made, and people form groups to meet the objectives of a project.
Reactive participation	People participate in joint analysis, which leads to action plans and the development of action plans, formation of new local groups or institutions or the strengthening of existing ones.
Self- mobilization Participation(local initiatives)	People take decisions independently of external powers. The people may develop contacts with external institutions for resources and technical advice they need, but retain control over how resources are used and managed.

Adapted from Pimbert and Pretty (1994)

The two topologies of participation proposed by both Arnstein and Pimbert (and Pretty), all point to the fact that active citizen participation occurs when they take part in decision making concerning the resource that has to be managed. On the basis of this, my study will use these participation models to assess the participation of the rural communities in sustainable forest management in Cameroon.

2.3 The importance of community participation in forest management

Active participation by the local people is necessary for conservation and proper management of forests. For several years local communities who have direct contact with forests and depend on them for their livelihoods were not involved in forest management, and according to Ahenkan and Boon (2010) it is only recently that the local people have been participating in forest management. Due to this most local communities were not interested in taking measures to ensure sustainable forest management.

Scope and application of participation

In practice participation is used in different contexts and for different purposes. Whatever the case, in the project cycle the stages where participation is needed include project planning and design, decision making, project implementation, monitoring and evaluation ESCAP (2009). People can participate in projects of poverty alleviation, forest restoration and so on. The participatory watershed management which involved the development of a wasteland in the Almer District in

India, is an example of community involvement in the restoration of a common resource. This watershed had experienced erosion problem and soil lost moisture and the water table became low. The work of ESCAP (2009) citing RDI (2003), showed how the immediate users were involved in all the stages of the project cycle while the government only gave the necessary technical support needed. The result of this active participation by the local community was a huge success; because it gave the local people the confidence that they can manage projects on their own without the government's support and it also gave them the opportunity to learn how to manage the scheme.

2.4 Lessons learned from other countries

2.4.1 Community forestry in Nepal

Community forestry program in Nepal began in the late 1970s (Ojha et al. 2009) with its main objectives being to address the livelihood of the forest dependent people and to combat forest degradation through SFM. Through this program there was management and governance of natural resources by communities with the collaboration of government and other stakeholders.

Community forestry in Nepal has involved a dynamic learning process since its inception in the late 1970s (Winrock, 2002).

a) Enabling Policy Environment

Many institutional changes occurred recognizing the need for communities to manage forest resources. The National Forestry Plan of 1976 recognized the need for involving local communities in forest management and protection. Operationalization of CF was made possible by the Sixth-Year Plan (1981-85) by stating the necessity for local people to participate in forestry activities. In 1987 the Decentralization Act introduces the concept of Forest User Group (FUG). In 1988 the Master Plan for the Forestry Sector introduced the concept of "user group" with objectives being to meet basic needs, include local users in decision making and benefit sharing, improve socioeconomic growth, and encourage sustainability in resource utilization (Winrock, 2002). This act also recognized the role of the government as advisors.

Community forestry was further strengthened by the 1993 Forest Act and the Forest Regulation of 1995 through the provision of a legal basis for its implementation and giving forest user groups the right to make decisions regarding management of forest resources (Acharya 2002). This has greatly empowered the local communities and the CFUGs have expanded throughout the nation and according to Luintel (2006), this expansion has led to the replacement of the traditional top-down state power by a strong civil society, and this has enhanced social learning and collaboration in support of community-based forest management in Nepal (Ojha, et al. 2007).

In general, there is democratic governance of the resource as demonstrated by the CFUGs (Ojha and Pokharel 2005).

b) Role of communities

Management of forest projects is done by the CFUGs and in order for the CFUGs to be financially independent, NSCFP is sending funding directly to the CFUGs rather than through NGO (Carter et al. 2011). They also stated that most of the CFUGs have an administrative and financial management system in place capable of managing not only the forest but funds as well. Projects are also implemented, monitored and evaluated by the CFUGs and evaluation meetings that are held twice a year.

c) Benefits

There has been improvement of forest condition after community forestry implementation, and this has enhanced biodiversity conservation (Guatam et al. n.d).

Community forestry has led to significantly improved local livelihoods and landscapes by reviving socio-ecological system of forest and rural landscapes (Ojha et al. 2009)

According to the UN (2011), community forestry in Nepal has led to improved forest conditions, including greater forest cover. It has also resulted in social mobilization and institutionalization of democracy at the grassroots, improved livelihoods and food security.

d) Challenges

One of the problems encountered was benefit sharing, whereby the poor were being marginalized while the greater part of the benefit went to the elites, as well as the right to decision making. However, when many CFUGs identified the problem, they adjusted accordingly (Kanel and Kandel 2004).

Technicality of management; management became more technically complex as the CFUGs had to include many items in their management. However, due to collaboration among stakeholders they were able to follow the revised forest guidelines to produce the required forest inventories (Ojha et al. 2009).

The protection-orientation approach of forest management undertaken by the CFUGs, limits harvest of resources and this is affecting many livelihoods (Arnold, 1998).

✧ **Lessons learned**

- Community forestry in Nepal has demonstrated a case of practical devolution of governance yielding both procedural and substantive gains (Ojha et al. 2009), and it led to democratic deliberations, capacity building and institutional development; as well as improving local livelihoods and regeneration of forest resources.
- The 1993 Act and the 1995 Forest Regulation law provided the CFUGs a legal identity and the autonomy of managing forest resources. Tenurial security is an

important aspect in the success of community forestry in general (good enabling policy environment).

- The development of a strong civil society by the CFUGs played a critical role in the success of community forestry in Nepal as it replaced the traditional top-down state power (Ojha, et al. 2007).

2.4.2 Community-Based Forest Management in the Philippines

Like any other country in pursuit of sustaining the tropical forest, there has been a new paradigm in the management of forest resources and governance to a people-centered management through community forestry or community-based forest management (CBFM) in the Philippines. The Philippines was the pioneer to implement CBFM in Asia by adopting it as a national strategy of promoting sustainability in forest management involving full participation of the local communities.

Rebugio et al. (n.d), citing DENR (1989) stated that the Filipinos saw community forestry as a "new approach to forest management" with the objectives being 1) to improve the socio-economic condition of the communities through poverty reduction; 2) promote democracy in forest resources use; 3) promote sustainability in forest management; and 4) promote a healthy living environment for the people, Pulhin et al. (2007) cited in Rebugio et al. (n.d).

The evolution of CBFM in the Philippines occurred in three phases; Pioneering Period (1971–1985), Experimentation period (1986–1994) and Institutionalization

Period (1995 to present), this period saw massive funding of CBFM operations by external donors.

a) Policy Environment

In response to the new shifts in forest management, there were corresponding changes in government policies and strategies to ensure responsive and participatory approaches in forest management. In response to these changes a number of presidential decrees and orders were passed and this led to the implementation of three forestry programs; Forestry Occupancy Management (FOM) Program, the Family Approach to Reforestation (FAR) and the Communal Tree Farm (CTF) Program were implemented during the pioneering period (Rebugio et al. (n.d), (Bacalla) (nd)). However, these programs only used the communities as labor providers. The Integrated Social Forestry (ISF) Program was launched in 1982 during the experimentation period to consolidate the three existing programs. This was in an effort to decentralize forest management and involve communities more in the process.

In accordance with the decentralization process, in 1995 the government adopted CBFM as a national strategy for SFM through the provisions of Executive Order No.263. Section 3 in the order provided tenure rights to the local communities, with the condition that they should sustainably manage the resources. Bacalla (n.d) further explained that through the CBFM, the local communities were empowered and Peoples' Organizations (POs) were given the rights and responsibilities to

manage, access and develop the forest. This management right comes after the approval of the application and issuance of a CBFM agreement.

The POs then prepare a Community Resource Management Framework for their forest (Nurse & Malla, 2005) describing the long term vision of the community, its commitments and strategies for the management and utilization of forest resources.

b) Communities' role in management

Tesoro (1999) explains that in the Philippines there are 10 sub-programs under the Community-Based Forest Management (CBFM) program, with the Ancestral Domain program included, with a number of stakeholders involved in the community forestry program with the POs at the center of these programs. Some of the responsibilities of the POs among others (Bacalla (nd) include: 1) protection of the forestland within CBFMA from illegal activities; 2) preparation and implementation of the CBMF and a work plan; and 3) formulating and implementing equitable benefit sharing schemes.

POs are also expected to take part in the selection of the type of project, identify the site for the project and indication of project boundary. The management is done with the government since the CBFMA stipulates that the POs and government should mange and protect portions of the forest.

Monitoring of the forest is done through patrols by forest guards assigned by the government.

c) Successes

There have been some positive outcomes by CBFM in the Philippines, these include increase in forest cover, and improved farming technologies were adopted (Guiang et al. 2001; Pulhin 2005).

Fisher and Malla (1987) stated that equity exists in CBFM in the Philippines.
CBFM also led to improved livelihoods of the participating communities, since they had rights to harvest and utilize forest resources.

d) Challenges

The DENR is supposedly the facilitator of CBFM by providing technical support to the POs; however, one of the challenges faced was the limited number of qualified DENR staff with knowledge of forestry issues during the early periods of CBFM implementation.

Pulhin (2005) explained that there was no management and information system at DENR to support monitoring and evaluation activities after the project has terminated. Hence after project completion monitoring and evaluation cannot be done.

Some researchers hold it that there is corruption and tolerance of widespread illegal activities CBFM in the Philippines.

The log ban issued has greatly reduced the economic activities of the POs from which they hoped to improve their livelihoods.

Although the government has been making efforts to support CBFM financially, CBFM still faces financial difficulties as the funds provided by the government is not enough to sustainably carry out the activities of CBFMP.

✧ **Lessons Learned**

Despite the challenges faced by the CBFM in the Philippines, there are many lessons to be learned from their experiences.

- The presence of enabling policies which supported CBFM programs as documented by Pulhin et al. (2007) provided political space and support to local communities for effective management.

  Tesoro (1999) outlined some of the lessons to be learned from CBFM in the Philippines as follows:

- Being a national strategy for SFM, implies it is the concern of all if it should succeed, so programs concerned are geared towards the successful implementation of CBFM.
- DENR ensures its role as facilitator, by making policies that simplify and fasten document processing by the POs and also the cost of transaction. The POs are also assisted in preparing the CFMF, resource use plan as well as the annual work plan.

- Through empowerment of the POs, most of them have gained experience in managing finances and the forest. They have also gained experiences in working with the private sector.
- CBFM also receives funding from the government which saves million of Pesos annually for the protection of the forest. In addition to that, the local government units (LGUs) also funds CBFM activities in their local jurisdiction.

2.5 Country Overview

2.5.1 History

Cameroon was a German colony from 1884 to 1914 (when World War I broke out). Following the outbreak of World War I, there was massive invasion of the territory by France and Britain. And following the League of Nations mandate of 1919, the country was partitioned between the British and the French. The Republic of Cameroon is currently divided into 10 administrative regions, constituting of eight former French colony (Cameroun) and two former British colony (Cameroons). Cameroon has two official languages; French and English. The French Cameroun gained independence in 1960 while the British Cameroons gained its independence in 1961 (Ngoh, 1987).

2.5.2 Geography

a) Location

Cameroon is a Central African nation, situated at the end of the Gulf of Guinea. The country covers an area of about 475,400 square kilometers. Cameroon shares boundaries with Nigeria to the west, with Congo, Gabon and Equatorial Guinea to the south, to the northeast with Chad, and to the east with Central Africa Republic. It has 402 kilometers of coastline on the Bight of Biafra, part of the Atlantic Ocean (Neba, 1987).

b) Topology

The southern region is characterized by a lowland plain having equatorial rainforest with swamp lands along the edges; the west and southwest regions contain mountainous forests; the centre region consists of the savannah plateau also known as the Adamawa plateau. The northern part of the country consists of the sub-arid savannah. Some rivers in the country include Sanaga, Wouri, Dibamba (flow into the Guinea Gulf), Logone, Chari (drain into the Lake Chad Basin), (Cameroon, 2011).

2.5.3 Demography

a) Socio-demographic characteristics

The US census bureau 2012 report, estimated that the population of Cameroon stands at about 20,129,880 inhabitants and CIA (2013) estimates an annual growth rate of 2.12%. CIA fact book (2010) estimates an urbanization rate of 3.3% with an urban population of about 58%. There has been a decrease in under-5 mortality rate from 147 per 1000 to 104 per 1000 between 1995 and 2011respectively. The World Bank, report (2011) shows that the total population of those living below the poverty line has dropped from 40.2% in 2001 to 39.9% in 2007; and the life expectancy stands as 54 years with a fertility rate of 4.2%.

b) Economy

For the past decades the country's economy has been relatively unstable due to the fluctuation in world prices on commodity exports in which she solely depended on for its development. However, according to the World Bank, the economy of

Cameroon continues to grow and at the end of the second quarter of 2012, industrial production was up by about 8.5 % compared to the same period the year before (WB, 2013).

The World Bank also identified that the factors that continue to hamper economic activity in Cameroon are weak governance, poor infrastructure, and an unfavorable business environment. The country has a labor force of about 8 million individuals, with 70% of this being engaged in the agricultural sector of which 45% is engaged in subsistence agriculture (CIA, 2012; WB, 2013).The WB (2007) statistics show that more than 39.9% of the population is living in absolute poverty.

2.6 Cameroon Forest Resources

2.6.1 Extent of resources

The country occupies a land area of about 475.000km^2 of which 225,000km^2 are covered by the humid rainforest of about 21 million hectares; characterized by low to medium population density with relatively abundant agricultural lands (Burnham, cited in Samndong, 2009). The rain forests of Cameroon is endowed with a range of resources, namely; wildlife, timber and other forest products commonly referred to as non-timber forest products (NTFPs) (Jimmy, 2007). FAO (2001) defines NTFPs as goods derived from forests, other wooded lands and trees outside the forest which are of biological origin other than wood. Thus NTFPs can be of both plant and animal origin. From an estimated 3000 plant species identified in Cameroon, some 181 plant products can be termed NTFPs.

