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ASSESSING THE LIVELIHOOD GAINS OF FOREST HOST COMMUNITIES AND THE MANAGEMENT OF THE BOBIRI FOREST RESERVE (BFR) IN GHANA

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ABSTRACT

The Study assesses the livelihood gains of forest host communities and management of the Bobiri Forest Reserve in Ghana. The communal/admitted rights of the people of Kubease to the Reserve allow the locals to collect certain quantities of specific NTFPs for personal use without any payment. However, if these NTFPs are to be collected in larger quantities for commercial purposes, a permit is needed. The communal/admitted rights of the Community to the ecosystem services of the Reserve make them important stakeholders in its management.

Over the years however, Co-Management practices of the Reserve have been that of consultation with limited exchange and/or no involvement of the Community. There is also the lack of legislative support in co-managing the BFR. The resultant effects have been the over exploitation and continual decline of the ecosystem services provided by the Reserve as well as an unequal power distribution between the resource users, resource managers and other stakeholders.

The Study therefore proposes the development of Co-Management guidelines that have the capacity to empower poor resource users to sustainably manage the Forest resources together with the resource managers and other stakeholders. Here, Co-Management is seen as a type of partnership between non-governmental and governmental natural resource users and managers in which management is formally shared, usually under an agreement. Sharing of management responsibilities is seen as a means of reducing the over exploitation of the Forest resources and hence resource sustainability.

The Study concludes that there is the need to put in place the right institutional and legislative framework that allows the knowledge and understanding of all stakeholders to be reflected in making and implementing sustainable forest management decisions. Here, the resource users are important, as they directly tend to have a greater knowledge of their local environment. The resource users position as disadvantaged groups should therefore be enhanced by giving them direct representation in decision making and allowing them to benefit from collective action.

The Study draws insight from Co-Management approaches and is guided by qualitative investigation. Semi-structured in-depth interviews, participant observation, focus group discussion and other secondary data sources are the methods applied.

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God bless us all!!!

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LIST OF ABBREVIATIONS AND ACRONYMS

ADM	Assistant District Manager
BFR	Bobiri Forest Reserve
CBNRM	Community Based Natural Resource Management
CCAs	Community Conservation Areas
CFC	Community Forest Committees
Co-Management	Collaborative Management
DfID	Department for International Development
DFR	Department of Feeder Roads
DM	District Manager
EPA	Environmental Protection Agency
FC	Forestry Commission
FGD	Focus Group Discussion
FGs	Forest Guards
FORIG	Forest Research Institute of Ghana
FRNR	Faculty of Renewable Natural Resources
FSD	Forest Services Division
GES	Ghana Education Service
ICDPs	Integrated Conservation and Development Projects
ITTO	International Timber Trading Organisation
MA	Millennium Ecosystem Assessment
MLNR	Ministry of Land and Natural Resources
MTS	Modified Taungya System
NHIS	National Health Insurance Scheme
NRM	Natural Resource Management
NTFPs	Non-Timber Forestry Products
OASL	Office of Administration of Stool Lands

PAs	Protected Areas
RMSC	Resource Management Support Centre
RS	Range Supervisors
SLA	Sustainable Livelihood Approach
WWF	World Wildlife Foundation

CHAPTER ONE
GENERAL INTRODUCTION

1.1 Introduction

The designation of forest reserves in poverty-dominated areas has been met with various challenges. This is primarily attributed to the dependent of the forest host communities on these reserves for the collection of Non-Timber Forest Products (NTFPs) that contribute to their livelihood. In addition, the timber based or fuel wood based commercial activities in and around these protected areas perceived it as a threat to their economic gains. All these pose serious challenges to fully harnessing and developing such areas as well as to biodiversity conservation.

Conservation organisations have responded to these threats by championing new approaches to protected area management that promise to build local constituents support through the sharing of the social and economic benefits from these areas. Several of these approaches include Community Based Natural Resource Management (CBNRM), Community Conservation Areas (CCAs), Integrated Conservation and Development Projects (ICDPs) as well as Collaborative Management (Co-Management) (Fox, 2007: 2).

In all these approaches, the Co-Management approach has been given much recognition in the past two World Park Congresses. The Co-Management approach requires two or more social actors to negotiate, define and guarantee among themselves a fair share of the management functions, entitlements and responsibility for a given territory, area or set of natural resources (ibid).

According to the Convention on Biological Diversity (2007), in addition to the forest host communities' dependence, they also unwittingly become responsible for the degradation of the resources and not realizing the consequences of this dependence. This corroborates Choudhury et al. (2004) assertion that the socio-economic and cultural life of the forest dwellers is closely associated with forest to a great extent.

This close association is however not without ecological cost. Such ecological costs include reduction in the forest ecosystem services (Padmini et al., 2001), disrupting ecosystem services (Ghazoul, 2001) and changes in the population dynamics and demography of harvested species (Sinha and Bawa, 2001).

It is therefore the focus of the Co-Management approach to intensify collective efforts, maintain stability and ensure commitment to the long-term objective of sustainable management of forest ecosystem services. This however can be complicated and difficult to achieve. The difficulty can however be overcome if the stakeholders can collaborate effectively. The multi-faceted but also highly fragmented stakeholder collaboration in managing protected areas requires Co-Management to ensure the growth and sustainability of such reserves. This is necessary due to the important role of knowledge transfer, *effective coordination and network building* in the context of the current economic climate (WTO, 2010: Forword, *emphasis by author*).

1.2 The Ghanaian Situation

Though Co-Management has gained worldwide recognition, its application in Ghana has not been encouraged. This has resulted in conflicting issues among the various stakeholders in the sustainable management of forest ecosystem services. The situation has become complicated due to the neglect of documentation of ecosystem services in Ghana. For instance, according to the Ministry of Lands and Natural Resources (2004), the area of forest managed primarily for the protection of soil or water is not reported or otherwise available. Worsening the situation is the neglect of local community perspective (Folke et.al 2005a) and their dependence on forest ecosystem services for their livelihoods. Overall, the level of rural dependency on forest resources has often been overlooked (Cavendish, 2000).

The Study therefore adopts the Co-Management approach that embraces multi-stakeholder visions and manages multi-stakeholder interests in order to ascertain how it can be applicable in Ghana. Co-Management has provided enormous benefits to countries already using it for enhancing interaction and communication. Here, reference can be made to the Co-management of Marine Protected Areas in The Gambia, Networks and Co-management in Small-scale Fisheries in Chile, Co-management in the Tanzania part of Lake Victoria and Joint Management in Protected Areas in the Northern Territory, Australia.

However, in Ghana, its potential benefits still remain to be explored. The situation has become complicated as a result of the failure to adequately address conflicting objectives and manage trade-offs between maintaining/enhancing ecological gains and improving livelihood. It is against this background that this Study seeks to ascertain how Co-Management as a participatory approach can be used to facilitate, enhance interaction and

communication as well as provide a pathway to sustaining long-term livelihoods of host communities while minimizing the associated ecological costs for the development of a more sustainable management of forest ecosystem services.

It must however be emphasised that collaboration concern comes not only from the government but also all individuals and groups with a stake in the management of the forest ecosystem services. Here, the involvement of host communities is paramount as their livelihood is dependent on the services provided by the Reserve. Before discussing the management of the Reserve therefore, the ecosystem services provided by the Reserve and how the dependence on the ecosystem services has affected the current livelihood situation of the host community are discussed. Again, as Co-Management embraces multi-stakeholder visions and manages multi-stakeholder interests, an overview of the various stakeholders involved the management of the Reserve is also considered.

1.3 Aims and Research Questions

The overall aim of this Study is to ascertain how the management functions, entitlements and responsibilities of forest ecosystems are negotiated, defined and guaranteed among various stakeholders for the sustainable management of forest ecosystem services in Ghana.

Specifically, the Study seeks to find answers to the following research questions:

- How important are the main ecosystem services of the Bobiri Forest Reserve (BFR)[1] to the livelihood of the host communities?
- How has the dependence on the ecosystem services affected the current livelihood situation of the host communities?
- What are the claims of interest of the various stakeholders involved in the use and management of the ecosystem services of the BFR?
- How are the management functions, entitlements and responsibility of the BFR negotiated, defined and guaranteed by the Forest Services Division (FSD) and the Forestry Research Institute of Ghana (FORIG) with the host communities to ensure the sustainable use and management of the ecosystems services of the BFR?

[1] Refer to Chapter Two for a discussion on the Bobiri Forest Reserve (BFR)

1.4 Significance of the Study

The study provides a critical and analytical perspective to policy makers in understanding how Co-Management can be adopted as a means towards sustainable management of forest ecosystem services in Ghana.

It again serves as a basis and an insight to the State and other development agencies of the need to consult host communities in planning intervention programmes for them. Furthermore, it gives an insight to view forest host communities as co-managers of forest reserves and to recognize their importance in serving as the start in intervention programmes and forest laws and thereby including their views and interests as well.

In addition, since Co-Management is a current development issue that is gradually being embraced in the Ghanaian economy, the research acts as a fundamental basis for all those who harbour the desire to conduct any future research into this area of study. Finally, it contributes to knowledge on the subject matter.

1.5 Disposition

The output of the Study is organised into seven chapters. The Chapters are preceded by an abstract: a condensed summary and synthesis of issues and conclusions from the Study. Chapter One introduces the problem and its context by giving an overview of the issues under study. Chapter Two presents a profile of the Study area and the background of the study community.