There is enormous literature on the extent of NTFPs in Cameroon. The NTFPs can be classified according to their uses as identified by Ingram and Schure (2010) as follows:

1. Using parts for food e.g. fruits such as *Irvingia gabonensis*; nuts such as Cola sp.; seeds such as *Ricinodendron heudelotii*; and animals ('bushmeat').
2. Using parts for medicine: Traditional medicines uses different parts of the plant such as the leaves, flowers, buds, roots, bark, sap, gums and resins, shoots, fruits and nuts as well as animal parts can also be used for medicines for example hair, bone, teeth (ITTO, (nd)).
3. Used for fuel and charcoal making.
4. Used for cultural purposes (both plant and animals).
5. Used for construction and for craftwork like rattan, bamboo, raffia etc.

Some Key plant NTFPs in Cameroon include:

Irvingia gabonensis (commonly called 'bush mango').

Irvingia is a genus of African and Southeast Asian trees commonly called wild or bush mango. In Cameroon, both the fruit and seed are used. The fleshy pulp of the fruit is eaten raw while the seeds are used for soups. A number of studies (ICRAF (1999), Nkwatoh (1998), Tchoundjeu et al. (2007), Tajoacha (2008), Ndoye et al. (1997, 1998), Clark et al. (2004)) have ranked bush mango number one in Cameroon in terms of its economic value. There are two species of bush mango; *Irvingia*

gabonensis and *Irvingia wombolu*. Bush mango is vastly used in the south west region of Cameroon as a thickening for soups.

*Gnetum spp***.**

Gnetum is another NTFP which is widely harvested and eaten in Cameroon. Two species exist in the country; *Gnetum africanum* and *Gnetum buchholzianum.* These evergreen, leafy vines grow across the Congo Basin in forest openings, secondary forest, fallow farmlands and, at times, in active mixed-crop farm holdings (Clark & Sunderland, 2004). These vines play vital roles in the livelihoods of farmers and those who trade in them (Ndoye & Awono, 2007). Large volumes of the *Gnetum* leaves are harvested each year for commercialization.

*Prunus africana (*Red Stink wood).

This is another important NTFP commonly found around the foot of Mount Fako. This resource has been exploited for its bark since 1980 (FAO, 2007). However, the plant can also be used for charcoal making, fuel-wood, pole for house construction and as electric poles. The bark of this resource is harvested mainly for commercial purpose and is exported dried, chipped or powdered to pharmaceutical industries at home and abroad to produce drugs used to treat benign prostate cancer.

Dacryodes edulis is an evergreen tree reaching a height of about 40m in the forest while in plantations it does not exceed 12m. *Dacryodes edulis* or safou is a fruit tree native to Africa and it is found in almost all the regions of Cameroon. The fruits

can be eaten raw, boiled or roasted while the seeds are eaten by household ruminant, sheep and goats.

Ricinodendron heudelotii is a native of Africa and it is a fast growing tree with straight stem growing to a height of 20-50m. The kernels are the edible parts of the plant with a high nutritive content. When the dried kernels are ground they are used as a flavoring agent in some West and Central African dishes.

Garcinia kola (Bitter Kola) is a native of Cameroon, Congo, Ghana, Benin, and Ivory Coast. In the S.W. Region of Cameroon, the main use for the species is for the comestible-medicinal seeds (Bitter cola), which is harvested sustainably from the fallen fruits. In some countries it is used as an alternative to a tooth brush (locally called chew stick). The seeds are marketed extensively by vendors all over at least the southern part of Cameroon (Cheek, 2004).

Many other plant NTFPs of importance are found in the country namely rattan, bamboo, Musa spp, cocoa, rubber, tea, and *Elaeis guineensis* (oil palm).

Animal NTFPs (‘bush meat’).

Animal NTFPs (bush meat) are a source of protein and income in Cameroon. Animal-based NTFPs include reptiles, wildlife, snails, termites, caterpillars, mushroom, fish, shrimps, crabs, and honey (from bees).

Although the country is endowed with these resources, the tropical forests containing these resources are declining at an alarming rate through conversion to agricultural lands, logging or other reasons outlined below.

2.6.2 Threats to resources

The forest resources in the country are under direct or indirect pressure from harvesters. The high value of the forest resources is causing the people to over-exploit the forest through activities like agriculture (both commercial and subsistence), fuel-wood collection, logging (both legal and illegal), and hunting. These activities among others are outlined below.

a) Deforestation

FAO (2010), states that between the years 2000 and 2010 about 13 million hectares of forests were lost globally each year through conversion to other uses or through natural causes. And Faure (1989) estimated that 200,000 hectares of forest in Cameroon are lost through agriculture, poorly managed logging, and desertification. Recent studies have shown that deforestation alone caused the loss of 18.1% of the forest cover (about 4,400,000 hectares) from 1990 -2010 (FAO, 2011). Deforestation in Cameroon is caused, to a greater extent, by illegal logging, which has become a great issue in the country (Alemagi and Kozak, 2010; Cerutti & Tacconi, 2009), caused mostly by corruption.

b) Agriculture

About 80% of the deforestation rates in Cameroon are due to agriculture (both commercial and subsistence) which is posing threats on natural resources. Slash and burn agriculture causes a significant portion of deforestation rate, given that the forest is cleared using fire. Since forests are important sites for terrestrial biodiversity, their

conversion to agricultural or less diverse forms of land use has potentially affected natural habitats of some organisms which in turn has directly influenced the ecosystem (Wilcoe, et al. 1986, Hudson, 1991, Forman &Gordon, 1989, cited in Samndong, 2009)

c) Wood collection for charcoal making and for fuel wood

This is also a great threat to the Cameroonian forest resources. Of the wood collected, just 20% is used to supply energy, and the remaining 80% is used for charcoal making and for cooking. This is because a majority of the population in rural areas uses firewood for cooking and for heating homes. Charcoal making is a good source of income so the people engage in its production.

d) Logging

Logging, especially illegal logging, poses a greater threat on the resources. Although logging provides socioeconomic benefits, regulatory frameworks do not properly regulate domestic timber production. For example, Cerutti et al. (2008) pointed out the weakness of Cameroonian legal framework in controlling logging by logging companies.

e) Over harvesting

Overharvesting is a common problem facing forest resources in Cameroon, for example in 1995 *Gnetum africanum* was declared as an endangered species by the Ministry of Environment and Forestry (MINEF, now MINFOF) (Fondoun & Tiki-Manga, 2000)**.** Not only are these resources overharvested, they are also

unsustainably harvested and these practices risk the extinction of many resources. Recently harvesters have to cover long distances in order to get these resources (plant and animals alike).

Other factors posing a threat on the resources include urbanization, demand for the commodity, poverty, and poor governance.

2.7 Contribution of forest resources to the Cameroonian economy/society

The Cameroonian economy is greatly reliant on the forest for timber exploitation as well as on NTFPs. The forest sector of Cameroon contributes to 6% of the Gross National Product and is the second largest source of export revenues after petroleum (de Wasseige et al. 2009). In fact the forest and its resources contribute to the overall economy of various forest zones in different ways for example employment, values generated through the processing and marketing of the forest products, direct consumption of forest products as food, energy and trade (FAO, 2007). Cameroon is one of the largest tropical wood producer and exporter, with a round wood production of about 3 million m^3, and round wood exports of 575,000 m^3 in 2000. Sawn wood export for that same year stood at 540,000 m^3 (FAO, 2003).

ITTO (2011), estimates on average the annual industrial round wood production to be 2.27 million m^3 between the years 2007–09, and the annual sawn wood production was 773 000 m^3 within the same period. In fact, timber is one of the country's main sources of income. For example, OFAC (2012) cited in Alemangi et al. (2012)

estimated that the country obtained total fiscal revenue of USD 37.8 million from the sale of timber in the year 2008.

Ngwasiri et al. estimated that 45,000 to 70,000 jobs are provided by the forest sector accounting to more than 10% of the country's GDP and 12% of its exports. The NTFP sector is also rapidly expanding, and these products are traded nationally or regionally with Nigeria. NTFPs like the bark of trees, bush meat, leaves of *Gnetum africanum* are collected from the forest and traded. The bark of *Prunus africana* is extracted and sold to pharmaceutical companies for processing to treat prostate related disorders in men (ITTO, 2009a).

A great proportion of the harvest and trade of NTFPs take place in the informal sector, and so no national statistics are actually available. However, Bokwe and Ngatoum, (1994) cited in Shiembo, (1999) estimated that 600 tons of the leaves of *Gnetum africanum* exported from the port of Idenau alone in the South West region in 1993 had a local market value of USD 3.8 million. Ingram (2009) stated that 15 NTFPs were estimated to have a market value of around USD 54 million in 2007-2008, and that the NTFPs sector employs about 58% of the people (Ingram, 2009a).

Today, the importance of NTFPs goes beyond the rural economy as these products are beginning to capture an increasingly significant share of world trade.

The Cameroonian forests play an important role in the social lives of the forest dependent population. Apart from harvesting and consuming the NTFPs like

bush meat, fruits, nuts and others, some of these NTFPs are used for medicinal purposes. Topa et al. (2009) estimated that forests directly provide about 8 million rural and Cameroonian poor with traditional medicines, food, domestic energy and construction materials; at the level of the household.

The creation of community forests also opened additional opportunities for forest-dependent communities to be engaged in forest products processing and forest management (Ngwasiri et al. 2002). Brown (2002) points out that the communities are estimated to earn up to 20 times more from the sale of sawn wood than from the sale of standing volumes to loggers.

Given the importance of the forest to the economic, social and spiritual life of the Cameroonian population, the creation of community forest was the best option to help save the rain forest from degradation and subsequent disappearance.

2.8 Community forestry in Cameroon

2.8.1 Historical Profile of Community forestry in Cameroon A number of laws were passed with respect to the creation of CFs in Cameroon. Box 1 shows the historical profile in the formation of CFs in Cameroon.

Box. 1 historical profile of CF in Cameroon

1990 Freedom of Association and Political Pluralism Laws were passed.

1992 Common Initiative Groups and Cooperatives (Rural Reform) Law were passed.

1993 Designing of Provisional zoning plan.

1994 New Forestry Law was passed.

1995 Implementing the Decree of the Forestry Law.

1996 Issuance of the Circular letter No 370/LC/Ministry of Environment and Forests (MINEF)/CAB on the CFA 1000/m3 tax.

1998 Signing of a Joint Order No. 000122/MINEFI/MINAT on annual forestry fees.

2001 Order No. 0518/MINEF was signed on the right of pre-emption

2002 Publication of a draft Community Forests Manual

2004/05 Suspension of many CFs by the MINEF, due to "poor management".

2009 Publication of the revised copy of Community Forest Manual.

Source: Oyono (2009)

The concepts of community forestry started in the mid 1970s to combat deforestation and forest degradation (Diaw et al. 1997)**.** Although the concept arrived in the 1970s, it was embraced in Cameroon only after the 1994 forestry law; the first in Central Africa (Beauchamp & Ingram, 2011), and Cameroon saw itself and was seen as the regional leader in SFM (Topa et al. 2009). Since then CF in Cameroon has been struggling to stand the test of time. Prior to the 1994 forestry law; local

communities had customary rights to forest resources, but there was no mechanism for legal claim of land. While driven in part by the Earth Summit of 1992 and the economic recession of the late 1980s which was brought about by a fall in commodity prices, the government of Cameroon initiated a number of forestry reforms among which was the 1994 forestry law (WRI, 2012). This law led to the creation of CF in an effort to achieve the goals of poverty alleviation and enhance the management and conservation of forest resources by the general population.

The first CF in Cameroon started in 1997 and by 2000 there were 82 CFs (Djeumo, 2001). According to the Ministry of Forestry and Wildlife (2010), 457 CFs were at some stage in the process of gaining CF status by mid-2010, although only 20% had actually gained full CF status.

2.8.2 Community forestry and Policies

According to FAO (2001, p13), a sound policy frame work should exist in written form and should explain how benefits should be distributed among actors and the public. It should also have the necessary fairness and stability for operating business in the medium and long term.

In order to contribute in poverty reduction, and to promote sustainable forest management, in 1994 the Cameroonian forestry law decentralized the management of the country's forest (Oyono et al. 2006, Oyono et al. 2007, Bigombe, 2003, Bigombe et al. 2005, Ezzine de Blas et al. 2011, Mandondo, 2003, Djeumo, 2001).

And as a strategic weapon, the Cameroonian government used the policy of decentralization to implement new codes of action to enhance socio-political regulation of forest management (Oyono, 2004). As defined by the forestry law, it is important that policy makers should demand that management committees be created, which are village-based, and with goals to enhance decentralization to village communities (Oyono, 2004).

Cameroon targeted forest management reforms with the help of the World Bank by improving forestry concession and taxation policies after the logging companies have unsustainably managed the forests (Brunner & Eboko, (2000) cited in Samndong, 2009).

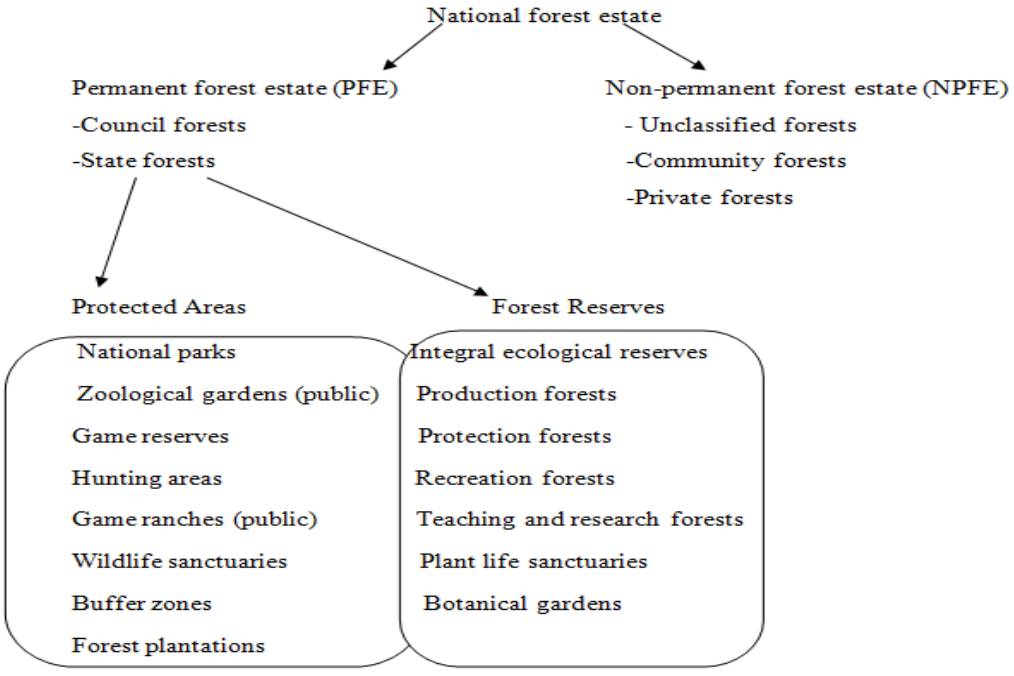
Within the 1994 forest law, was the zoning plan which divided the Cameroonian forest into the permanent forest estate (PFE) and the non-permanent forest estate (NPFE).Community forests are found within the NPFE, with each community forest covering a maximum of 5000 hectares of the total forest (Oyono, 2009, Topa et al. 2009, Ezzine de Blas et al. 2011, Mandondo, 2003, WRI, 2012). However, some communities occupy even smaller area; for instance, the Bimbia-Bonadikombo community forest occupies approximately 3735 hectares (Topa et al. 2009, BBCF management plan, 2001). By this law, communities were given the authority to manage the forest, with a 25 years management duration which can be renewed every five years by signing an agreement between the forestry administration and the village community (Oyono, 2009). This implies that the local

communities do not have ownership rights of the forest, which means therefore that both the PFE and the NPFE still belongs to the state.

Usually, in order to help many of the world's poorest people to meet their basic needs, it is necessary to strengthen the rights of local communities and their inhabitants to the land and forest resources on which they depend on (Sunderlin et al., 2008). And as long as their rights to forest use are restricted to use rights only, communities will continue to be at a legal and managerial disadvantage in managing forests effectively (Lawry et al., 2012).

The figure below shows the forest zoning system in Cameroon as defined by the 1994 Forestry Law.

Figure 2.1 Classification of the Cameroonian forest.



Source: WRI, 2012.

According to the zoning plan of 1994, the total permanent forest estate (PFE) covers an area of 18,024,536 hectares, of which 7,574,280 hectares are production forest. The total NPFE has an area of 4,475,437 hectares. Community forests occupy an area of 637, 000 hectares of the NPFE (Oyono, 2009).

2.8.3 Implementation of the concept of CF

The work of Djeumo (2001) states that CF being a new concept in Cameroon, the Cameroonian government had to negotiate the creation of the 'Community Forestry Development Project' (CFDP) with the assistance of the British Government, with objectives being:

1) To create a unit in charge of implementing community forestry within MINEF (now MINFOF), following the 1994 Forestry Law; 2) to study the legal and institutional framework of community forests; and 3) to increase public and institutional awareness in the management of forest resources at community levels.

The CFDP helped to outline the necessary steps involved in the establishment of a community forest. And this provided a very important and instrumental step in starting the community forestry process in Cameroon and also provided it with legal and administrative backing.

Djeumo also explained that in 1998, a community forestry unit (CFU) was formed under the ministry of Environment and Forests (MINEF), and it was set up to oversee the implementation of community forests at national level. His paper traces

the history of CFU and also examines some of the experience of the pioneer sets of applications for community forests establishment.

Still in 1998 a Manual of Procedures (MoP) for the Attribution and Norms for the Management, of Community Forests was published. This document carried the procedure of applying for and implementation of community forests (Mandondo, 2003, Ngwasiri et al. 2002) which became a legal instrument in 2003 (Beauchamp & Ingram, 2011). The MoP was revised in 2007 and 2009, and was finally published in 2009 ((Ministry of Forestry and Wildlife, 2009) and has been used since then. The work of Mandondo traces an elaborate and often tortuous process involved, usually beginning with consultation meetings before submission of the application to the Ministry of Forests and Wildlife (MINFOF). The application is also required to state the purpose for which the forests is intended for. It can be for production, protection, hunting or multiple purpose use.

After submission of the application, the second stage involves producing a CF Simple Management Plan (SMP). When the SMP is approved, a CF management convention (the final management agreement, FMA) is signed. This serves as the contract between the state and the community, and the official exploitation stage of the CF begins ((Beauchamp & Ingram, 2011). This gives the community the right to manage the forest, with a 25 years management duration which can be renewed after every five years by revising the SMP and signing an agreement between the forestry

administration and the village community (Oyono, 2009, WRI, 2012). By this law the local people manage the forest under the supervision of MINFOF officials.

Oyono (2009) identified five community rights to forests, these include; use right, which allows the community to gather non timber forest products, do hunting, fishing, agriculture for subsistence; access right, which allows the community access to community forests and the non permanent forest estate; management right, which allows them to exploit the community forest plot sustainably; exclusion right, which allows them to exclude members of other village communities from community forests; and trade right, which allows them to market the products from the exploitation of the community forest and to promote ecotourism.

2.9 The rural community's performance in forest management

The management committee formed as a part of the community forest management entity is responsible for the management and exploitation of community forests. The sub-sections below outline the role of the local people in the management of forest resources.

2.9.1 Organization

In Cameroon, communities do not have legal existence (Gaelle, 2013), thus in order for them to acquire a community forest it is mandatory that they identify themselves under a legal entity, referred to as a community forest management entity (CFME), which then forms a management committee involved in the direct management of the forest resources.

Thus in community forestry in Cameroon, the forest manager is the entity in charge of the management of the community forest.

Such an entity can be an association, a common initiative group (CIG), co-operative society or an economic interest group (EIG), (Community Forestry Manual, 2001, Djeumo, 2002). These legal entities were created to attain some specific objectives and in practice they are governed by different laws.

Mandondo (2003) explained that any legal entity is entitled to only one community forest, and membership for an entity can come from more than one village or settlement.

The BBCF is managed under the Bimbia-Bonadikombo Natural Resource Management Council (BBNRMC), and the responsibilities of the stakeholders in the use and management of the forest are summarized in Table 2.4.

Table 2.4 stakeholders of the BBCF and their responsibilities

Stakeholders(actors)	Responsibility
1.Bimbia Bonadikombo Natural Resource Management Council (BBNRMC)	Manages the BBCF; and has a Forest Management Officer who oversees everyday's activities.
2. Chiefs or Village heads	Give authority over all resources and land.
3. Forest User Groups(Includes all user groups; interested in access rights)	Participate in general assemblies of organizations; each user group has a representative on the Board
4. Women in communities	Interested in harvesting non-timber forest products and farmland
5. Elites	Interested in broad village development.
7. Ministry of Forests and Fauna (MINFOF)	To ensures SFM; by providing technical support; and resolving conflicts.
8. Municipal Authorities	Interested in contributions of community forest to development of municipality.
9. NGOs(not any more)	Provided support.

Source: Adapted from Minang et al. (2007).

2.9.2 Capability

Capability here means the potential or power for the communities to carry out their responsibilities. This capability can be in terms of accountability, conflict-resolution, technical skills and the capacity to be democratic leaders (Larson, nd) and managers. Larson, (2001b) explained that when the local people receive funding (from NGOs or the government) this can improve their potential since it can help them to hire well-trained personnel and even promote local projects. This simply means that the local communities need assistance from donors for them to function properly.

As it is the case, local communities in Cameroon lack technical capacity to manage their forest resources due to lack or limited training of community leaders by MINFOF. MINFOF supposedly is expected to provide technical support to communities in forestry activities, as stipulated by the community forestry policy. Unfortunately, this is not the case and as a result of this inadequate training, coupled with other shortcomings, the local people are not capable enough to carry out the managerial role because as managers they need to have technical skills as well.

2.9.3 Resources

- **Natural resources**

The rural people have been endowed with natural resources; the forest, water and land in the area in which their community forests are located. They can extract timber, NTFPs and market them as well. The only difficulty with the forest resource in this

area is that the number of people who depend on it is exceedingly more than what the resource can hold, with the consequences of over-exploitation.

- **Human capital/resources**

Daft and Marcic (2006) define human capital as "*the economic value of the knowledge, experience, skills, and capabilities of employees*".

As discussed early, the local people do not receive adequate training as concerns forest management and as such most of them have little knowledge about sustainable forest management techniques. This limited knowledge is evident in the way they use and manage the forest as well as how they perceive SFM.

For example, Minang et al. (2007) explained that in the BBCF, farming and illegal timber exploitation is accelerating deforestation and degradation, and that illegal harvesting of fuel wood has become very rampant.

- **Financial resources**

One of the problems the local people are facing is the lack of finances as documented by a number of researchers like Djeumo (2001) and Oyono (2000). This lack of finance has also made it difficult for proper monitoring of the activities going on in the forest because the equipments needed are lacking. Minang et al. (2007) described the deplorable condition of the BBCF office stating that it has limited space within the area where it is located, with only four computers in good state and a single digital filing system for all reports. And as such most of the reports are available only

in hard copies stacked on shelves. They went ahead to state that there is a hindrance to monitoring efforts due to the fact that there is just one motorbike, a few workers and limited finance to hire material resources.

2.9.4 Planning

As discussed earlier, the concept of project planning is very important in any project because it is the phase when the managers assess all the resources they will need, set objectives, prepare the plan of action and so on. As it is the case, one of the prerequisites in the formation of CFs is the preparation of a "Simple Management Plan" which must be approved by MINFOF, before being put into use. Thus the local people prepare the management plan of activities for their forest with set objectives. This is done during their committee meetings. In a community-based forest management plan, the development of the plan is often driven by the needs of the local people. The plan usually contains a series of items as summarized in box 2 below:

BOX 2: Content of a simple management plan

1. Background Information
2. Introduction
3. Description of the forest
4. Short- term and long- term objectives of the forest management plan
5. Forest management activities (protection, utilization, development and monitoring)
6. Collaborative monitoring and learning
7. Approval of plan

Source: adapted from Sola, 2001.

However, the process of completing this simple management plan is very slow because of the high cost involved in its preparation, resulting to the "hijacking" of community forests by "well to do" elites and logging companies who end up paying on behalf of the local people.

2.9.5 Implementation

A section of the forest stewardship council (FSC) standard for community forests and SLIMFs in Cameroon approved by FSC IC 01/12/10 states that a monitoring and control plan for activities to be carried out within the CF is available for the community members in partnership with stakeholders. This monitoring and assessment mechanism is drafted and implemented by the stakeholders in the CF and forest manager through operational discussion frameworks.

However, Oyono et al. (2007, box 3), citing Bigombé Logo (2003) pointed out that the way the management committees are organized (being chaired by mayors or their representatives), it leaves the village community representatives as mere observers. Because most of the decisions like the kind of project to be implemented, and the contractors to be hired are made by the mayors. And they take part neither in decision making nor in the implementation of projects.

2.9.6 Evaluation and monitoring

Reporting in the BBCF, are expected to be done monthly during their managerial board meetings while monitoring is done by the local people through patrols in the forest and illegal activities are then reported. However, this activity is not consistent

because at one point those who monitor the forest often abandon their responsibility due to the interference of some corrupt committee members (Minang et al. 2007).

2.10 Benefits from community forests

When people benefit from any conservation process they are motivated to ensure the sustainable management of the resource.

Benefits generated by CFs are seen in the form of greater opportunities of marketing forest resources such as NTFPs; providing healthcare services, schools, increased revenue for individuals involved in exploitation operations, providing electricity and portable water.

However, Gaelle (2013) explains that there is lack of accountability and transparency in CF management, making it difficult to obtain reliable figures on revenue generated by CFs. She further explained that the revenue generated by the community forests is not commensurate to the quality and quantity of socioeconomic benefits the villages concerned derive because funds are embezzled by committee members as a means to enrich themselves.