Chapter Three briefly examines literature on stakeholder and livelihood analyses, which are key in the Co-Management approach as well as to sustainable management of ecosystem services. In the Fourth Chapter, the theoretical underpinning for the Study is discussed.

The focus of the Fifth Chapter is to discuss how the Study is done, the approaches adopted for the Study as well as the quality and ethical concerns involved. Chapter Six provides the setting for understanding the study variables with an analysis and evaluative discussions of the survey results. Recommendations for policy planning and future research as well as conclusion of the Study are discussed in Chapter Seven.

CHAPTER TWO
SCOPE OF THE STUDY

2.1 Introduction

The Chapter provides an overview of the spatial and socio-economic context in terms of the description of the forest management area, the major determinant in which data was collected for the Study. Here, the focus is on the Bobiri Forest Area comprising the Bobiri Forest Reserve (BFR) and one of its surrounding communities (Kubease) hereby referred to as host community. In line with this, the location and extent, physical environment, ownership and rights of the BFR and the Community's social-cultural settings are discussed based on the information from the Forest Services Division (2012: 7-10). BFR was chosen for the Study because of the pressure that is being exerted on it by the number of farms around it. Also, the status of the Reserve as production, conservation, research and eco-tourism site attracts many different stakeholders and thereby very suitable for this Study.

2.2 Background of BFR

The BFR is named after River Bobiri. The River passes through the middle of the Reserve. The Reserve falls within the administrative districts of Ejisu-Juaben and Afigya Sekyere East. It is under the management of Juaso Forest District in the Ashanti Region. It is currently managed with the Working Plan of Forest Management Unit 39 (FMU 39). The FSD, Traditional Authorities and other institutions such as FORIG collaboratively manage the Reserve to maintain its protective and utility functions (Forest Services Division, 2012: 7).

According to Forest Services Division (2012: 7), the Reserve is purposely managed to ensure protection of the forest resources, sustainable supply of logs to the Timber Industries and maximum supply of benefits to the landowners and to sustain the area as premier eco-tourism and research centre. In as much as the history of the Bobiri Forest prior to its reservation in 1939 is not documented, it is known that by order of the Juaben Stool (the royal custodian of the land area), the forest between Konongo and Juaben was closed to farming for some time up to 1936. The increased demand for logs during the World War II led to the reservation of the forest, now Bobiri Forest Reserve. On the 3rd of November 1949, the Reserve was constituted under rules signed by the Chief of Juaben and his councilors and by the Mampong Native Authority on the 6th of June 1950.

2.3 Location and Extent of the BFR

The BFR is the closest forest reserve to the city of Kumasi, capital of Ashanti region. Refer to Figure 2.1. It is located 35 km southeast of the regional capital and 2.5 km off the main Kumasi-Accra road at the village of Kubease. It lies on latitude 06°40'N to 6°44'N and longitude 01°15'W to 01°22'W. The Reserve covers an area of 5504.00ha (55.040km^2). Table 2.1 shows the distribution of the Reserve.

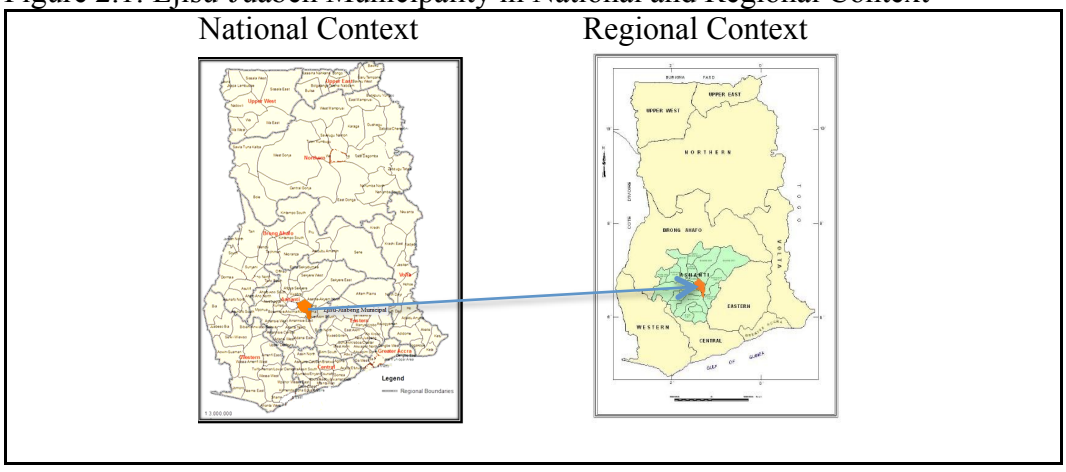
Table 2.1: Distribution of the BFR

Reserve	Potentially Protective Forest (Ha)	Potentially Productive Area (Ha)	Admitted Farms[2] Area (Ha)	Total (Ha)
Bobiri	1417.22	4021.18	65.60	5504.00

Source: Forest Service Division, 2012: 7

Some of the forest host communities are Kubease, Nobewam, New Koforidua, Duampompo, Agyareago, Juabenma, Krofuom, Tetekaaso, Atunsu and Kyekyewere. For the purposes of this Study however, Kubease was selected. The selection of Kubease was informed by its description as the "gate-way" community to the Reserve. Again, its location on the main Accra/Kumasi road provides the "first impression" when approaching the Reserve. Kubease's selection was also informed by its population size. With reference to the 2000 Population and Housing Census estimate of Ghana, Kubease is the host communities with the highest number of inhabitants of about 1787 (Ghana Statistical Service, 2005).

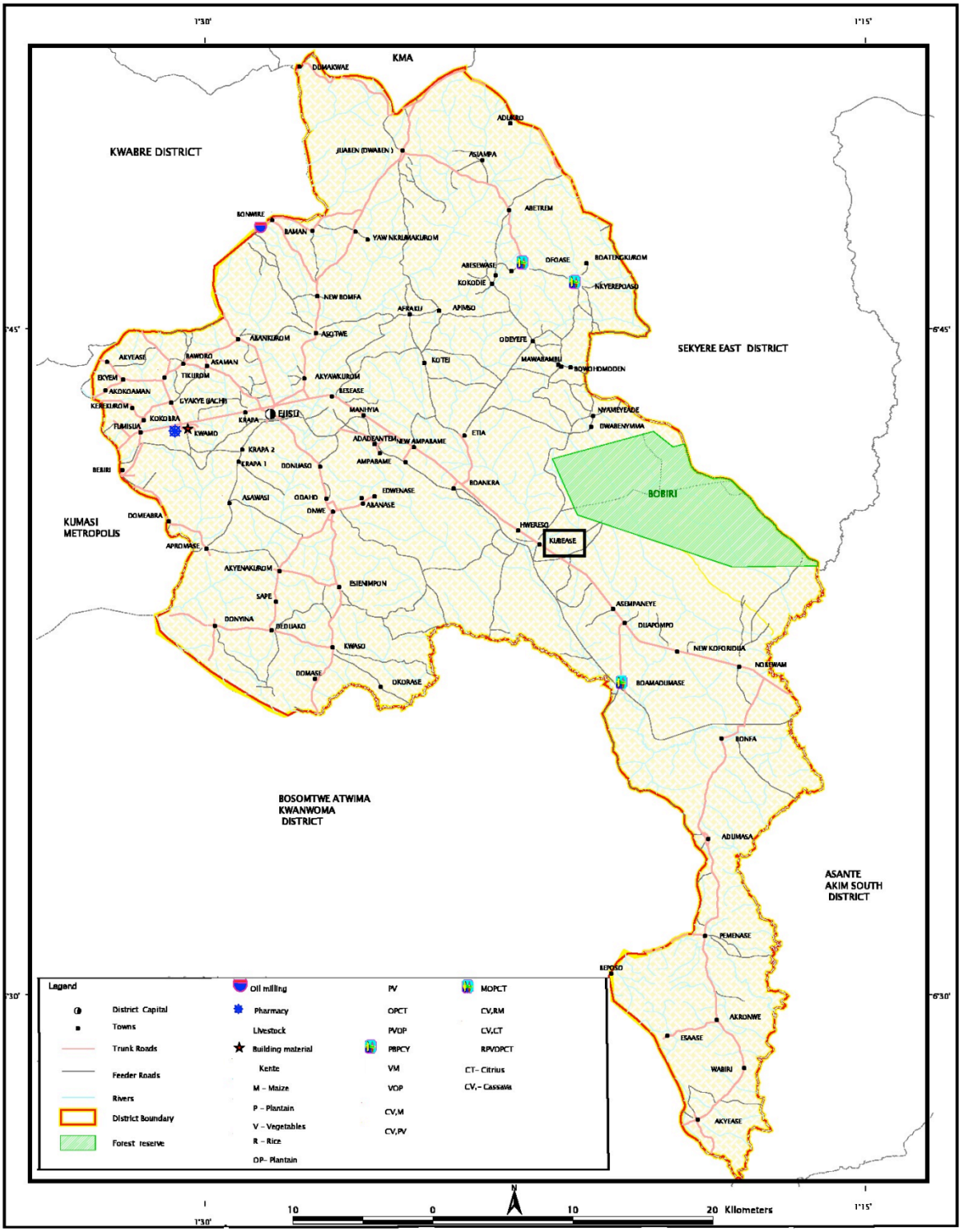
Figure 2.1: Ejisu-Juaben Municipality in National and Regional Context



Source: Author's Construct, 2012 with modification from Ghana Statistical Service, 2005

[2] There are 16 admitted farms within the Reserve most of which have been abandoned.