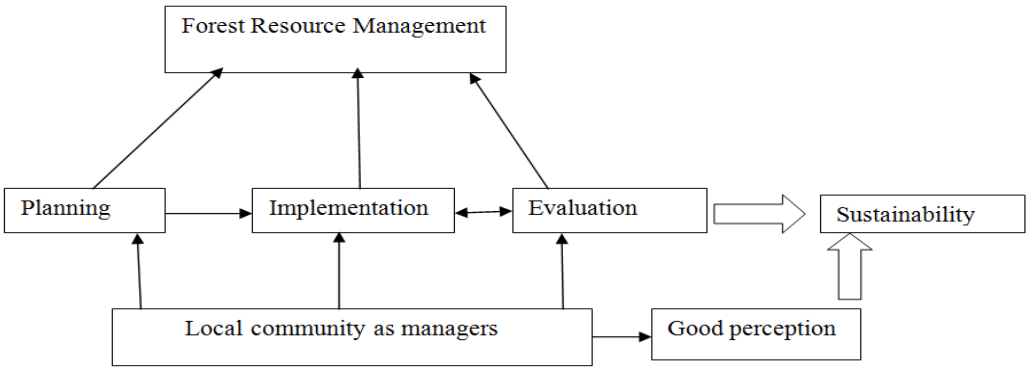
2.11 Some issues and problems of CF in Cameroon

The setting up of community forests in Cameroon is linked up with several difficulties. Literatures on community forests in Cameroon by researchers like Djeumo (2001), Brown and Schreckenberg, (2001), (Oyono, 2000) and others citing a number of problems like lack of responsibility of certain MINEF (now MINFOF)

field staff, creation of inappropriate Simple Management Plans and non-compliance by logging companies

2.12 Conceptual framework

Figure 2.2 Conceptual framework



Source: Author

The conceptual model of the study assumes that when local community forest managers make decisions, plan, implement and evaluate the projects very well by themselves, this will lead to forest sustainability because proper management of the forest is needed for its sustainability. Managing by themselves is necessary since they are the direct users and know exactly what their problems are and what they need.

The model also assumes that there is a correlation between forest sustainability and the way SFM is perceived. If they have a good perception of the process they will be able to sustain it, and vice versa. Thus as managers the local people should have a clear (good) perception of the resource they are managing as this will increase the resource sustainability.

2.13 Chapter Summary

This chapter summarized some of the literature, concepts, theories and important terminologies used in SFM.

For SFM to be successful there was a shift in forest management leading to the creating of community forestry by many countries through decentralization of forest management by giving the local people the opportunity to be actively involved in the management process of these forest resources. Many countries have recorded positive results through allowing the local people to manage the forest, while in other countries decentralization process is still not practical.

Thereafter, the chapter also highlighted management and participation theories so as to form the basis for judging whether the local people are managers (in which case will perform the functions of a manager in planning, implementation and evaluation) of the resources or participants.

Two countries which have recorded good results in the field of community forestry were examined and some lessons were drawn from their experiences. Then the case of Cameroon was presented describing the issues concerning the forestry sector and community forestry in particular, some policies, local people' performance in SFM and some challenges face.

Finally, the chapter also presented the conceptual framework of the research. The next section will be explaining the method and materials used in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

This research is a study based on observable realities of outcomes from natural and man induced activities rather than intuitive speculations without evidence (Leavelle, 1942). The study examined the Cameroonian forest vis-à-vis the activities orchestrated by the local communities, in order to determined pointer information regarding the degree of its sustainability.

The research design is a cross sectional survey which made use of structured and likert-scaled-type questionnaires for the collection of primary data, and in addition to these, a quantitative semi-structured or open-ended question which gather information from principal actors within the forestry organization in Cameroon alongside some village custodian. Both types of questionnaires addressed issues of sustainability, thus gave insight information which were used to validate the reliability of the study.

Simple descriptive statistics were employed to analyze the data, and based on past proven outcomes from countries of same or similar situations, feedback lessons were drawn and recommendations were established.

3.1 Research design

The research is a descriptive study using a quantitative cross sectional design (that is, respondents were examined once and at a single point in time). Since this study examined the knowledge and behavior (in this case, the activities) of individuals within the community forest locality, imploring quantitative analysis becomes suitable as it determines *numeric measures of observations, and by studying the human activities it becomes necessary in establishing facts (*Creswell, 2003). *Furthermore, using a simple numerical method exposes the most probable co-variation among variables and the subject been studied, in an extensive pattern among many cases* (Riley et al. 2000).

The descriptive research design was adapted to provide information to the institutions concerned regarding the rural community's role, knowledge and awareness on sustainable forest management as custodian of this forest, in relation to other factors such as socio-economic characteristics. It also explored perception from which implied extrapolations could be established regarding issues of concern about the environment (forest) and its sustainability.

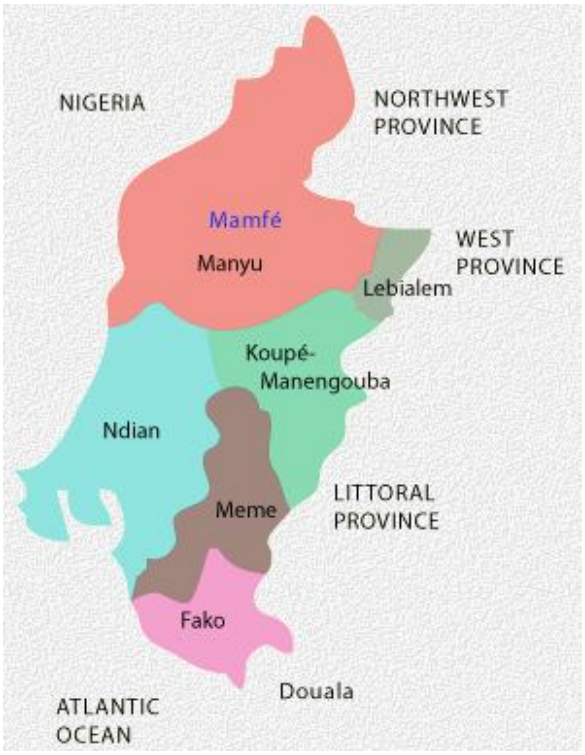
The responses gathered through the survey immediately addressed the research questions by providing numeric information on local community`s role and perception regarding sustainable forest management.

The attitude of respondents was also under scrutiny pertaining to the way each question was answered as well as their impression regarding cooperation with supporting organizations if at all any was available.

3.2 Study area

This research was conducted in Fako division, which belongs to the South West Region of Cameroon. The division occupies a total area of 2,093 km² with a total population of 534,854 inhabitants, according to the 2001 census.

Figure 3.1: Map of the South West Region of Cameroon



Source: MACEFCOOP, Cameroon

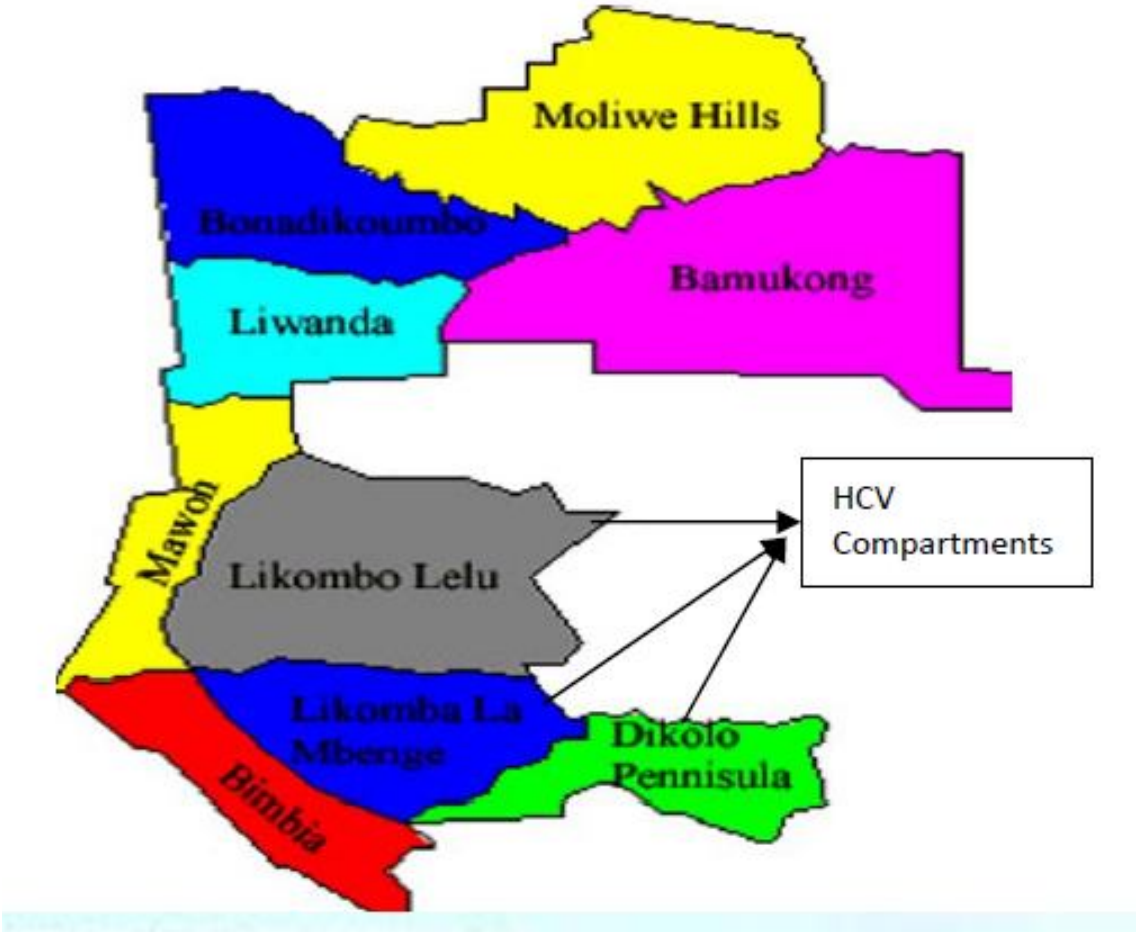
The research was limited to the Bimbia-Bonadikombo community forest (BBCF) of which represents the activities that occur in a typical community forest in Cameroon, and also because the forest is threatened due to easy accessibility and community's total dependence on it. The BBCF is located in Limbe sub-division (in Fako Division). BBCF is situated in the eastern part of Limbe town with easy access through 'down beach' either by using a bike or car. It is bordered to the north by Mandolin, through mile four and Tomaton behind Moliwe CDC palms plantations. It then stretches from the Ombe River through Camp 3 and two CDC rubber plantations to the road. In the South it is bordered by the Atlantic Ocean and to the east the forest is bordered by the road to Bimbia, Mabeta and Jamstone River (Simple management plan for BBCF, 2001).

BBCF was created in the year 2000, covering an area of 3,735 hectares (BBCF Management plan, 2001), with a tripartite partnership between the local communities, the government of Cameroon and the Mount Cameroon Project (MCP). The MCP acted as the facilitator for two years (2000-2002). Since 2002 after the end of the MCP partnership, the forest is now managed under the custody of the Bimbia-Bonadikombo Natural Resource Management Council, BBNRMC (Njweng, 2009).

To ease the management purposes, BBCF is divided into nine compartments; Dikolo Peninsular (250ha), Likomba la Mbenge (334 ha), Likomba la Lelu (645 ha), Bimbia (252 ha), Mawoh/Motondo (229 ha), Liwanda (286 ha), Bamukong (741 ha),

Moliwe Hills (565 ha) and Bonadikombo (400 ha), (Njweng, 2009; BBCF Management plan, 2001).

Figure 3.2: Map of the BBCF also showing the compartments of high conservation value (HCV).



Source: National Initiative Cameroon: Biodiversity Management Plans of HCV Bimbia-Bonadikombo Community Forest (BBCF), (nd). www.fsc.org.

The general objectives of the BBCF are to restore and maintain biological diversity, and at the same time to upgrade the livelihood of the local people (BBNRMC, 2001). However, each compartment has its own objectives and carries out its own activities based on the natural resources present in the particular compartment as outlined below:

Table 3.1 BBCF compartments and their specific uses

Compartments	**Main use(s)**
Dikolo Peninsular	Ecotourism and research
Likomba La Mbenge and Likomba La-lelu	Research and beekeeping
Bimbia	Beekeeping and commercial fuel-wood extraction
Mawoh/Motondo	Charcoal burning and commercial fuelwood extraction
Liwanda	Commercial fuelwood extraction
Bamukong, Moliwe Hills and Bonadikombo	Timber exploitation and bee farming

The area is inhabited by a heterogeneous population as a result of a variety of groups of people from different tribes that live there, with diverse economic activities (Njweng, 2009). The reason for this diversity is due to the fact that the Cameroon Development Corporation (CDC), located in this area is an agricultural corporation

providing a large number of job opportunities to the general public and this has brought people from different parts of the country to settle.

The inhabitants of the BBCF are involved in a variety of activities such as farming, fishing, timber exploitation, fuel wood collection; bee farming etc. The forest is also used to perform some traditional rites. Six vegetation types can be found in the BBCF namely; mangrove, fresh water swamp forest, littoral vegetation, coastal bar forest, lowland forest and fresh water ecosystems**.**

This diversity in vegetation types accounts for the high diversity in plant species present in the BBCF.

This community forest was selected as the study area because it is easily accessible, highly diverse and also experiences high pressure from the general public, which is already forcing some of the plants and animals to extinction.

3.3 Sampling technique

The South West region is constituted of 13 community forests. This study was restricted to the Bimbia-Bonadikombo community forest for reasons being that, it represents a forest typical of which is been over exploited and which also harbors most of the endangered species among other reasons.

Given that the Bimbia-Bonadikombo community forest consists of 9 compartments, cluster sampling technique was conducted in order to select 5 compartments, which represent all the activities taking place in the forest.

Due to the fact that these localities have a different characteristic population size, a sampling ratio was determined which represented the proportion of the number of respondents for the survey. The subjects all came from the selected local forest communities such that misrepresentations with regards to bias in information dissemination are avoided.

Furthermore, a simple random sampling was done in each of the 5 selected compartments to decide on the direction of movement within the villages (by spinning a bottle), through which respondents were met, this was also done to avoid bias.

3.4 Subjects of research

- **Target population:** The targeted population was Bimbia-Bonadikombo community forest inhabitants (mainly the household heads or individuals who are bread winners within the family) whose occupation solely or partly centered in the utilization of the forest and who were members of the community forest.
- **Study population:** The study population involved rural community forest inhabitants within the forest regions of Cameroon.
- **Sample population:** A total of 200 respondents were targeted for the survey process. 41 (Table 3.2) of these encounters were cooperative and the respondents showed their consent and support to share as much information as possible, while the other respondents were un-willing to participate for

fear of identification because of political reasons. Others claimed it was a waste of time because they've had previous encounters and no solution was sort. These were some of the major hindrances encountered during the data collection process to some extent.