Figure 2.2: The Location of the Bobiri Forest Reserve and Kubease in the Ejisu Juaben-Municipality



Source: Ministry of Local Governmnet and Rural Development and the German Technical Cooperation (2010)

2.4 Community and Socio-Cultural Setting

According to the Forest Services Division (2012: 10), the Bobiri Forest Reserve lies within Juaben and Effiduasi Traditional Areas. The culture of the people living around the Reserve is inextricably linked with the existence of the Forest. The people believe the Reserve is a symbol of their cultural heritage given to them by their ancestors and they intend bequeathing it to future generations. Fridays are observed as the resting day for the gods and spiritual ancestors in the Forest. No individual or group of individuals are therefore allowed to do any work in the Forest on Fridays. Also, hunting of certain animal species regarded as totems of some clans is prohibited. Again, some plants believed to have certain spiritual powers and medicinal properties are conserved and people are naturally afraid to tamper with them. The observance of such taboos has contributed to the preserving of the ecosystem services of the Reserve.

The people of Kubease are mostly involved in farming and foraging. The Village falls under the paramouncy of the Juaben Stool. It has a sub-chief who owes allegiance to the Paramount chief of Juaben. The sub-chief protects the traditional and cultural values of the people together with other traditional heads. The village has an Assemblyman (democratically elected person) who represents the people of the Village at the Municipal level. Various committees have been formed in the Village to see to its day-to-day administration. The developmental issues of the village are left in the hands of Town Committee Members with the School Management Committees overseeing schools' developmental activities in the Village. There are also Village Watchdog Members responsible for protecting people and property. The Community Forest Committee (CFC) is responsible for the protection and management of the Forest Reserve.

CHAPTER THREE
ECOSYSTEM SERVICES, LIVELIHOOD AND STAKEHOLDER ANALYSES

3.1 Introduction

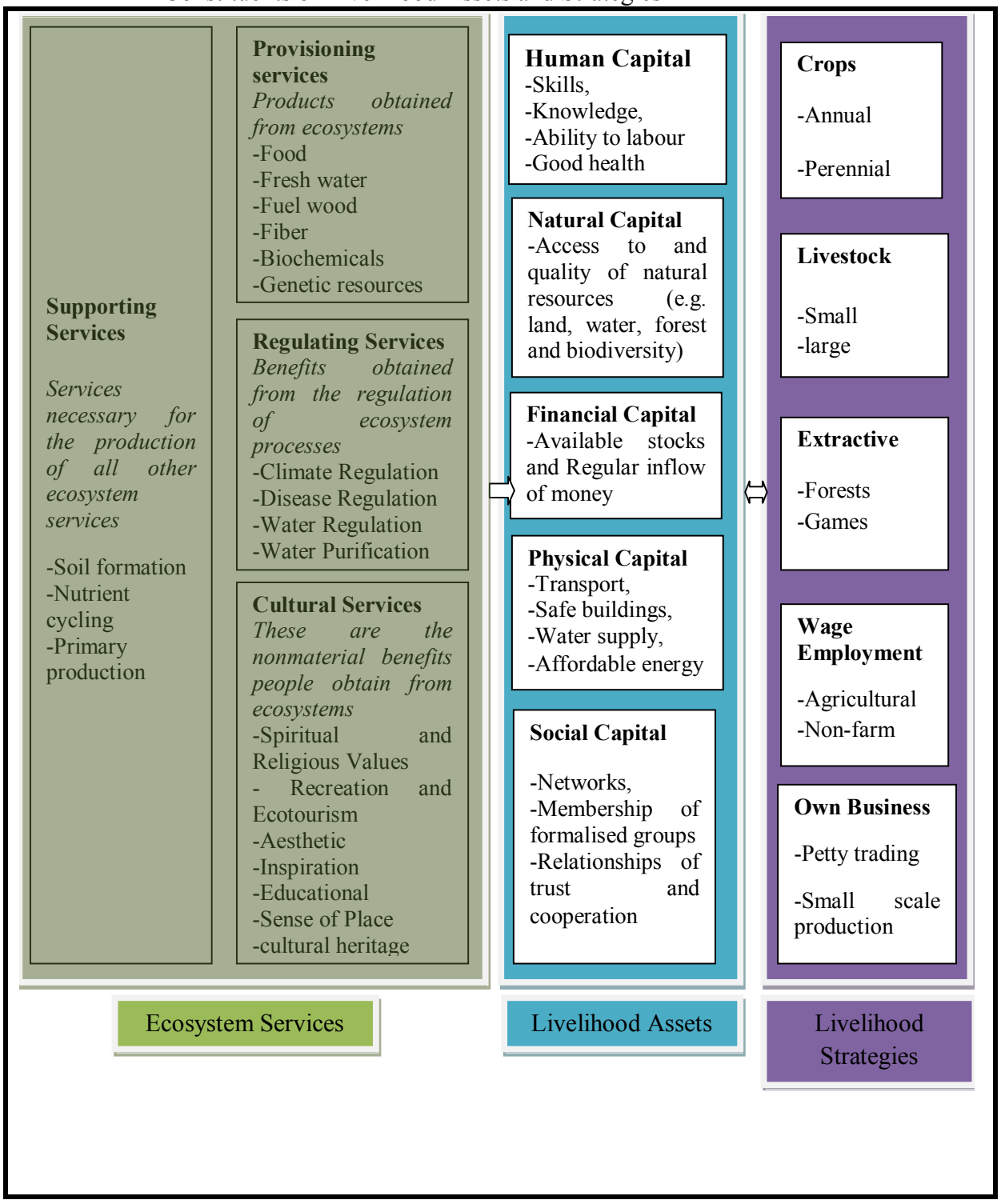
The focus of the Chapter is to understand ecosystem services, livelihood and stakeholder analyses. The relationship between ecosystem services and the determinants and constituents of livelihood assets and strategies are the main focus of discussion.

3.2 Ecosystem Services and Livelihood Analyses

Conceptually, the relationship between ecosystem services and the determinants and constituents of livelihood assets and strategies is illustrated in Figure 3.1. According to Millennium Ecosystem Assessment (MA) (2003: 77), there are great variations between and among the spatial and temporal forms of these relationships as well as their complexity. Some relationships are immediate; others are lagged. For instance, impairment of food production causes hunger today and malnutrition before long, bringing lassitude, impaired ability to concentrate and learn and increased vulnerability to infectious diseases.

The relationship in Figure 3.1 implies that changes in the ecosystem services affect the livelihood assets through impacts on security, the necessary material for a good life, health, social and cultural relations. These constituents of livelihoods assets are in turn influenced by and have influence on livelihood strategies as well as the freedoms and choices available to people (United Nations Environmental Programme, 2009: 78).

Figure 3.1: The Relationship between Ecosystem Services and the Determinants and Constituents of Livelihood Assets and Strategies



Source: Author's Construct, 2012 with modification of DfID's SLA, 1999 and MA's Classification of Ecosystem Services, 2003

3.2.1 Ecosystem Services

The concept of an ecosystem[3] provides a valuable framework for analysing and acting on the linkages between people and their environment (Millennium Ecosystem Assessment, 2003: 52). Ecosystem services (as depicted in Table 3.1) are the benefits people obtain from ecosystems (ibid: 3) and have the capacity to provide goods and services that satisfy human needs directly or indirectly (De Groot et al., 2002), hence satisfying livelihood needs. Tropical rainforests for instance, provide numerous goods and services that contribute significantly to human well-being[4] at local, national and global levels as a result of their important ecological functions (Millennium Ecosystem Assessment, 2005). As illustrated in Figure 3.1 and Table 3.1, a wide range of goods and services are thus provided by ecosystems that are linked to the livelihoods of people.

It must be noted that biodiversity and ecosystems are closely related concepts. This relation has been elaborated by the Millennium Ecosystem Assessment (2003: 8-10) as "biodiversity[5] is the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. It includes diversity with and between species and diversity of ecosystems. Diversity is a structural feature of ecosystems, and the variability among ecosystems is an element of biodiversity. Products of biodiversity include many of the services produces by ecosystems (such as food and genetic resources), and changes in biodiversity can influence all other services they provide. In addition to the important role of biodiversity in providing ecosystem services, the diversity of living species has intrinsic value independent of any human concern".

According to the World Resources Institute et al., (2005: 33) ecosystems provide the foundation for all human survival. This is because their production of food, air, soil and other materials support life. Everyone, rich and poor, urban and rural therefore depend on the goods and services provided by ecosystems. The rural poor particularly have a unique and

[3] An ecosytem has been described by the Millenuim Ecosystem Assessment (2003: 3) as a dynamic complex of plant, animal and microorganisam communities and the non-living environment that interact as a functional unit of which humans are an integral part. Ecosystems vary enormously in size; a temporal pond in a tree hollow and an ocean basin can both be ecosystems.

[4] Human well-being has multiple constituents which include basic material for a goof life, freedom and choice, health, good social relations and security. The Constituents of well-being as experienced and perceived by people are situation-dependent, reflecting local geography, culture and ecological circumstances (ibid).

[5] Biodiversity is the source of many ecosystem goods, such as food and genetic resources. The supply of ecosystem services can therefore be influenced by changes in biodiversity (Millennium Ecosystem Assessment, 2003: 48).

special relationship with ecosystems. This special relationship revolves around the importance of these natural systems to rural livelihoods. Central to the rural livelihoods is income either in the form of cash or in the form natural products directly consumed for subsistence, such as fish, fuel or building materials. The rural poor therefore derive a substantial fraction of their income from ecosystem good and services. Due to the nature-based character of such incomes, they are referred to as environmental income. The poor are especially vulnerable to ecosystem degradation because of the their dependence on environmental income.