Table 3.2 Compartments sampled with representative respondents

Compartments	Male	Female	Age
Bonadikombo	6	4	31-≥51
Bimbia	6	4	31-≥51
Mawoh/Motondo	5	3	31-≥51
Dikolo Peninsular	5	2	31-≥51
Liwanda	5	1	31-≥51
	27	14	

Since the study targeted Bimbia-Bonadikombo community forest inhabitants whose occupation solely or partly centered on the utilization of the forest, some criteria for recruiting and selecting the subjects of the research were established.

- **Inclusion criteria**: Household heads or individuals who are bread winners within the family and also mature enough to fend for themselves or on behalf of the family. Household heads were giving first priority; otherwise, any other eligible individual was issued the structured questionnaires translated in the local language.

- **Exclusion criteria**: Family members who were not legally mature enough or who had not attained the legal working age were excluded. This study centered on

investigating the role of the local community on SFM, thus, exclusion criteria was also met for households or individuals whose activities were seldom in the forest, and also restriction was established for residents who weren`t permanent inhabitants of the selected community forest.

3.5. Data collection tools and techniques

3.5.1 Questionnaire design

The questionnaire was modified from a model questionnaire on sustainable forest management (Samndong, 2009), in this case, to suit the purpose of this research so as to provide reliable answers. In this study, a structured, likert-type and closed ended questions questionnaire was designed. It was divided into six parts, with each addressing various issues.

- The first section of the questionnaire is on the socio-economic status of the households or individuals (i.e. household size, level of educational, marital status, occupation, and housing type).
- The second part involved questions regarding the various practices or activities of respondents showing their dependence on the forest irrespective of their knowledge and understanding of the implications of their act.
- The third part mainly examined respondents' general knowledge and awareness on issues of sustainable forest management, and how they perceive and regard this policy (SFM) in terms of whether the initiative is worthwhile

implementing (in which case beneficial in order to sustain endangered species) or disregarded (in which case, un-important without alternative means of livelihood).

- Part 4 addresses issues of respondents' role in sustainable forest management if at all they had regard for it (SFM). Basically, respondents were assessed from the stand point of whether they were making decisions before major actions or initiatives were implemented on their community forest.
- Part 5 and 6 examined questions involving the benefits which are obtained from community forests and the challenges encountered that impacted or impaired their role in management as major users of the forest, (appendix 1).

Awareness of SFM was defined based on the sensitization from Forestry ministry/NGOs/ delivery packages from the authorities that be, acquired knowledge from other media and also from common traditional concepts on how the forests could remain home to thousands of organisms.

3.5.2 **The data collection process**

- The data collection process involved mainly 3 stages: formulation of the questionnaire, recruiting and training of some former working colleagues who assisted in the data collection process. The cross sectional design targeted respondents who were permanent residents within the Bimbia-Bonadikombo community forest setting, and whose occupation solely or partly centered in the utilization and management of the forest, to avoid the

concept or misrepresentation on how community forests has been utilized and managed. Survey was used as the method of constructing primary data because:

- There was availability of former working colleagues who volunteered their services. They were familiar with most of the terminologies used in the context of environmental issues which made the training much easier and facilitated the process. This study took place during the months of July and August, (July, 24th - August, 30th, 2013) when junior and secondary academic institutions in Cameroon were on vacation. This gave enough time to recruit former colleagues who helped in carrying out the survey.
- Based on advice from some experts on village settings, questionnaires were made so that the questions would be understood by the respondents. Translation to their local languages (Pidgin English) and interpretation was carried out by the author and those who assisted in the survey.
- Furthermore, these encounters also allowed the opportunity of the researcher to ask respondents` thoughts regarding any other issue of environmental concern.

The survey encounters were carried out in the evening (between 4pm to 6pm) when the majority of the respondents were expected to have been back from their daily activities. The survey always started with the researcher introducing herself and those who assisted in data collection, and also by stating the objective of the study.

Cooperation of the respondents to answer the questions administered was optional. If the respondents gave their full consent to participate in the research, they were considered subjects of the study. An estimated average of 20 minutes was used for each respondent.

3.6. Data processing and analysis (descriptive)

The study principally used structured and likert scaled questionnaires which sort precise measurements such that analyzing the data would produce objective results. Microsoft Excel Software was used to process the data extracted from the questionnaires after being carefully sorted and coded.

This data was then used to generate simple descriptive information such as percentages and frequencies. Contingency tables and charts were developed from the sorted data.

CHAPTER FOUR

FINDINGS AND DISCUSSION

This section presents the findings from the data gathered from the respondents. The findings are described so as to provide simple basic inferential conclusions, of the population from a representative sample data. The socio-demographic and socio-economic characteristics of the respondents were also examined and described.

Result of the descriptive analysis was expressed in percentages, tables and graphs.

4.1 Socio-demographic and socio economic characteristics of respondents

Here, the socio-demographic and socio-economic characteristics of the sample were studied. In order to understand the role of the rural communities in SFM in Cameroon, it was important to understand the demographic characteristics such as, household size, monthly income, marital status, education, occupation, and housing type within rural communities of the country.

4.1.1 Age of respondents

For this study to determine the information regarding the group of individuals actively involved in using the forest, the age range of the respondents was examined. From Table 4.1, the age group that is mostly involved in using the forest is 41 to 50 years. Out of the 41 respondents, 22 (54%) are within the age group of 41-50 years. This result is supportive of the research of Young, L. (2008), stating that in most of

the countries she researched on, many of the agricultural organization were being run by people of ages 50 and above.

As further indicated by one prominent respondent "*most of the people of the ages below 40 are still in school. I know they will join us in the farm when they finish school because there is no job.* "

Table 4.1 Ages of respondents

Age (years)	**Respondents (N=41)**	**Percentage %**
20-30	0	0
31-40	10	24
41-50	22	54
51 and above	09	22

4.1.2 Marital status and Number of dependents of the respondents

In order to determine the household burden and family responsibility of respondents living in the community forest locality, and to envisage their degree of dependence on forest resources the marital status and number of dependents of the respondents were examined. Table 4.2 shows that 76% of the respondents are married as opposed to 24% (widow and unmarried inclusive) single.

Also, 61% had dependents ranging from 1 to 4 individuals; (32%) between 5 to 8 and (7%) for 9 dependents and above. The average number of dependents in most households ranged from 1 to 8, characteristic of a typical African family (Uche, 1972). The large households, for individuals with no alternative source of livelihood turn to rely on the forest more thereby exerting much pressure on the resources. As illustrated by the work of Oden and Sapkota (2008), high dependence of the poor on the forest, coupled with their large population size in the region may possibly lead to forest degradation in future.

Table 4.2 Marital status and Number of dependents of the respondents

Marital status	**Number**	**Percentage (%)**
Married	31	76
Single	03	07
Divorced	01	02
Widow/widower	06	15
Number of dependents of the respondents (household size)		
Between 1-4	25	61
Between 5- 8	13	32
9 and above	03	07

4.1.3 Respondents' Educational Level

It was pertinent to examine the level of education of the respondents in order to examine the effects of understanding the role of these people in SFM in Cameroon. Scholars seemed to have defined education in various ways. Some schools of thought explain that education can only be acquired or learned through formal means such as learning in school.

However, it can be established that education is achieved in various forms depending on an individuals' mind, character or physical abilities. Giving the vast ways in which education can be achieved, and considering the difficulties in identifying these vast forms among the community people, this study was limited in considering only the level of formal education as a pointer informant as to the effect it has on SFM.

Table 4.3 shows that 56% of respondents had their highest education at the primary school level, 24% with no formal education, 10% at the secondary level, and 10% at the High School level.

Table 4.3 Highest qualification of respondents

Level of education	**Number of respondents**	**Percentage (%)**
No formal education	10	24
Primary school	23	56
Secondary school	04	10
High school	04	10

4.1.4 Respondent's occupational status

Occupation was limited to four major categories; housewife (those involved in household management), farmer (includes hunting, collection of fuel wood etc), trader and others. The term, others, included some occupations which were not listed in the questionnaire. It was found that (Table 4.4) a majority, 78% of the respondents were farmers, 10% were housewives, and 10% were involved in other activities and 2% involved in petty trading. Examining the occupation of the respondent was necessary so as to identify if the respondents' had alternative livelihood sources or were solely dependent on the forest for their survival. And the result indicates that a majority of the respondents are only dependent on the forest with no alternative sources of livelihood.

Table 4.4 Respondents' occupation

Occupation	**Number**	**Percentage (%)**
Housewife	04	10
Farmer	32	78
Trader	01	02
Others	04	10

4.1.5 Approximate monthly household income in US Dollars

It was necessary to examine the household income so as to access how dependent the respondents are on forest resources. As seen in Table 4.5, a majority of the respondents earn below USD 200. 32% of the respondents earn less than USD 60; 56% earn between USD 62 - 120; 7% between USD 122- 200; 2% between USD 200-300 and 2% earn USD 300 and more. From the table, the monthly income of approximately 88% of the respondents was less than USD 200. This is also been shown that about 48% of the country's population lives below the poverty line, with the majority living in rural areas (CIA, 2012). The distribution of respondents' monthly income consistently decreases as the income range increases, and as such the people turn to depend on the forest more since their monthly income from other sources cannot sustain them. Depending greatly on the forest will require that the forest is sustainably managed, the reason why those who depend should be the managers of forests.

Table 4.5 Approximate household income in US Dollars of respondents

Income range (in USD)	Number	Percentage (%)
Below 60	13	32
62-120	23	56
122-200	03	07
200-300	01	02
300 and above	01	02

4.1.6 Construction materials on the walls of respondents' houses

The distribution of housing type was as shown in Table 4.6: 17 % of the respondents live in cement block houses while 83% of the respondents live in houses made of wood or plank.

It was necessary to consider the construction material of the respondents' houses so as to assess their dependence on the forest for house construction. The result shows that more people live in plank houses; suggestive of the fact that more of the wood for constructing the houses will be extracted from the forest with the consequences of deforestation and degradation. As illustrated by Wunder, S. (1996), commercial exploitation of wood is frequently depicted as a main cause of deforestation.

Table 4.6 Construction materials on the walls of houses of respondents

Materials on walls	**Number**	**Percentage (%)**
Fire bricks	0	0
Stones	0	0
Cement	07	17
Wood	34	83

4.2 Community's role in forest management

The community's role in SFM is centered either as managers or participants. If their role is managerial, it is assumed that the local people should have a clear understanding (knowledge, and perception) of the resource they are managing as well as the management process, otherwise as participants their role in SFM might be limited regarding their overall management skills.

To assess the community's role in SFM, a range of questions were asked so as to determine if they are managers in SFM or participants. And it was assumed that as managers they will have skills in decision making, hence capable of conducting planning, implementation and evaluation of projects. However, the results in Table 4.7 reveal that they are not the actual managers but the participants.

Based on respondents' role in SFM, of the 41 respondents surveyed, 56% agreed that they are managers in SFM; 2% strongly agreed; 7% neutral; 29% disagreed being managers in SFM, and 5% strongly disagreed as shown in the Table 4.7. At first glance, this result shows that more than 50% of the people are managers in SFM. However, when asked what they do as managers, they responded that by attending meetings they consider themselves the managers. Whereas meetings are just forums where they are informed of what will happen, where the flow of information in this case is one-way, from officials to the community and the community is not allowed to give their opinion. This is contrary to the ideal situation

presented by Arnstein (2004) which encourages a two-way flow of information where there must be provision for the citizens to give their own feedbacks.

It is evident that a majority of the people are only informed of what has happened. Up to 73% of respondents acknowledged that they are only being informed of what had already been decided; while 20% said they are not even informed at all and 7% remained neutral. As pointed out by Lewis (2007), *"a manager is one who does what needs to be done for the good of the organization and does not wait to be told to do it"*, and has been designated with the responsibility of performing a managerial task or activity. In this community, the members are informed of what has been decided. The question now is if the people are only informed of what will happen, who then makes the decisions and other managerial functions if not the community? This is indicative that some external bodies are the decision makers and managers of the forest not the communities. If the community has been entrusted with that resource to manage they should also be entrusted with the authority and power to manage it, to be allowed to decide things for themselves.

Table 4.7 shows that a majority of the local people do not implement projects. Just a total of 10% of the respondents acknowledged that they implement projects, as opposed to a total of 85% who do not, while 5% where neutral. Project implementation is one of the functions of a manager and it is during this phase that theory is translated into the actions, and requires leadership and motivation which will inspire and generate personal encouragement and lead to positive outcomes Mark

(2006). During implementation there is capacity building when the locals are trained so as to acquire the necessary skills they will need for proper management. However, a majority of the local people are ignorant of this function. Some respondents even said that from time to time they see some 'strange people' in their forest carrying out some activities without them knowing who they were or what they are doing in their forest. If the locals are not allowed to implement projects they will lack the necessary skills needed for SFM which could have been acquired through the training process as it will go a long way to ensure the sustainable management of the resource. As shown from the result only a minority of the local people implement projects.

With regards to decision making, of the 41 respondents involved, only 6(15%) acknowledged that they are decision makers; while 32 (78%) said they are not the decision makers and 3(7%) were neutral (Table 4.7). From this result it is evident that a majority of the respondents are not decision makers. As pointed out by Arnstein (2004), decision making is the level in which the citizens are considered to have achieved dominant authority and genuine managerial powers. Likewise Daft and Marcic (2006) indicated that decision making is the process where problems and opportunities are identified and resolved, requiring effort before and after the actual choice. This is why it is important that those who use the resource should make decisions concerning their resource because they know their immediate problems and from there can make the choice from available alternatives.