Table 3.1 The Millennium Ecosystem Assessment's Classification of Ecosystem Services using Categories of Provisioning, Regulating, Cultural, and Supporting Services

ECOSYSTEM SERVICES	*DESCRIPTION*	*EXAMPLES*
Provisioning Services	Products obtained from ecosystems	-Food and Fiber -Fuel -Genetic Resources -Biochemicals, Natural Medicines, and Pharmaceuticals -Ornamental Resources -Fresh Water
Regulating Services	These are the benefits obtained from the regulation of ecosystem processes	-Air Quality Maintenance -Climate Regulation -Water Regulation -Erosion control -Water Purification and Waste Treatment -Regulation of Human Diseases -Biological Control -Pollination -Storm Protection
Cultural Services[6]	These are the non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences,	-Cultural Diversity -Spiritual and Religious Values -Knowledge Systems (Traditional and Formal) -Educational Values -Inspiration -Aesthetic Values -Social Relations -Sense of Place

[6] Cultural services are tightly bound to human values and behaviour, human institutions and patterns of social, economic and political organization. Thus perceptions of cultural services are more likely to differ among individuals and communities

		-Cultural Heritage Values -Recreation and Ecotourism
Supporting Services	Supporting services are those that are necessary for the production of all other ecosystem services. They differ from provisioning, regulating and cultural services in that their impacts on people are either indirect or occur over a very long time.	-Nutrient Cycling -Primary Production -Production of Atmospheric Oxygen -Soil Formation and Retention -Nutrient Cycling, -Water Cycling -Provisioning of Habitat

Source: Millennium Ecosystem Assessment, 2003: 56-60

Currently, there is a rapidly growing human demand for ecosystem services. At the same time, the capacity of ecosystems to continue to provide many of these services is being altered by humans. There is the urgent need to manage such relationship so as to enhance the contribution of ecosystems to human well being without affecting their long-term to provide services (Millennium Ecosystem Assessment, 2003: 27). That is, an assessment of the condition of ecosystems, the provision of services, and their relation to human well-being requires an integrated approach which enables a decision process to determine which service or set of services is valued most highly and how to develop approaches to maintain services by managing the system sustainably (ibid: 49). This assessment is paramount because regions facing the greatest developmental challenges tend to be those having the most trouble maintaining their ecosystems and their services (United Nations Environmental Programme, 2009:2). To meet the objective of this Study, particular interest is given to provisioning services upon which the livelihoods of the Study community are dependent.

3.2.2 Livelihood Analysis

The concept of livelihood links the variety of ways by which people make a living for themselves and the contexts in which they operate. Livelihoods deal with what people do with their resources available to them and how they cope with life. It can be inferred from Figure 3.1 that the available ecosystem services however cannot be disconnected from the issues and problems of access to the resources and the surrounding circumstances of changing political, economic and socio-cultural structures (Parrot et al., 2006). Ellis (2000) therefore defines a livelihood as the activities, the assets and the access that jointly determine the living gained by an individual or households. For the purposes of this Study, livelihoods

are the whole complex of factors that allow families to sustain themselves materially, emotionally, spiritually and socially (World Resources Institute et al., 2005: 33).

One important analytical tool that has emerged with which to analyse human-environment interactions in the developing world is the Sustainable[7] Livelihood Approach (SLA) (Jones and Carswell (2004:183). It fosters a deeper reflection of the critical factors affecting livelihoods and identification of the key entry points for improving such livelihoods (Ellis, 2000). The SLA is important as it helps in promoting interdisciplinary teamwork and providing a common language (Altarelli and Carloni, 2000). Again, it is a useful analytical tool that synthesises the perspectives of different disciplines and encourage effective multidisciplinary teamwork. It explicitly focuses on what matters to people and ensures a "focus [that] goes beyond economic and direct impacts" (Ashley, 2000:28).

According to the Department for International Development (DfID) (1999) and as shown in Figure 3.1, within the SLA, livelihoods consist of five types of "capital" or core assets. The SLA recognises that people, regardless of their state of poverty are endowed with assets/capital whose utilisation is influenced by structures (formal and informal organisations) and processes (policies and legislations). These assets of livelihoods are vulnerable to external factors such as trends, shocks or seasonality. To achieve desirable livelihood outcomes and reduce vulnerability to shocks, trends and seasonality, these assets are drawn on in one or more of the five types of 'capital' or core assets. These five capital or core assets are: Human capital-the skills, knowledge, ability to labour and good health; Natural Capital-access to and quality of natural resources (e.g. land, water, forest and biodiversity); Financial Capital- available stocks and regular inflow of money; Physical Capital-transport, safe buildings, water supply, affordable energy and Social Capital-networks, membership of formalised groups and relationships of trust and cooperation.

These assets constitute the livelihood building blocks and to a limited extent, they can be substituted for each other. For instances, the poor may draw on social capital such as family or neighbourhood mechanisms when financial capital is in short supply (Jones and Carswell, 2004: 191). In as much as the SLA is necessarily flexible in application, it is based on certain core principles (Jones and Carswell, 2004: 192) including:

[7] A livelihood is sustainable when it can cope with and recover from stresses and shocks, both now and in the future while not undermining the natural resource base (Cahn, 2002).

a. A Focus on People

The SLA puts people at the centre of development. Even though it might be already well embedded at the micro or community level, it is equally important at the macro-levels (e.g. in relation to economic reforms). In line with this, practical applications of SLA concepts:

i. Start with an analysis of people's livelihoods and how these have been changing over time;
ii. Fully involve people and support them in achieving their own livelihood goals;
iii. Focus on the impact of different policy and instrumental arrangements on people's livelihoods and
iv. Seek to influence these arrangements so they promote the agenda of the poor.

b. Holism

The concepts of SLA allow the identification of livelihood-related opportunities and constraints regardless of where these occur:

i. It is non-sectoral and applicable across social groups;
ii. It recognises multiple influences on people and seeks to understand the relationship between these influences;
iii. It recognises multiple actors (from the private sector to national ministries, from community-based organisations to newly emerging decentralised government bodies);
iv. It acknowledges the multiple livelihood strategies that people adopt to secure their livelihoods and
v. It seeks to achieve multiple livelihood outcomes, to be determined and negotiated by people themselves.

It must however be noted that the SLA in itself cannot provide all the answers and solve all the problems. This is fundamentally so as it pays insufficient attention to issues of power (Jones and Carswell, 2004:186). While it might critically *highlight* the influence of power imbalances (or structural causes of poverty more broadly), it does not make them any easier to change (Turton, 2000, emphasis in original). This has necessitated the urgent need to ensure a stronger integration of politics and political economy in SLA (Longley and Maxwell, 2003). The necessity for a stronger integration of politics and political economy in SLA calls for the need for stakeholder identification and collaboration in an effort to address and integrate their various claims of interest as well as power imbalances.

3.3 Stakeholder Identification and Collaboration

According to the World Wildlife Foundation (WWF) (2005), a stakeholder is any individual, group or institutions that have vested interested in the natural resources of the project area and/or who potentially will be affected by project activities and have something to gain or lose if conditions change or stay the same. The identification and selection of appropriate stakeholders is therefore a vital element of the collaborative process (Reed, 2000). Stakeholder identification and collaboration provide a comprehensive understanding of who the stakeholders are, their motives and main interest, their roles in the decision-making processes which are important issues to consider when addressing problems that affect a variety of interests.

To ensure significant benefits for sustainability[8] in light of environmental, social, cultural, economic and political uncertainties, stakeholder involvement is paramount (Medeiros de Araujo and Bramwell, 2000). The issue of sustainability can be achieved by considering the broader variety of actors where a complex web of interest and trade-offs between the different stakeholders are considered (Timur & Getz, 2008, p. 446). It has been asserted that the benefits of involving stakeholders include better decisions, increased accountability, stakeholder acceptance and local community empowerment (Bramwell and Lane, 2000a). Collaboration further adds to on-going policy making, as it provides an opportunity for people who are affected by development to share their knowledge and experiences (Ibid).

Timur and Getz (2002) argue that stakeholder identification and involvement has been identified as a significant step towards the achievement of partnership and Collaboration. This was further expanded and emphasis has been placed on planning with stakeholders rather than planning for them and involving all affected parties to search for common outcomes and interests (Hall, 2002). Collaboration is therefore seen as "a process of joint decision-making involving key stakeholders of a problem with a view to resolving conflicts and advancing shared visions" (Ladkin & Martinez, 2002).

[8]Environmentalism is back on the political agenda and has now been couched in the language of sustainability (Watts and Peet, 2004: 3). The 1987 Brundtland Commission Report more than once refers to poverty as both cause and consequence of environmental problems and claimed the basic needs of the poor must be fulfilled in order to ensure significant benefits towards sustainability (Baeten, 2000: 73).

It must however be emphasised that collaboration processes do not easily overcome power[9] imbalances with the involvement of all the stakeholders in a process but there is the need to recognises the existence of systematic constraints such as the distribution of power and resource flows (Healey, 1997; Reed, 1997a). This is because unequal power relations among different actors are key in understanding patterns of human-environment interaction and the associated environmental problems (Bryant and Bailey, 2000: 38). Power therefore plays an important role in the social relations of production and decision-making about the use of resources. These are however exercised in diverse arenas, on multiple scales and infused with cultural knowledge and value (Paulson et. al, 2003: 209).

These scales and arenas often manifested in the biophysical environment "simply a stage or arena in which struggles over resource access and control take place" (Zimmerer and Bassett, 2003: 3). The arena has primarily been devoted to questions of power, struggle and representation to the neglect of the connections of these struggles to the biophysical environment (Walker, 2005: 78). In addressing this neglect, Paulson et al. (2003: 212 emphasis is mine) has posited that:

> *"There is the need to concentrate on environmental decision making and conflict resolution; attention to the mutual collaboration with various kinds of social groups and social movements interested in the distribution of benefits, costs and risks on various scales; and concern with development models and discourses, together with their environmental and social consequences. Practical engagement with different* ***stakeholders*** *need to be part of the methodological commitment to understanding how environmental uses and conditions are affected by economic and political systems as well as the discursive and cultural construction of the environment".*

Hall (2000) therefore concluded that the intensity of collaborative relations should be viewed as a continuum ranging from "loose" linkages to stronger coalitions where there are broad mission statements and jointly conducted tasks.

The WWF contended that this collaboration process is dependent on trust, involvement and beneficial engagement for achieving a common purpose. Here, exclusion, advocacy and power are not used in order to reach the goal. The Foundation suggested that stakeholder collaboration could be a powerful approach to respond to problems that cannot be solved with separated efforts (WWF, 2000, p. 3.2). The Foundation concluded that it is likely

[9] Power in this sense has been conceptualised as social relations that has been established on the asymmetrical distribution of resources and risks (Hornborg, 2001:1) and it is located in the interactions among the processes that constitute people, place and resources (Paulson et. al, 2003).

to achieve success in the collaboration processes if stakeholders need each other to reach and achieve individual as well as common goals, where there is enabling grounds for negotiation among the parties and where the parties are willing participate in the processes (WWF, 2000, P.3.3).

For the purpose of this Study, collaboration is viewed as joint efforts and goes beyond inter-governmental relations and business arena (Jamal and Stronza, 2009) to engage a set of key stakeholders with a view of resolving conflicts and advancing shared ideas and responsibilities with the aim of achieving a common purpose and resolving common problems (WWF, 2000). Following from the proceedings of the International Tourism Research Conference in Stockholm (2008: 61), local residents, the host communities in this Study, are theoretically important groups of stakeholders in the Co-Management processes.

3.4 Community Stakeholder Involvement

One important stakeholder in successful natural resource conservation and management efforts is the community. Community participation in conservation efforts fosters a sense of ownership on the part of the community and can provide valuable knowledge about local environments and current impacts of natural resource conservation and management practices. Community involvement is an important aspect of stakeholder collaboration as well as the monitoring of focal species. This necessitates the need to design monitoring programmes to accommodate for people with often minimal scientific background whilst providing accurate and useful data (Bodmer et al., 1997).

'Host Community', mostly used in tourism literature is often presented as synonymous with "residents", "locals", "public" or "citizens" (Burns, 2004). An important characteristic of the host community is that it does not constitute a unified whole and its constituent groups of stakeholders and individuals are rarely homogeneous (Ashley and Roe, 1998). In line with this and for the purposes of this Study, a host community is used to refer to communities that are located in or near a forest and have access to the forest areas. These communities to a large extent depend on the forest for their livelihoods. According to the Forest Services Division (2012: 12), such communities fringe the Reserve with 5 km of boundary.

As a result of the divergent interests existing among host community members (Burns and Howard, 2003), it is important to recognize the variations in the level of support that exist

within the same community (Mason and Cheyne, 2000) and as such very important stakeholders in the forest conservation processes.

With reference to the participatory principle contained in Principle 22 of the Rio Declaration on Environment and Development, "Indigenous people and their communities, and other local communities, here, host communities have a vital role in environmental management and development because of their knowledge and traditional practices. Sates should therefore recognise and duly support their identity, culture and interest and enable their effective participation in the achievement of sustainable development (Brown, 1999: 6)."

According to Brown (1999: 1), forests are not one thing and that is particularly true of tropical forests and in looking at the issues, there is the need to take account of a number of variables[10]. There is the need to strongly motivate people and organisations in the host communities to participate in consultation and decision-making. This is often time consuming and demands a great deal of effort - often unpaid - and it can be an intimidating experience for non-technical members of the community. This can however be successful if the involvement programmes are those that involve all stakeholders, designed to improve the benefits people get from participation and lower the barriers to involvement (Collier and Berman, 2002: 7).

According to Brown (1999: 2), the rationale for community involvement in forest management has become important for various reasons among which are the proximity of the host communities which makes them the immediate custodians of the forest as well the stakeholders in closest touch with the forest and dependent on it in a wide variety of ways. Hence, they are best placed to ensure its effective husbandry. Also, the livelihood activities of host communities have a direct effect on the condition of the forest and their involvement in its management makes sound practical sense.

Again, local needs and interests should likewise not be ignored, particularly where forest products provide key elements of livelihoods as is often the case with NTFPs. Community involvement in forest management, where forests play important roles in rural livelihoods is likely to lead to substantial changes in the way forests are managed, thus ensuring the

[10] These variables are: The nature and value of the forest resources; The range and power of the stakeholders with an interest in them; The interest of the state in the forest resources, and the power of the institutions of the state; the capacity of the state to manage the forests ,and nature and interests of the local communities and their management capacities.

safeguarding and/or diversification of their multiple benefits. Equally, there is evidence from recent experience of community involvement that this can substantially improve the quality and condition of the forest, over and above the levels which governments are able to establish independently (ibid).

Brown (1999: 2) again asserts that because of their interests in multiple purpose management, local users are likely to be much better conservers of biodiversity than either single-interest industrial concerns or the interests that serve them. Despite frequent assumptions to the contrary, biodiversity may well be enriched, instead of diminished, by the activities of forest dwellers. In relation to efficiency considerations, there may often be little alternative but to involve communities in forest management. In many instances in the developing world, there is a very limited capacity for effective management of the forest resource by the public sector. Even where public sector management is feasible, the costs of exclusive direct management by the state may be prohibitively high and local management may be an important way of cutting costs. The involvement of communities and community institutions in forest management may help introduce discipline into the management of the sector and offer significant checks and balances on otherwise unregulated public services. Moreover, because of the way it impinges on many aspects of local life, the forest sector may be an important arena for the exercise of public voice.

CHAPTER FOUR

CONCEPTS AND APPROACHES CONTRIBUTING TO UNDERSTANDING AND PRACTICING CO-MANAGEMENT

4.1 Introduction

In providing a strong basis for analysing and discussing the Study variables, there is the need to work with a theoretical framework that is related to the subject under discussion. This Chapter therefore focuses on the concepts and approaches contributing to understanding and practicing Co-Management.

4.2 Concepts and Approaches Contributing to Understanding and Practicing Co-Management

For easy structuring of data and a better conceptualisation of the findings of the Study variables, concepts and approaches contributing to understanding and practicing Co-Management are employed. Co-Management between state[11] authorities and local people[12] is a relatively well-recognized management approach to reconcile cultural and biodiversity conservation in Protected Areas (PAs) (DeKoninck, 2005, Berkes, 2009). There has been the moral argument underlying this to the effect that conservation goals should contribute to, rather than conflict with basic human needs (Mahanty et al., 2007).

In as much as considerable attention has been given to the role of local and traditional knowledge in conservation (Ross et al., 2009), indigenous people are still struggling to find a role in PA decision making processes and management actions (Jaireth and Smyth, 2003) as well as in effectively managing their land together with PA management agencies (Izurieta et al., 2011).

This has been attributed to the fact that most PA assessment tools focus on biodiversity outcomes achieved by government managed protected areas and only recommend participation of local stakeholders in the assessment (Hockings et al., 2006). Such tools only narrowly focus on how to assess Co-Management when partners share management authority and have different cultural backgrounds (Cundill and Fabricius, 2010). They, thus focus on

[11] The concept and practice of Co-Management has involved necessarily the participation of the state (Berkes, 2007a)

[12] Co-Management can become effective and successful if the enthusiasm of the host community is considered as necessary

what the management wants to achieve (outcomes) and not on how the management arrangements work (Bellamy et al., 2001) and/or the extent to which the institutional arrangements themselves are functioning effectively (processes) (Plummer and Armitage, 2007).

There is therefore the call not to only assess the biophysical outcomes but the social, cultural and economic outcomes as well as the partnership arrangements and processes linked to the interests and rights of the stakeholders (Bauman and Smyth, 2007). This will go a long way to ensure good working relationships among the stakeholders and consideration of cross-cultural communication processes for making decisions together (Robinson et al., 2006). It is the purpose of the Co-Management approach to support such social, cultural and economic outcomes as well as the partnership arrangements and processes linked to the interests and rights of the stakeholders. According to the Millennium Ecosystem Assessment (2003), Co-Management agreements represent a particular case of people striving to sustain their well-being and concurrently the capacity of ecosystems to provide ecosystem services.

Co-Management has usually followed two options for the purposes of sustaining the availability and renewal of natural resources; either regulating the exploitation of specific set of resources (e.g., a valuable species) or it can be established over a delimited geographical area (e.g. protected area) (Borrini-Feyerabend et al., 2004). According to Berkes (2007a), Co-Management has been described as: power sharing, institution building, trust building, process, social learning, problem solving, and governance with each posing specific challenges to be addressed and alternatives to be balanced by the actors engaged as expanded in Appendix Table 1.