Also as noted by Daft and Marcic (2006), effective decision making often depends on whether the right people are involved in the right ways in helping solve problems. If the right people (those who know the problem and capable of providing solutions) are involved, better decisions are likely to be made. However, this is not to rule out the role of external bodies completely; the issue is that the locals should be allowed to decide for themselves while the external bodies can support them technically or otherwise. Just as suggested by the Vroom-Jago Model (1988) of leader participation styles, the external bodies can 'delegate' the locals to make decisions within prescribed limits, or they present the problem to the locals in a meeting while they act as facilitators by describing the problem to be solved and the boundary within which the problem must be solved. This will give the locals the opportunity to make decisions concerning their resource with the help of external bodies.

From Table 4.7, 10% of the people acknowledged that they monitor and evaluate projects; while 73% of them said they do not monitor nor evaluate projects and 17% were "neutral".

As discussed earlier, project evaluation is necessary to assess the results achieved during the whole implementation process, and also to compare if achieved results are in line with the set objectives of the project, for correction mechanisms to be put in place. The survey reveals that a majority of the people do not monitor the activities in their forest. If the activities of the forest are not monitored it might be indicative that

the forest is not properly managed, otherwise monitoring is necessary.

As stated by Lewis (2007) monitoring and evaluation give the manager an idea on how the project should proceed based on management decisions for positive outcomes. It is during this phase of a project that the decision makers gather information that tells them how well the decision was implemented and if it achieved its goals. The feedback will determine whether new decisions need to be made or not (Daft and Marcic, 2006). Thus if the locals are managers, it necessary that monitoring and evaluation of the activities in the forest should be done by them to ensure better management of the resource since they live close to the resource. However, the few respondents who acknowledged monitoring stated that it is very erratic and usually not planned.

Of the 41 respondents who were surveyed, only 1 (2%) of them "agreed" to be involved in joint analysis (partnership); while 34 (83%) said they are not involved in joint analysis; and 7 (15%) were neutral (Table 4.7). Arnstein (2004) stated that joint analysis is important because there is redistribution of power between the citizens and the power holders. And during joint analysis the citizens become the decision makers, policy formulators, planners, implementers and actual managers of the projects in their community. This is necessary because the communities know their priority needs and the decisions will be geared towards meeting their needs. But when external bodies are the only decision makers, positive outcomes cannot be achieved. Likewise Pretty and Pimbert (1994) also emphasized on the importance

of joint analysis in the development of action plans, formation of new local institutions or strengthening of existing ones necessary for resources management. As the result shows, only 2% of the respondents acknowledged their involvement in joint analysis as opposed to 83% who do not.

In the study of Barry et al. (2010) on how Sustainable forest management can be used to combat climate change, it was illustrated that the Mexican Community Forest Management (CFM) Model led to an increase in carbon stock as well as a reduction in forest degradation and deforestation. The reason behind this positive result is that the Mexican communities exercised full range of managerial and formal rights over forests and their resources, the government only provided supportive programs and the community members were allowed to use their initiative to plan, implement and evaluate the projects themselves. This is an example of a community acting as managers of the forest. When compared to the Cameroonian case we find a big difference. Cameroonian communities are not allowed to exercise their managerial functions; instead they act as observers since they are only informed of what has been decided.

Thus based on these results (Table 4.7), the local people's role as managers in SFM is very limited as a majority does not perform the functions of managers. This is supportive of the study by Oyono et al. (2007), which stated that some of the management committees are being chaired by mayors who make all the decisions and

implementation of the activities in the CF, while local community's representatives act as observers. Hence the communities are participants in SFM and not managers.

On account that the local people are not allowed to perform their managerial role in SFM, the forest is not sustainably managed (Table 4.18). This is because they are not the decision makers concerning the resource, although they are the direct users and also know the priority needs of the resource which needs to be addressed. Oyono (2009) pointed that the local people have use right, access right, management and exclusion rights (which makes them proprietors of the community forest as classified by Schlager & Ostrom (1992)). With these rights the local people have the authority to determine how, when, and where harvesting from a resource may occur, and whether and how the structure of the resource may be changed" (Schlager & Ostrom, 1992). When the harvest of a resource is controlled, the resource will be sustained unlike when harvesting is not regulated. However, this is not the case with the CF in question where the local people are not allowed to exercise their management right over their forest leading to the unsustainable use of the resource.

Table 4. 7 Respondents' role in forest management

Indicators	**Strongly agree**	**agree**	**neutral**	**disagree**	**Strongly disagree**
As managers in SFM	1(2%)	23(56%)	3(7%)	12(29%)	2(5%)
Being informed of what has been decided upon	6(17%)	24(59%)	3(7%)	6(17%)	2(5%)
Project implementation	2(5%)	2(5%)	2(5%)	25(61%)	10(24%)
Sharing information to researchers	3(7)	38(93%)	(0%)	(0%)	(0%)
Decision making	1(2%)	5(12%)	3(7%)	14(34%)	18(44%)
Evaluation/ monitoring	(0%)	4(10%)	7(17%)	22(54%)	8(20%)
Participating in joint analysis(partnership)	(0%)	1(2%)	6(17%)	27(66%)	7(17%)

The role of local community in SFM is summarized in the table below based on their managerial functions. Using information gathered from some informal discussions during the field work and from the responses provided on the questionnaires, the managerial functions were classified as high, moderate and low. Where their managerial function had responses of 70% and above, it was considered high, responses between 50-69% were considered moderate, and responses below 50% were considered low.

Table 4.8 Summary of community's role in SFM.

Managerial functions	Function breakdown	Local community	Remarks
Organization		-High (must be organized to obtain a to qualify to apply for a CF)	They are organized under legally identified entities, with a management committee to oversee the activities. Remark high organization.
Planning	-Decision making -Setting objectives -Preparing action plan -Attending meetings	- Low - Moderate (in the action plan) -High (it is a requirement of obtaining a CF) -Moderate	Decision making is low because only a few make decisions. They prepare the action plan containing the objectives and most of them attend meetings. General remark on planning is moderate.

Implementation	-Logistics -Tactics	- Lack resources -Low	General lack of resources; human, finance and technical, the skills needed for proper implementation are lacking. General remark; low
Evaluation	- Reporting - Monitoring	-Low -Low	Not regular but usually done annually, review is done after five years. -Monitoring done by erratic patrols, usually because there is some alleged illegal activity in the forest. Not planned. Remark; low

4.3 Community's dependence on forest resources

The types of activities carried out in the forest were examined for two reasons 1) to find out how dependent the community is on forest resources, and 2) to assess the impacts of these activities on the state of the forest if not sustainably managed. Considering the major forest activities usually carried out in most forest settings, the distribution of responses for the principal activities as shown in this study include; farming (100%); followed by collection of fuel wood (90%); hunting (76%); logging (68%) and fishing (44%) in that order (Multiple answers provided).

Table 4.9 Activities carried out in the community forest.

Activities	**Respondents (N=41)**	**Percentage%**
Farming	41	100
Collection of fuel wood	37	90
Hunting	31	76
Logging	28	68
Fishing	18	44

4.3.1 Farming

Among the activities carried out in the community forest, farming is the major activity that the residents are involved in. As illustrated in Table 4.9, 41 respondents out of 41 (100%) acknowledged that their main activity in the forest is farming.

Given that the majority of the rural areas lack alternative livelihood, most of their activities are centered on agriculture. This high dependence on the forest is also illustrated by CIA (2012) that about 70% of the Cameroonian population is engaged in the agricultural sector.

Although this farming is mainly for subsistence**,** slash and burn is the common practice accounting for about two thirds deforestation FRA, FAO (2010). This is because these fires usually get out of control and can damage even areas which were not intended to be burnt. Sanchez et al. (2005) and Geist and Lambin (2002) pointed out that this kind of deforestation is caused by poor farmers who have limited resources and so have to move to other pieces of land to grow food in order to earn a living. These farmers also practice shifting cultivation which may be due to loss of nutrients in a particular soil and lack the resources needed to increase crop productivity (Palm et al. 2010) thereby increasing areas of deforested land.

4.3.2 **Fuel wood collection**

Table 4.9 shows that collection of fuel wood was another major activity of great importance, as 37 out of the 41 respondents acknowledged that they were involved in collection of fuel wood from the forest (90%). According to the respondents, the wood collected is used as fuel for cooking; heating homes, and as a source of light, just to name a few. Since most of the people in rural areas are poor or living below the poverty line, they can hardly afford for electric or gas stoves, thus,

they rely greatly on wood for meeting their needs. Also most of the rural areas in Cameroon lack electricity, hence heating homes and lighting is from wood.

The wood is also used for making charcoal (the charcoal is then sold to earn some money) and construction of homes. This is in conformity with FAO (2009) report stating that wood products from tropical countries are used as fuel (between 40 and 80%), and about 80% of the collected wood in Africa is used for fuel wood and for charcoal making. Collection of fuel wood can also be a major driver of deforestation at local level (FAO, 2010) and thus may affect the health of the forest if harvesting is not sustainable.

4.3.3 **Hunting**

Table 4.9 shows that 31 (76%) respondents were actively or passively involved in hunting which also represented another major activity that aided their livelihood in the forest community. According to the respondents, the reasons for the increase in bush meat hunting include increasing consumer demand due to population growth; easy access to the forest due to logging roads; and due to poverty in rural areas and a lack of alternative rural livelihoods.

Unlike farming which is often carried out for local consumption, hunting is usually done for both local consumption and for trade. The size of trade is becoming very substantial which can lead to unsustainable harvesting. For example, the Biodiversity Management Plans of HCV Bimbia-Bonadikombo Community Forest

(BBCF) has identified some animal species as endangered and threatened at both the national and local levels due to overhunting (overharvesting).

Some of the hunters when asked said that *"with hunting they are sure to have easy cash and it's a steady source of income"*. This was also illustrated by Solly (2001) in the Dja Reserve in south-west Cameroon, where he found that many young men show preference for hunting as a source of livelihood to cocoa farming, although the average income from cocoa farming (USD190/yr)is higher than that of hunting (USD106 /yr); for the same reason of having easy and fast 'cash'.

Type of animals hunted

It was necessary to examine the type of animals hunted so as to identify those that are threatened or endangered as this will provide the managers with information on which animals should be harvested or not. It should be noted that though 7 of respondents principal activity was hunting, 30 of them were involved in the activity either passively or actively. 30 out of the 41 respondents who are involved in this activity attempted to respond on the type of animals hunted. The animals considered are the species which are commonly found within the Cameroonian community forests and multiple responses were allowed.

As shown in the results (Table 4.10), five different animal types were reported to have been hunted more; these are the grass cutter, 87%; the antelope 67%; porcupine, 60%; deer, 55%; and the drill monkey, 50%. 23% was for others (this group includes small animals like the mole, birds etc); just a small percentage shows

that gorillas are also hunted while the result shows that the elephant and ape are not hunted in that community forest (0%).

According to the respondents some animal species are hunted more than others based on their demand by the buyers. Thus consumers' preferences can influence the kind of animal hunted the most. The study of Anadu et al. (1988) illustrated that the cane rats, duiker, porcupines and pigs were preferred in markets in south-west Nigeria; while Njiforti (1996) supported that in the north of Cameroon similar preferences were recorded. And when asked about the availability of these animals now compared to 15 years ago, 29 respondents out of 30 said they are not available, and the reason they cited for scarcity is extinction threatened.

Table 4.10 Types of animals hunted in the community forest.

Animals	**Percentages (%)**
Deer	55
Porcupine	60
Grass cutter	87
Elephants	0
Drill monkey	50
Ape	0
Antelope	67
Gorilla	3
Others	23

*Multiple answers provided

4.3.4 Logging

Furthermore, logging was identified to account for one of the major activities carried out within the forest as 68% of respondents acknowledged the practice. Even though they emphasized that this activity was practiced in a much smaller scale, its effects on the forest cannot be under-estimated. For example, Newing (2006) stated that selective logging, which is commonly practiced in west and central Africa where only the most valuable trees are cut, one falling tree can bring down a couple of surrounding trees and thin the forest's protective canopy. Aside from the fact that falling trees could destroy other surrounding trees, there is also the creation of roads for transporting the logs which goes on to destroy more trees and fragile soil. Logging also gives local residents and hunters access to forests that were previously not accessible (Laurance et al. in press, cited by Kumpel (2006), Bennett & Robinson (2000)). That is why Fimbel et al. (2001), Wilkie et al. (1992), and Wilkie et al. (2000) stated that logging has played a particularly important role in increasing bush meat hunting.

Types of plants harvested

The plants identified were iroko, *Prunus,* mahogany, "maobi" and others (these include NTFPs like *Gnetum, Irvingia*, etc). 41 respondents were involved and they had to choose more than one response. However, the respondents also made it clear that more of the NTFPs were harvested on almost a daily basis and accounted for 95% (others). 80% of the plants harvested are *Prunus*; iroko, 59%; mahogany, 76%

and “maobi”, 34%. These values show that these plants are greatly harvested, and most likely the harvesting is uncontrolled.

The respondents also said that these plants are harvested and used as pillars for the construction of wood houses, for fuel wood, for consumption and for medicinal purposes especially the NTFPs. The NTFPs harvested from the forest include *Gnetum africanum, Irvingia gabonensis, Piper guinensis* and a host of others. According to the Biodiversity Management Plans of HCV Bimbia-Bonadikombo Community Forest (BBCF), these species have been identified as threatened at the local level due to over harvesting. The result also shows that of the trees in the community forest, *Prunus africana* is the most harvested and may likely be endangered as well.

According to the respondents, the indiscriminate exploitation for local and international trade of this plant species is due to its intrinsic value. This has somehow led to a decrease in the population of this species. Schippmann, (2001) illustrated that this species has been considered as endangered and vulnerable by the government of Cameroon and the world’s list of threatened trees respectively.

Just as it is the case with hunted animals, the plants are not as available now as they were 15 years ago, cited reason was overharvesting through logging, for fuel wood, charcoal making and poles for construction.

Table 4.11 Types of plants harvested

Types of plants	Number of respondents (N=41)	Percentage (%)
Iroko	24	59
Prunus	33	80
Mahogany	31	76
Maobi	14	34
Others	39	95

*****Multiple answers provided

4.3.5 Fishing

Finally, fishing was recorded to be the least of the activities carried out in the community forest (44%). According to the respondents fishing was not their major activity in the forest.

Considering the high dependence of the local people on forest resources, it is important that the forest should be sustainably managed because most of the activities they are involved in are causing great damage to the forest. Activities like slash and burn farming where fires destroy even areas not intended to be burnt, logging which destroys the under storey of the forest and soil, hunting which is causing some of the animals to be endangered, and collection of fuel wood. Thus it is important to manage such a forest sustainably because almost everything that the community members

need and use comes from it. And since the locals are the direct users of this resource they should be the managers of the resource. As shown by Hosseni (2011) SFM can be improved through active involvement and participation of direct users of the forest.

4.4 Perception

4.4.1 Respondents' perception of sustainable forest management

In order to understand how the respondents perceived the concept of SFM, a range of questions which identified their impression, degree of accessibility, users' right and the quantitative amount of benefits they received from the forest were asked (Appendix 1, part III). Respondents' perception was divided into three major categories: 'good', 'moderate' and 'poor' perception. Considering the aspects as stated above, the 3 categories for perception were classified.

a) Good perception: If respondents could state responses judged by the author to support 75% of the claim about SFM that was necessary for managing forest resources.

b) Moderate perception: If their responses were rated in the range of 50% in all the information provided.

c) Poor perception: If the responses were 25% or less of all the information provided.

Examining the respondents' perception and subsequently how they felt about forest as a resource and SFM as a process, was necessary because it is assumed that if the local people have a good impression about a resource and the process of

managing it, they will want to sustain the resource and even seek for better ways of managing it so as to ensure its sustainability. Otherwise if they have a poor impression about the resource, little or no effort will be made to ensure its future availability. This implies that the way the local people view the forest and SFM will influence their management/participation. Good impression will encourage good (sustainable) management of the resource, and vice versa.

The result (Table 4.12) shows that 66% of the respondents have poor (to moderate) perception, (i.e. those who do not want or better still, respondents who do not see the need or importance of SFM).while only 34% of respondents has good (clear) perception of SFM. The difference in opinion in the manner in which the communities regard SFM also reflects their different perception on SFM. Some of the villagers do not believe that SFM will help to preserve their forest resources; instead they believe it is just a systematic way of restricting them access to forest resources and limiting their benefit from the forest. A majority of them are actually disgruntled with the concept.

Educating the people about the goals and objectives of SFM will be necessary so as to change the poor impression they already have about the concept. The contrasting views the people have might be due to wrong information systems or under sensitization. Having a poor perception about SFM is indicative that they are not the managers since managers are expected to have a clear vision about the process and resources.

Table 4.12 Respondents' general perception on SFM

General perception on SFM	Number of respondents	Percentage (%)
Good perception	14	34
Moderate perception	15	37
Poor perception	12	29

4.4.2 Perception in relation to knowledge of SFM

This was examined to find out if the respondents' knowledge of SFM will affect the manner in which they will perceive the process. It was assumed that a respondent with good knowledge of SFM will likely have a good perception of the process.

Table 4.13 shows that a total of 14 respondents had good knowledge of SFM. Of the 14 respondents with good knowledge, 10 of them had good perception of SFM, 2 had moderate and 2 had poor perception of SFM. 22 out of 41 respondents had moderate knowledge and out of the 22, 3 respondents had good perception, 12 had moderate and 7 had poor perception of SFM. 5 out of 41 respondents had low knowledge of SFM, and of these 5, 1 had good perception, 1 had moderate and 3 had poor perception. We see from the results that more respondents with good knowledge of SFM also have good perception and those with poor knowledge have poor perception. This indicates that there is an association between respondents' knowledge of SFM and the manner in which they perceive it. Thus the local people

need to be educated about the process of SFM so that they can develop a good attitude towards it.

Table 4.13 Relationship between knowledge of SFM with respondents' perception of SFM

General knowledge of the respondents	**General perception of the respondents (N=41)**			
	Respondents with good perception	**Respondents with moderate perception**	**Respondents with poor perception**	**Total number of respondents**
Respondents with good knowledge	10	2	2	14
Respondents with moderate knowledge	3	12	7	22
Respondents with poor knowledge	1	1	3	5

4.5 Rural Communities' Challenges in SFM

This research also looked at some of the possible challenges the community might be facing in the course of managing the forest so as to provide information for future policy formulations to better the management of forest resources.

The result shows, among others, some of the common challenges usually faced by many community forest management projects. The major challenges which were identified are (Table 4.14):

1) The long application process to acquire a community forest

86% of the respondents claimed that the application process to acquire a CF is too and it often takes years for it to be completed, mainly due to some administrative bottle necks. This long process also makes them think that the government wants to restrict them access to the forest.

2) Illegal exploitation by logging companies

This was also a problem highlighted in Table 4.14 accounting to 83% responses. Since the forestry law favors large scale forestry enterprises than the local communities, it has caused the logging companies to disregard some of the harvesting laws in the management plan, causing unsustainable harvesting.

3) Lack of finance (95% of responses)

This has greatly affected CFs in Cameroon because a project cannot be sustainable with limited funding. This also accounts for the unsustainable nature of the BBCF.

4) Lack of and/or inadequate training of community leaders, (83% of responses).

The local people lack training and the skills needed for proper management of the forest. In an informal discussion with some of the respondents, one of them said that, *"the lack of training of the community members and lack of involvement of forestry officials to assist the community members with training and supportive programs is a big issue"*.

5) Lack of government support, (81% of responses)

This is evident in the state of the forest. Lack of finance on the part of the community, coupled with lack of government support makes it so difficult for local communities to manage the forest. The government fails to support them with neither finances not training. One of the respondents stated *"the lack of government's assistance has led to inadequate control of forest resources"*. As discussed earlier one of the reasons why the Mexican Community Forest Model succeeded was because the government provided them with supportive programs.

6) High costs of the Simple Management Plan preparation, (86% of responses)

This challenge has actually accounted for many other problems faced in the CFs. For example, because of this high cost many CFs became vulnerable of being 'taken over' by elites and logging companies who can fund for their creation. And as such all

benefits from such CFs were claimed by those who paid for their creation; as well as the decision making concerning the forest are automatically in the hands of loggers and elites.

These challenges are also supportive of the works of Djeumo (2001), who looked at the origin and development of community forest in Cameroon with the associated constrains involved, citing a number of them among which he said there was inadequate training of community leaders. Brown and Schreckenberg (2001), in their paper on how community forests in Cameroon face challenges, cited the conflict of interest that arises as logging companies turn to take advantage of the lack of control in the forest to carry out their activities to the detriment of the forest dwelling communities who depend on these resources and who are unfortunately the underdogs whose voices are unheard.

These and others are some of the challenges that seem to be responsible for the unsustainable use of the forest in Cameroon. It is often said that knowing a problem is the first step to solving it. As identified by the forest dwelling community, and also as one of the main objectives of this study, to provide information about the challenges faced by the rural communities in SFM, gives opportunity for the government to implement laws and legislations to minimize the effects of these challenges.

Table 4.14 Challenges facing the rural community

Indicators	Agree (%)	Strongly agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
Long process to acquire a CF	15	71	4	10	0
Illegal exploitation by logging companies	24	59	3	12	2
Lack of government support	59	22	8	9	2
Lack of finance	85	10	3	2	0
Limited participation of women	17	0	2	47	34
Lack of and/or inadequate training of community leaders	80	3	10	7	0
High cost of the Simple Management Plan preparation	66	20	7	5	2

Source: Author

4.6 Respondents' awareness and knowledge of sustainable forest management

4.6.1 Respondents' awareness of the concept of SFM

In order for the local people to be managers of the forest then they should be aware of the process and subsequently have a good knowledge of it. That is why the study had to examine these aspects as well. To assess respondents' knowledge on sustainable forest management and subsequently examine their role in management, the researcher found it necessary to determine if they have heard about SFM.

Of the 41 respondents surveyed, 80 % of them have heard of SFM, as opposed to 20% who have not heard of SFM (Table 4.15).

The result shows that a majority of the respondents have heard of SFM. However, awareness does not necessarily mean that they have acquired the knowledge of SFM. That is why it was necessary to examine their knowledge of SFM.

Table 4.15 Respondents' awareness of SFM.

Respondents who have heard about SFM	**Number of respondents (N=41)**	**Percentage (%)**
Yes (agree/strongly agree)	33	80
No,(neutral, disagree/strongly disagree)	8	20

4.6.2 Respondents' knowledge of sustainable forest management

In order to have an overall understanding about respondents' general knowledge of sustainable forest management, two short definitions of sustainable forest management were used. One was the correct definition and the other was incorrect. It was assumed, that any respondent who has a good knowledge of SFM will agree to the correct definition and disagree with the wrong one. Likewise those who have moderate knowledge on SFM would agree with the correct definition and may not be able to decide whether the wrong definition is actually wrong. Those considered to have poor knowledge, were assumed would be unable to decide which response to give and would probably chose "neutral" or "disagree" where they were to agree and

vice versa. With this in mind knowledge was divided into three major categories: “high”, “moderate” and “low” knowledge” (Appendix 1, part III).

1) Good knowledge: If they could give correct response to approximately 70% of all the information provided

2) Moderate knowledge: If their responses were rated in the range of 40% to 69% of all the information provided.

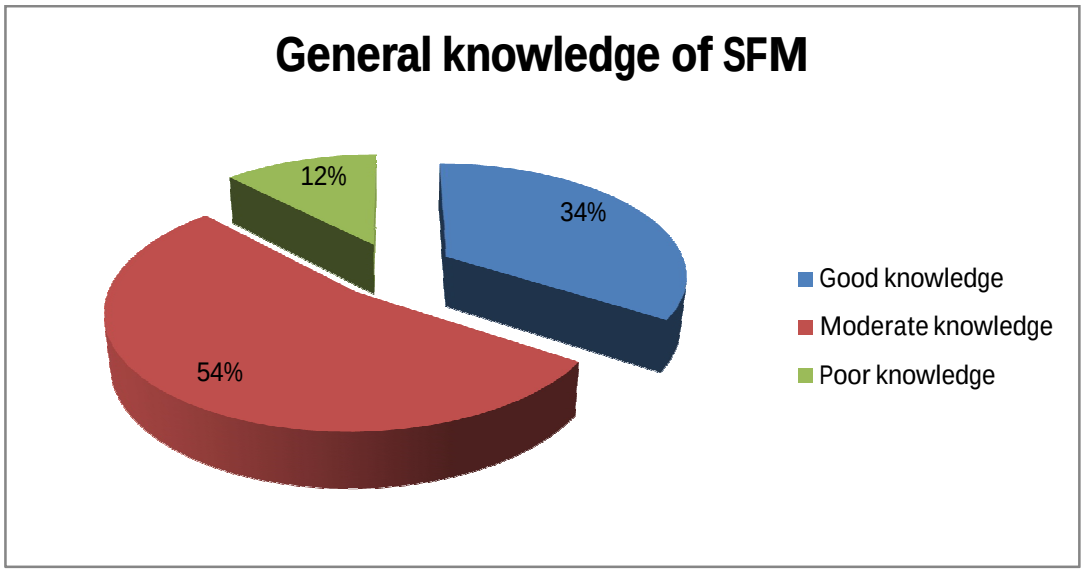
3) Poor knowledge: If the responses were below 40% of all the information provided.

The results (Figure 4.2) showed that, 34 % of the respondents had good knowledge on SFM, 54% had moderate knowledge while 12% of the respondents had poor knowledge.

The people need to be well educated about the goals and objectives of the concept and emphasize the benefits of such a process. This will help them cultivate a positive view about the process and will affect it positively. People have contrasting ideas concerning SFM probably due to wrong information systems or under sensitization.

As illustrated by Hosseini (2011) in his work to determine the factors that will affect SFM positively in Iran, he pointed out that increasing knowledge about the importance of forests to those who use and benefit from it, will directly impact the development of sustainable forest management. Likewise Khosrowshahi and Ghavami (2006) put it that when community knowledge and awareness about importance and benefits of forests are increased, there will be positive impacts in preserving natural resources and achieving sustainable development goals in the long term.

Figure 4.1 Distribution of respondents' general knowledge of SFM.



Source: Author's computation.

4.6.3 Respondents' knowledge on SFM in relation to level of education

This was performed to find out if there is any correlation between level of education and knowledge of SFM to ascertain if the level of education will influence a person's knowledge of SFM.

In a total of 41 respondents, 14 are said to have good knowledge of SFM, 22 is said to have moderate knowledge and 5 is represented by poor knowledge (Table 4.16).

Among the 14 respondents who had good knowledge of SFM, 1 had no formal education, 10 had primary level of education, 1 had secondary education and 2 had high school level of education. Among the 22 respondents who have moderate

knowledge of SFM, 5 of them had no formal education, 13 for primary education, 2 had secondary and 2 had high school level education.

With regards to the 5 respondents who had poor knowledge of SFM, 2 had no formal education, 1 had primary education, 1 had secondary and 1 had high school education. This shows that knowledge of SFM does not necessarily mean that the person must acquire some particular level of formal education.