For the purposes of this Study, several crosscutting themes (concepts and approaches contributing to understanding and practicing Co-Management) have been highlighted and their basic elements are explained in Appendix Table 2. These include but are not limited to: Adaptive Management; Pluralism; Governance; Management of Conflicts and Social Communication to Natural Resource Management (NRM).

According to Grazia et al., (2007: 5-6), the **Adaptive Management** approach is based on the recognition that the management of natural resource is always experimental, that we can learn from implemented activities and that NRM can be improved on the basis of what has been learnt. In the **Pluralism** approach, autonomous and independent (or inter-dependent) groups

freely interact and collaborate on NRM issues on the basis of different views, interests and entitlements. A pluralist approach focuses on recognising, acknowledging and involving various actors, interests, concerns and values that exists in any society with respect to almost any subject.

The complex ways by which individuals and institution, public and private, manage their common concerns is expressed in the **Governance** approach. The management of such common concerns is dependent on the legitimacy of the political system and on respect shown by people for its institutions. Here, there is the need to build the capacity of such institutions to respond to problems and to achieve social consensus through agreements and compromises (ibid: 7).

The **Conflict Management** approach promotes dialogue and negotiation in a non-violent process towards constructive rather than destructive results in Co-Management . It involves addressing disagreements before they generate into hostility, supporting institutional actors to identify and select an option in which everyone can accede. It again entails recognising as well as intervening in the underlying causes of conflict and finding feasible means of preventing them in the future. The Approach identifies: the social actors involved; common areas of interest and some points of conflict (different values, interests and needs of the various actors involved); a forum for negotiation and some basic rules providing a framework for the actors concerned to meet and discuss issues together; some reliable data on the points of conflict; various options for action generated and discussed by the actors concerned; a written agreement on the agreed upon option and the legitimisation and the implementation of the agreement as the main constituents of modern conflict management approaches (ibid: 9).

Another important approach identified by Grazia et al., (2007: 11-13) in Co-Management is the **Social Communication**[13] approach. People bring about development and manage natural resources. There can be no change for the better without involving them, mobilising their capacities and energies and enhancing their knowledge and skills. Communication caters to all these human dimensions and is vital for any activity in which the participation of local people is envisaged and sought. In addition, effective communication generally has

[13] Communication media include: traditional (e.g. the spoken word, writing, theatre, songs, the arts); graphic (e.g. diagrams, illustrations, pictures, compositions, maps, films); electronic (e.g. videos, audiocassettes, television, national as well as regional and community radio, compact disks, digital versatile disks, the Internet)

remarkable personal effects, such as raising morale, enhancing the sense of one's own value and dignity and promoting social solidarity and collaboration. The processes and tools of effective communication do not discriminate against the weaker and less powerful in society.

Carlsson and Berkes (2005) have presented a set of functions that each Co-Management case should be concerned to satisfy. These set of functions are the allocation of tasks; exchange of resources; linking different types and levels of organisations; reduction of transaction costs; risk sharing, conflict resolution and powering sharing mechanism.

For the purposes of this Study, Co-Management is seen as a type of partnership between non-governmental and governmental natural resource users and managers in which management is formally shared, usually under an agreement (George et al., 2004)

CHAPTER FIVE
RESEARCH METHODOLOGY

5.1 Introduction

In this Chapter, the overall design of the Study, how the Research was carried out, as well as the methods used for the data collection and analysis are discussed. The approaches adopted for the Study and the quality and ethical concerns involved are also discussed here.

5.2 Research Approach

A qualitative investigation was used for the Study. This was considered to be the most appropriate for this Research as it enhances the exploration and interpretation of the Study elements (Brockington and Sullivan, 2003: 57). This new field of study as well as its exploratory nature demanded a more flexible and open research design rather than one that is highly structured and rigid. It again demanded participatory and collaborative relations in decision-making processes and hence the use of a qualitative approach.

This inquiry was guided by a case study[14] approach to unearth the factors that influenced the Study variables (Yin, 2003:1). The participatory nature of the Study required the use of semi-structured interviews that have been viewed as central to participatory approaches. The semi-structured interview guides ensures flexibility in the discussions while keeping the discussion within the research scope (Bryman, 2008:438-9). It also allows the interviewees to freely share their opinions with the researcher by placing a high value on informants' responses (Dunn, 2000) thereby allowing respondents to divulge more information and exposing the researcher to ideas s/he will never have anticipated from the outset of the research (Cloke et al., 2004).

5.3 Research Process

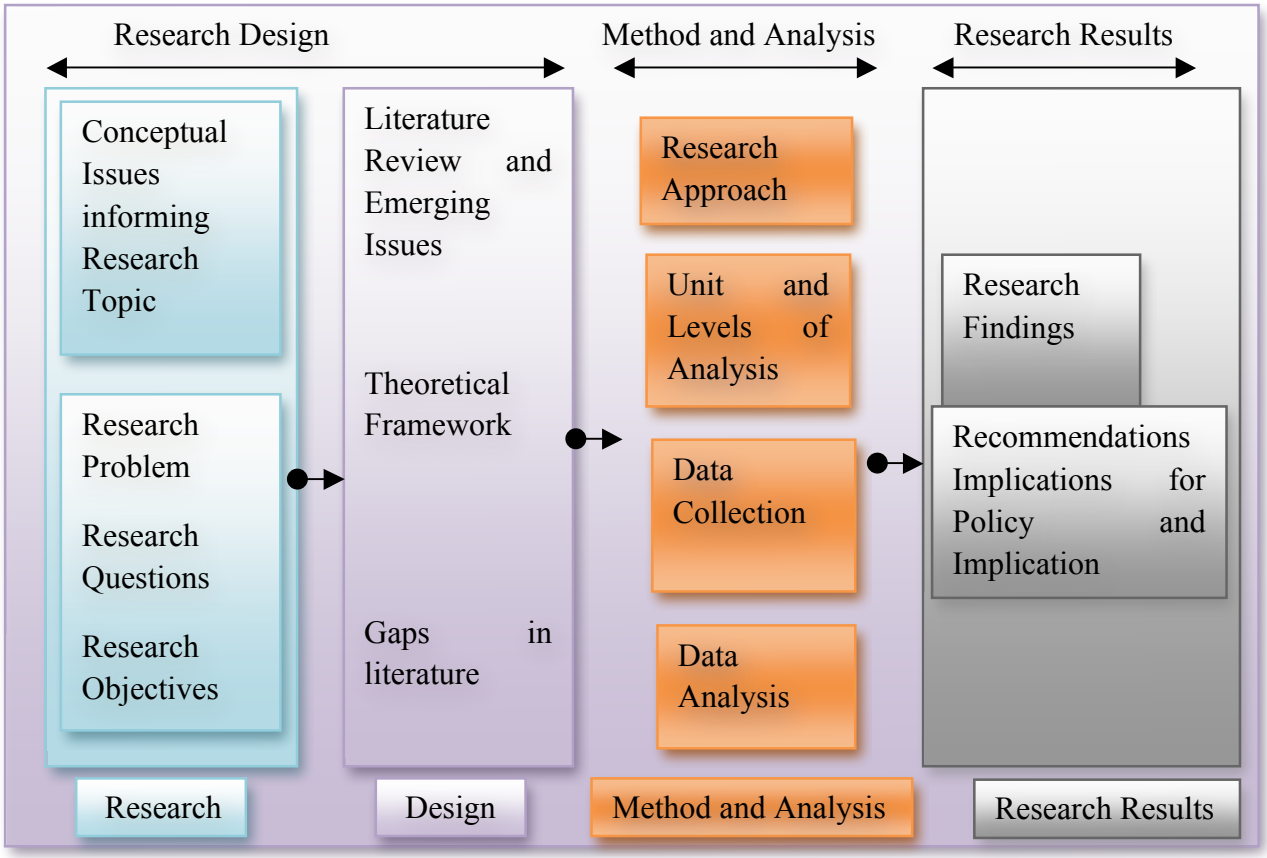
According to Kitchin and Tate (2000), empirical research needs to be situated in a broader academic discourse. It is in line with this that my broad research interest in development studies was key in informing this Study. I drew on advances made in participatory approaches and sustainable development in development studies and situated it in the

[14] Hammersley and Gomm (2007) argue that the strength of case studies is "that they provide vicarious experience, in the form of full and thorough knowledge of the particular". Case studies allow us to experience vicariously, unique situations and unique individuals (Donmoyer 2007). Stake (2007) also states that the best use of a case study is "for adding to existing experience and humanistic understanding".

sustainable management of ecosystems and their services. Here, my main focus was to find out how participatory approaches can be effectively integrated in sustainable management of forest ecosystems.

The Study therefore began with the investigation of secondary data[15]. The secondary data threw more light on the issue under investigation as well as the design of research questions, which guided the enquiry process (Gatrell and Flowerdew, 2005) during the actual field research. Figure 5.1 depicts the research process.

Figure 5.1: Research Process



Source: Author's Construct, February, 2012

5.4 Data Collection Methods

5.4.1 Preliminary Interviews

A preliminary visit to FSD and FORIG (the government bodies responsible for managing the BFR) and Kubease was made prior to the actual data collection to seek their approval.

[15] The secondary data were obtained from published documents, reports, journals, periodicals, the Internet, magazines, newspapers, national and other relevant state and non-state institutions that have interest in the sustainable management of forest ecosystems services

Contacts were also made with the other stakeholders to discuss my research intentions. In addition to the secondary data sources, the preliminary visit helped me gain a better understanding of the policy issues surrounding the sustainable management of the BFR as well as gathered more detailed information on the stakeholder groups and the other study variables. These preliminary interviews helped test the overall effectiveness of the field research methodology (Parfitt, 2005) and minimised the possible influences, for instance, researchers beliefs, values, etc., which could have affected the study process (Patton, 2002).