Table 4.16 Respondents' knowledge on SFM in relation to level of education

General knowledge		**Respondents' level of education (%)**				
		No formal Education.	**primary School.**	**Secondary School.**	**High School.**	**Total**
Definition of SFM	Good knowledge	1(13)	10(42)	1(25)	2(40)	14(34)
	Moderate knowledge	5(63)	13(54)	2(50)	2(40)	22(54)
	Poor knowledge	2(25)	1(4)	1(25)	1(20)	5(12)

4.7 **BENEFITS**

Benefits generated from the community forest, if at all it existed, and the manner in which these benefits were allocated amongst the forest custodians was assessed. This was important in order to determine their degree of commitment to SFM in the case where the livelihood of the people depended on the forest resources. Otherwise the rural people will not find it necessary to sustainably manage it if no benefit accrues from it, assuming that People would be more committed and motivated to work hard knowing that there will be some benefits to be derived.

Table 4.17 shows that of the 41 respondents who were interviewed, 51% acknowledged that the community forest generated some benefit to the people; 20% said no benefits accrues from the CF and 29% were "neutral". This disparity in views concerning benefit generated from the forest can be due to lack of transparency and accountability in CF management as suggested by Gaelle (2013) such that people are not even aware if the forest generates any benefit. 15% of the respondents agreed that the benefit from the community forest is shared to the members of the community; 2% strongly agreed; up to 61% were neutral and 22% disagreed. Due to the large number of respondents who were neutral, it was difficult to conclude with certainty that the benefit is shared to the members of the community coupled with the fact that more respondents disagreed (22%) as opposed to those who agreed (15%). The respondents were really reluctant to supply answers to this section for fear that their identity might be disclosed so most of them chose to be neutral.

Table 4.17 below also shows that, 14% of the respondents said that they are satisfied with the manner the benefits from the forest were shared; 68% were neutral; 17% said that they were not satisfied with the manner in which the benefits from the forest were being shared. A majority of the respondents were neutral accounting for up to 68%. That notwithstanding, it can be concluded that the respondents are not satisfied with the benefit sharing system given that those who were not satisfied are more (17%) than those who were (15%). Some respondents said *'we are not satisfied with the benefit because much of it is embezzled by committee members and elites, and we the actual actors go empty handed'*.

Of the 41 respondents who were surveyed, only 10% acknowledged that they received support from NGOs; 73% denied receiving anything from NGOs and 17% were "neutral". From the result, a total of 73% which represented majority of the sample population declared that no support was received from NGOs as opposed to a total of 10% who said that they receive support. This mixed view on NGOs support is because formerly there were NGOs supporting CFs but they no longer exist.

Table 4.17 Respondents benefits from the forest and their satisfaction

Indicators	Agree (%)	Strongly agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
The community forest generates benefits	39	12	26	20	0
The benefits are shared to the community members	15	2	61	22	0
I am satisfied with the way the benefits are being shared	26	2	68	15	2
We receive support from the NGOs	10	0	17	49	24

Finally, the state of the forest was also examined using the criteria for sustainable forest management proposed by ITTO (2005) to assess its status given that those who depend greatly on it are not the actual managers. The final rating shows that the forest is unsustainably managed due to limited role of the local people in SFM. A scoring that ranged from 1-4 was used to evaluate the state of the forest whereby a score of 1 represented a situation of over-exploitation (poor management), while a score of 4 is a situation of less exploitation (proper management) as shown in Table 4.18.

Table 4.1 8 Assessment of the state of the BBCF (Source: Author)

Criteria	Score (1 to 4) Lowest=1, highest=4	Comments
1. Extent of forest resources	1.5	Reduce forest area due to farming (shifting cultivation/ slash and burn) and logging.
2. Biological diversity	2	Most plants and animals in the forest are under serious threat (deforestation and logging). Reduced diversity.
3. Forest health and vitality	2	Poor land use practices. Forest frequently affected by fire from Slash and burn farming, leading to airborne pollution and diseases.
4.Productive functions of forest resources	2	-forest area designated for production is under threat. -however, there is presence of a nursery for restoration programs.
5. Protective functions of forest resources	1	Exposed water catchments and frequent soil erosion-due to reduced forest cover. -primary forest destroyed by logging.
6. Socio-economic function/benefits	2	Increased extraction of wood and NFTPs. -resources experiencing high pressure at the moment (BBNRMC-member). -decreased area designated for recreation, education, and other social services.
7. Legal, policy and institutional framework for SFM	1.5	-Inadequate legislations to support community forest management. -Laws favor logging industries; lacks fairness

This result is supportive of surveys carried out in 2009 and 2011 on some CFs in the S. W Region of Cameroon which confirmed that the resource status of BBCF is poor (Mbolo, C. & Schusser, C. 2012).

Chapter summary

This chapter analyzed the data obtained from the field, and inferences (interpretations) were made from the distribution of the responses and summarized.

The role of the local people as managers in SFM is low (limited); hence they are participants not managers. This is because they are not the actual people making decisions, planning, implementing and monitoring projects. They are mere observers participating in SFM.

The local people are highly dependent on forest resources, and it will be more logical if they are the actual managers of these resources. This will improve forest sustainability because they know their livelihoods depend on the forest resources. The local people have a poor perception of SFM, probably the reason why they are just participants because managers need to have a clear perception of the resource they are managing.

The local people face many challenges in the course of their attempt to sustainably manage the forest.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

The aim of this study was to describe the role of communities in SFM in Cameroon, identify their dependence on forest resources, challenges and to provide some recommendations to remedy the situation. This study experienced a number of limitations.

In terms of the sample size, 200 respondents were projected but due to lack of compliance only 41 responses were met. Some respondents were afraid that their identity would be disclosed (due to unexplained political reasons) while others saw it as a waste of time because they have had previous encounters with researchers on similar subject matter but no remedy has been sought to their problems.

Considering that this study was centered on just one community forest among many, represents another limitation also the fact that there was no comparison with other community forests within Cameroon.

With these limitations it becomes difficult to generalize the conclusion to the whole country based on the result of this study. It is however worth noting that results regarding the challenges (i.e. long process in government's allocation of community forest; illegal exploitation by logging companies; limited or no training of community members; and the high cost of acquiring a CF) that the local people face are reflective of other studies which have been conducted in other community forests in Cameroon.

Despite the shortcomings, this study will provide some pointer information for further research and also it will guide governmental and non-governmental organizations concerned with forest management in the formulation of new policies.

a. Communities' role in SFM

The local communities are not performing their role in forest managing as they ought to. They have limited role in the decision making process, planning, implementation and evaluation of community forests. This is vital for their empowerment to manage the resources themselves.

In fact the decision making process is top-to-bottom, where the government officials make decisions and impose them on the local people who act as observers. The local people's role in management is more or less passive and so they are less influential; they are therefore participants, not managers of the forest. Their main role in planning is in the preparation of the simple management plan of activities for their community forest, since it is a requirement in acquiring the community forest in the first place.

b. Dependence on forest resources

The rural people in the study area are greatly dependent on the forest for their livelihood with little or no alternative livelihood sources. Their main activities comprise of farming, collection of fuel wood, hunting, artisanal logging and collection of NTFPs. Since they are so dependent on forest resources, they should be

the real managers of the resource rather than being just participants; this will go a long way in preserving the resources.

c. Perception of sustainable forest management

The local people's perception of SFM is very poor, and this is as a result of poor sensitization and education of the people about the goals of SFM. The people have contrasting views about the goals of the concept and according to some; the government is looking for a way to deny them access to the resources.

d. Challenges

The study also shows that the local people are faced with a range of challenges in managing the forest. Some of the challenges include the lack of finance, lack of government support, long process in government's allocation of community forest; illegal exploitation by logging companies; lack of human capital building due to limited or no training of community members; and the high cost of acquiring a CF .

5.2 Recommendations

1. In order for local people to actively manage natural resources, they should be the ones planning, implementing, evaluation and monitoring the projects. Since they are so dependent on the forest they should be the real managers of the resource they depend on and not just participants. If they are managers and

knowing that their livelihood depends on the forest, they will sustainably manage it.

2. The government can adopt community forestry as a national strategy for sustainably managing the forest as it is in the case of CBFM in the Philippines. If it becomes a national issue it means it will be everybody's concern to manage and protect the forest.
3. The decentralization of forest management and devolution of powers to the rural communities should be in practice and not in theory only. The case of Nepal can be adopted where there was practical devolution of governance leading to democratic deliberations, institutional development and capacity building.
4. The government of Cameroon needs to revamp its forestry policy to favor community forest management. The articles related to the implementation should be revisited, stating clearly the roles of the stakeholders involved in community forest management.
5. Since the local people depend greatly on agriculture, improved agricultural practices should be introduced which would go a long way to solve the problem of low yields as a result of nutrient exhaustion which causes them to move to new farm lands each time (thereby causing more deforestation as they move). The local people can practice crop rotation, conservation

agriculture (which protects top soil to reduce soil erosion), integrated pest management techniques and agro-forestry.

6. To reduce over dependence on forest resources, the government should provide alternative livelihood activities to the local people. For example, the government can boost small businesses by providing micro-credit to individuals and groups at low interest rates; encourage poultry farming, bee farming, mushroom farming, and fish farming by providing technical and financial support to the local people.
7. To ensure sustainability in the management of resources and environmental conservation, local communities must benefit from the resources. When local communities know that they benefit significantly from any conservation efforts, they would have an incentive to refrain from illegal resource extraction. This can help curb the rate of illegal activities happening in the forest.
8. Environmental education should be included in school curriculum at all level for proper sensitization to create greater awareness of issues related to the environment and its conservation.
9. For future study, research can be carried out to assess the impact of the Cameroonian forestry law on community forest management. Findings from such a research will be useful in formulating forestry-related policies.

APPENDICES

Appendix 1 Individual Questionnaire

Good Day!

My name is Njandome Irene Monsi, a Cameroonian graduate student of International Cooperation Policy at the Ritsumeikan Asia Pacific University, Japan. I specialize in Environmental Policy and Administration. I am conducting a research to better understand of the role of rural communities in the sustainable management of the Cameroonian forest. Please help me by filling- up this questionnaire. Trust that the information you gave will only be used for the purpose of this research and would be treated with highest confidentiality. Thank you very much.

Individual Questionnaire

Part I: Socio Demographic and Socio Economic Characteristics

Please, kindly provide an answer or [v] appropriately.

Family and personal data:

1) Age: [ ] 20-30 [ ] 31-40 [ ] 41-50 [ ] 51 and above

2) Marital status: [ ] Divorce [ ] Single [ ] married [ ] widow/widower

3) Household size: [ ] 1-4 [ ]5-8 [ ]9 and above

4Educational level: [ ] First School Leaving Certificate [ ] GCE Ordinary Level [ ] GCE Advanced Level [ ] no formal education

5) Respondents' occupation: [ ] Housewife [ ] Farmer [ ] Trader [ ] Others (specify)--------

6) Approximate household monthly income in Francs CFA

[ ] Below 30,000 [ ] 31,000-60,000 [ ] 61,000-100,000 [ ] 100,000-150,00 [ ]150,000 and above

7) What materials are used in the construction of the walls of your house? [ ] fire bricks [ ] stones [ ] cement [ ] wood

Part II: Community's dependence on forest resources

8) What are the activities that are carried out in your community forest? (more than one answer) [ ] Hunting [ ] collection of fuel wood[ ] logging [ ] fishing [ ] farming

9) If hunting, what kind of animals do you hunt?

[ ] Deer [ ] porcupine [ ] grass cutter [ ] elephants [ ] drill monkeys [ ] ape [ ] antelope [ ] gorilla

10) Do you hunt more animals now than 15yrs ago? [ ] yes [ ] no

11) If no, what do you think is the reason? [ ] logging [ ] extinction threatened [ ] over harvesting

12) What kind of plants are harvested for food, fuel wood/charcoal making or for logging? (more than one response). [ ] iroko[ ] mahogany [ ] Prunus [ ] Maobi [ ] others (NTFPs)------

13) Are these plants as many as they were 15yrs ago? [ ] yes[ ] no

14) If no, why? [ ] logging [ ] extinction threatened [ ] over harvesting

Part III: Awareness/Perception

15) *Please tick [√] only one under the given options*

	agree	Strongly agree	neutral	disagree	Strongly disagree
I am aware of sustainable forest management (SFM)					
SFM is management that maintains and enhances the long-term health of forest ecosystems					
SFM is management that uses all the forest resources available					
I have a good impression about SFM					
SFM gives limited access to forest resources					
SFM restricts user rights within the forest					
SFM limits our benefit from the forest					

Part IV: Community's role in SFM

16) *Please tick [√] only one under the given options*

	agree	Strongly agree	neutral	disagree	Strongly disagree
I am a manager in SFM					
I am being informed about what has happened					
I implement projects					
I share information to researchers					
I make decisions on forest management					
I evaluate and monitor projects					
I participate in joint analysis(partnership)					

Part V: Benefits

17) Please tick [√] only one under the given options

	agree	Strongly agree	neutral	disagree	Strongly disagree
The community forest generates benefits					
The benefits are shared to the community members					
I am satisfied with the way the benefits are being shared					
We receive support from the NGOs					

Part VI: Challenges

18) Please tick [√] only one under the given options

	agree	Strongly agree	neutral	disagree	Strongly disagree
Long process to acquire a community forest					
Illegal exploitation by logging companies					
Lack of government support					
Lack of finance					
Limited participation of women					
Lack of and/or inadequate training of community leaders					
High costs of the Simple Management Plan preparation					

Please indicate other concerns or issues about your role in SFM (Please write as many as you can).

_____

Thank you for your kind support!!!

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