5.4.2 Sampling

Since the ultimate aim of this research is not statistical representativeness (Longhurst, 2003), coupled with the limited time frame and available resources, one host community (Kubease) was considered for this Research. Purposive and snowball sampling were used for the selection of residents as the main respondents (Mack *et al*., 2005: 5). In line with this, residents who depend on the Reserve for their livelihood were interviewed. In all, 50 heads of households were interviewed. My preliminary visit helped me select initial cases for interviewing. The initial cases identified then led the researcher to other cases. Recruiting informants via multiple initial contact points reduces selection biases markedly, if not avoid it all (Valentine, 2005).

5.4.3 Field Research

The Data collection process involved interviewing the Community, FSD and FORIG. Table 5.1 depicts the research questions, units of enquiry and the methods of data collection. The researcher employed semi-structured in-depth interviews with the respondents from Kubease, FSD and FORIG. The research instruments have been attached as Appendix Table 3. The researcher again used participant observation and visited the Reserve to familiarise himself with its current conditions. Brochures were also collected as important sources of information. The community and institutional surveys were therefore done using semi-structured as well as semi-structured in-depth interviews.

The time, place, duration and recording of informants' responses are critical in semi-structured in-depth interviewing (Sin, 2003; Smith, 2003). The interviews were conducted in the respondents' houses and mainly in the evenings as a result of their working schedules. Informed by the disadvantages with only taking notes (Dunn, 2000), interviewees' responses were taped-recorded and shortly after transcribed. This was particularly done when

interviewing FSD and FORIG. Shorthand notes were also taken right after the interview to capture important observations. The audiotaping helps avoid any pre-occupations with note taking by the interviewer (Cloke et al., 2004) and its play back ability helps recapture all lost details during note taking (Valentine, 2005).

Table 5.1: Research Questions, Units of Enquiry and Methods of Data Collection

Research Questions	**Units of Enquiry**	**Methods of Data Collection**
How important are the main ecosystem services of the Bobiri Forest Reserve (BFR) to the livelihood of host communities?	FSD, FORIG, respondents from Kubease	Semi-structured in-interviews, Participant Observation, Focus Group Discussion (FGD)
How has the dependence on the ecosystem services affected the current livelihood situation of the host communities?	FSD, FORIG, respondents from Kubease	Semi-structured in-depth Interviews, Participant Observation, FGD
What are the claims of interest of the various stakeholders involved in the use and management of the ecosystem services of the BFR?	FSD, FORIG, respondents from Kubease	Semi-structured in-depth interviews, Interview guides
How are the management functions, entitlements and responsibility of the BFR negotiated, defined and guaranteed by FSD and FORIG with the host communities to ensure the sustainable use and management of the ecosystem services of the BFR?	FSD, FORIG, respondents from Kubease	Semi-structured in-depth interviews, Interview guides

Source: Adapted from Mason, 2002

With regard to the assertion by Laurier (2003) and Cook (2005), there are no hard and fast rules on the length of a participant observation but the onus rests on the researcher to ensure that the time frame is adequate to gather the required data. A month long intensive participant observation was done in Kubease to collect complementary evidence (Kearns, 2000) about their livelihood activities within the Reserve. Here, a field diary and a digital camera were used to facilitate recollection and reflection of field events.

Focus Group Discussion (FGD) was also identified as an appropriate technique for collecting data on the issues under discussion. The fact that the participants were rarely homogenous with different interests also informed the decision to use FGD. Here, the participants freely talked and shared their opinions. They either corroborated or challenged responses that were not a reflection of the truth. The dynamism of the whole process was spiced up by the

different temperaments of the participants. Different ideas were brought from different angles with different interpretations.

The moderator introduced the major themes for the discussion and the participants were allowed to support and/or refute the views/opinions of other participants (Cameron, 2000). The themes for discussion were informed by insights from the semi-structured in-depth interviews and research questions. Deliberate attempts were made to encourage quiet participants to talk and prevent unnecessary digressions (ibid). The blend motivated each person to contribute to the discussion (Mack et al. 2005; Hennink, 2007:6).

As it was very difficult recruiting participants for the FGD due to their time schedules and other activities, one FGD was held with members of the Community who depend on the Reserve for their livelihood. In all, there were 21 participants for the FGD.

5.5 Data Analysis

The analysis of data proceeded in three stages: identification of themes, descriptive accounts and interpretative analyses. Based on the research questions, themes were identified from the data and derived inductively from the theoretical framework. These ensure that the themes remained grounded in the data (Fereday and Muir-Cochrane, 2006). The identified themes were given meaning through descriptive account and interpretative analyses

Thematic analysis was used for the data analysis as its usage helps identifies significant commonalities in qualitative data to form patterns that are referred to as themes representing the shared views in the collected data (Braun and Clark, 2006). It again facilitates a better understanding of the concrete views of interviewees for adequate reporting (Leech and Onwuegbuzie, 2007) as well as helping in communicating results from the Study through categorisation, which presents the authentic data without distortion (Simons *et al*., 2008).

The themes were analysed and presented in the words of the respondents and in some cases, direct quotes were used to embody the voices of all identified and interviewed stakeholders. This ensured a more reliable and credible research findings. Again, as an outsider to the Reserve and the Kubease community, it was easier to interpret non-verbal signs made by research participants. This is in line with Laurier (2003) warning that insiders may be too familiar with the setting during participant observation that they may not notice key

happenings. My outsider dimension in this issue of insider/outsider dimension (Crang, 2003) made the research findings more rigorous.

5.6 Establishing Rigour

In qualitative research of this nature, analysis is mostly dependent on subjective judgment of the researcher. There is therefore the urgent need to consider and observe some research ethics that validate and reflect the actual situation under study. By so doing, the research is able to disentangle people's interpretation of their own world and ensure the research methodology validates and reflects the actual situation under study (Bradshaw and Stratford, 2000). This renders the research findings more reliable and credible.

For this purpose, a preliminary visit was made to the Reserve and Kubease to ascertain their current situation. This gave first-hand information on how to maintain good impression and to have maximum co-operation as well as avoid problems during the data collection (Scheyvens and Storey, 2003: 100-104). The result was the basis for the selection of FGD as an important data collection method in the Community. It also informed about the dress code, mode of communication, their availability and other issues that could have hindered the data collection process. The inclusion of the FGD served the purpose of triangulation[16] in the Study (Bryman, 2008:379).

5.7 Ethical Consideration

It has been contended that research might actually harm, exploit or expose what is being researched (Scheyvens & Leslie, 2000: 119). Researchers are as such responsible for the integrity of the research and its processes (O'Leary, 2004: 50). To protect interviewees therefore, they were represented with pseudonyms to protect their identities; letter codes represent their gender and numbers indicate the order of the interview.

Again, permission was sought from FSD and FORIG.

All participants were informed that participation in the Study was voluntary and that their decision to withdraw at any point in time would be respected. Being aware of the importance of one's own positioning as a researcher in terms of historical, cultural, gender and socio-economic background and the fact that the researcher's background might taint the

[16] Triangulation is the use of different methods to study a phenomenon more thoroughly. Refer to Flick 2009 for the advantages of the concept of triangulation.

perceptions and interpretations s/he gets from respondents (Kapoor, 2004: 627), all respondents were informed about the academic nature of the Study without state, parastatal or any other organisation's involvement.

The result of this assurance was sincerity in communication (Scheyvens and Storey, 2003:146). Mutual trust was also established (Hennink, 2007:33) as both parties (interviewer and interviewees) agreed that the issues discussed would not be made public with reference to any specific person or name.

CHAPTER SIX
DATA ANALYSIS AND PRESENTATION

6.1 Introduction

The Chapter provides the setting for an in-depth understanding of the Study variables. The analysis and presentation have been organised under themes identified from the data and derived inductively from the research questions and theoretical framework.

6.2 Overview of Respondents and Key Informants

The survey analysis was based on information from the FSD, FORIG and key responses from the sampled population. The officer in charge of the Bobiri Forest Reserve at FORIG, the caretaker at the BFR, 2 Assistant District Managers (ADM $_{1 and 2}$) at the FSD, 2 Forest Guards (FGs $_{1 and 2}$) at the FSD and 1 researcher at FORIG were interviewed. A total of 50 persons were additionally sampled and interviewed from the Kubease Community. This was supplemented with a FGD of 21 participants.

All the 50 respondents undertake one form of activity or the other in the Reserve. These activities include farming, hunting, fuel wood collection, logging/Timber, arts and craft material, and medicinal plant collection among others. There were also combinations of activities carried out by respondents. These activities are either primary or secondary occupation to respondents.

In all, 30 male household heads and 20 women household heads were interviewed between the ages 25 and 60 years with average dependents of 6. Forty-Seven of the respondents have formal education with only 3 without any form of education.

6.3 Inventory of the Main Ecosystem Services of the BFR

It was made evident by ADM_1 at the FSD and the caretaker at the BFR during the fieldwork that the BFR functions as Production, Conservation, Research and an Eco-tourism site. The Reserve was described by ADM_1 as being one of the well managed in the Ashanti Region and the Country as a whole due to its existing excellent biological resources. My visit to the Reserve revealed that it hosts an Arboretum of about 1.1 hectares made up of about 102 different indigenous species. It is also a home to about 456 butterfly species and still counting according to the caretaker of the Reserve. The caretaker again talked to the function of the

Reserve as providing scientific and research interest, high ecotourism potential, source of modern and traditional medicine, wood and other forest related products as well as a source of NTFPs. It again keeps the soil intact, provides home to many plant and animal species, absorbs rainfall and produces clean air among others.

In line with the objectives of this Study, particular interest was given to the provisioning services of the Reserve upon which the livelihood of the Study community is dependent. Even though the Reserve produces a wide range of timber species, the Study focused on selected groups of NTFPs, which were found to be widely extracted and as such sustaining the livelihood of the people of Kubease during the fieldwork.

My interview with the FSD revealed that Kubease being a host community to the Reserve has domestic use rights (communal/admitted rights) to the Forest resources. This allows the locals to collect certain quantities of specific NTFPs for personal use without any payment. However, if these NTFPs are to be collected in larger quantities for commercial purposes, a permit is needed. One applies for the permit to the Forestry Commission (FC) through the FSD. The application is then reviewed and provided the activity will not negatively affect the health of the Reserve, the permit is granted. The amount of payment is dependent on the quantity of product collected. The following NTFPs were mostly collected from the Reserve.

6.3.1 Fire Wood

A major source of energy in Ghanaian villages is firewood. The situation is no different from the Kubease community. The people of Kubease gather firewood from the BFR for cooking, heating and other processing activities. It became evident during the FGD that people use different means to harvest the firewood. People responded to harvesting firewood by looping branches of mature tree, cutting shrubs and trees and in some cases felling matured trees. The respondents mentioned emire, papea, ofram, esa and okro among others as the most collected local wood species for firewood.

Those who collect the firewood for commercial purposes[17] make sales at the nearby bigger towns of Kumasi, Ejisu and Konongo. Such people depend on the fire wood collection as an important source of income and employment.

[17] People enter the NTFP trade because of a lack of alternative income-earning opportunities, retrenchment, poverty and the need for cash income (Shackleton and Shackleton, 2004: 663).

6.3.2 Hunting

According to FG_2 at the FSD, the rate of hunting in the Community is low. The head of households corroborated this during the interviews that the Community does not involve so much in hunting. It became clear at the FGD that a handful of people who are expert in hunting are involved in the hunting occupation. Hunting was not a major activity, as it cannot be done all year round. The ADM_2 revealed that hunting is prohibited between 1st August and 1st December every year. This period is the gestation period for the majority of the animals and is referred to as close season. The hunting periods are referred to as open seasons.

During the open seasons, methods such as shooting, dog hunting, trapping, cutlass hunting etc., are used for hunting. These methods are evident by the presence of traps and other signs of hunting such as empty cartridge cases. Wild animals[18] that are hunted include Duikers (Adowa), Antelopes (Otwe), Bushbuck (Kokote) and Deer (Wansane). Other small mammals include African Giant Rat (Kusie), Grass Cutter (Akrantee), Palm Squirrel (Opro) and other rodents.

These games serve as a source of animal protein for most of the household. There were few instances where these games are sold to supplement incomes. In such instances, they are sold in the Village or in nearby villages to people engaged in operation of chop bars. They are also most often sold near the main Kumasi-Accra road.

6.3.3 Arts and Craft Materials

The BFR provides rattan, bamboo, special tree species and many other forest resources as arts and craft materials. The interview with the Researcher at FORIG posited that Rattan (Cane) and a special tree for making pestle known in local parlance as womma are the two most dominated art and craft material in the BFR.

The survey revealed that different people use different arts and craft materials for different purposes. It was reported that rattan is used in basket making, crop-drying mats and fish traps. Canes are used either in whole or round form for making furniture frames while split or peeled canes are used for making basketry and matting.

It was reiterated that these arts and craft materials need treatment in one form or the other

[18] Names of hunted animals in the local dialect are in the brackets.

before they are used. For instance, rattan needs scraping to remove resine. It also needs to be boiled and dried in some cases before their usage.

6.3.4 Medicinal Plant Collection

Different plants are collected and used as medicine in rural areas in Ghana. This is much so in areas where access to modern health care facilities is absent. The presence of the BFR offers the Kubease community access to such medicinal plant collection. The Community depends on the Reserve for the collection of such medicinal plants, as they are cheap and easy to find. This helps in the curing and healing of a lot of diseases as well as saving lives. Specifically, these medicinal plants are used in healing fractures, stomach problems, piles and fever, boils as well as weaning babies among others. This practise has to a greater extent reduced the Communities dependence on the expensive and hard-to-reach health facilities in the bigger towns.

At the FGD, the respondents revealed that the roots, stem, barks, fruits, seeds, nuts and leafs of plants are used for such medicinal purposes. Such plants (names in local dialect) include twapea, mahogany, nyamedua, esro wisa and kokodua. Mango, pawpaw, wild yam and avocado are other forest foods collected. These forest foods supplement the diet of the Community and also provide healing values.

6.3.5 Other Forest Resources

The other forest resources provided by the BFR are snails and mushrooms. These are collected in seasons. During their seasons, they are part of the Community's diet. When they are collected in large quantities, some are sold to supplement other income sources.

At the FGD, it was brought to fore, that although mushroom is still prominent in the Reserve there is a scarcity of snails. The Community attribute the scarcity to the changing conditions of the Reserve.

It was evident through the interviews and the FGD that the livelihood of the people of Kubease depends on the NTFPs from the BFR. These resources are usually used on subsistence basis. The strategic location of Kubease to the Municipal capital where there is bigger market and its location on the main Kumasi-Accra road provide the Community with ready market. This helps households that sell part of their NTFPs to earn extra income and hence supporting their livelihood.

It was revealed at the FGD that some of the NTFPs are often given out as gifts, especially to the elderly who cannot go and collect these products from the Reserve. This practise is however rare and reemphasises the social relations of the people of Kubease. In as much as the BFR continues to supply these NTFPs, the people of Kubease will continue to depend on them and it will continue to be vital to their daily livelihood.

6.4 Forest Law Enforcement

Even though the Community has domestic use rights (communal/admitted rights) to the Forest resources, the current forest law restricts the collection of NTFPs above certain quantities. The law requires the acquisition of a permit for the collection of NTFPs when certain quantities that the FSD deems commercial are to be collected. The respondents were of the view that such law poses several challenges to their livelihoods. The Community members' responses showed that in as much as they are aware of such law aimed at maintaining the health of the Reserve, they are unwilling to obey it. The responses showed that the procedure for the acquisition of the permit is not cumbersome but the Community members are just not willing to obey it. The discussions showed that the Community members want a system where they can have free unregulated access to collect NTFPs.

It became clear that the Community's non-involvement in the design of such a law has resulted in their unwillingness to obey it. My interview with FG_1 revealed that efforts to educate the community members on the need to obey the law to maintain the health of the Reserve have been unsatisfactory.

In enforcing the law, a number of institutional structures have been put in place. The FSD, the Police Service, the Military, Traditional Authorities and the CFC are responsible for the enforcement of the law. The FSD in protecting, managing and conserving the forest resources does not have the power to arrest violators of the law. The Police Service and the Military are charged with the power to arrest and prosecute offenders. The CFC and the traditional authorities also collaborate with the FSD to monitor and report forest law violations.

6.5 Alternative Livelihood Interventions

The high pressure on farmlands in the Community and their inability to satisfy the livelihood needs of the people has forced them to become more dependent on the Forest resources for the collection of other NTFPs. According to Shackleton and Shackleton (2004), such NFTPs

function as a safety net option for people in difficult times and are gathered more extensively when there are little other livelihood options. In the Kubease community, the collection of these NTFPs as discussed in item 6.3 cannot be considered to be a sustainable alternative due to the decreasing availability of NTFPs in the Reserve coupled with the restrictions on the collection of such NTFPs.

Providing alternative livelihood that is sustainable is therefore imperative to take away the pressure on farmland and the other forest resources. The identification and implementation of sustainable livelihood interventions needs to be done in a participatory manner, backed by well-instituted structures and processes to see to their implementation and management.

An alternative livelihood survey was therefore carried out to determine alternative livelihood interventions available to the people of Kubease. Alternative livelihood interventions include activities or occupations that have relatively less negative impacts on the Reserve and can improve the welfare of the people in a sustainable manner. Such interventions have the capacity to help reduce the pressure on the forest resources and alleviate the poverty levels in the Community.

It has been posited that both primary and secondary livelihood activities can be improved if only the people involved do not have to learn a new activity. This is because learning a new livelihood activity is perceived to be riskier than strengthening a current livelihood activity (Roche, 2007). In corroborating this assertion, Ireland *et al.* (2004) argues that individuals in high poverty prefer improving current activities to alternative strategies because they carry higher risks. These assertions were however refuted during the fieldwork. The individual interviews as well as the FGD revealed that the Community members are willing to welcome alternative livelihood interventions that can help improve their current livelihood conditions provided such activities are environmentally, socially and more importantly economically sustainable. The willingness of the people to accept changes in their current livelihood activities during the FGD proved that such interventions would be successful if there are high levels of commitment to their implementation.

Efforts were made to identify how the implementation of such interventions can be successful. ADM_1 reiterated the need to ensure the Community's access to livelihood assets, capacity and their ability to manage them. In addition, there is the need to adopt participatory

approaches in the identification and implementation of such activities. This will ensure a sense of ownership from the Community.

It became evident during the one-on-one interviews as well as the FGD that the Community has no experiences with alternative livelihood programmes. The respondents argued that they are willing to support any intervention that offers feasible alternatives to farming or other forest-related livelihoods provided the intervention is relevant to their situation as a forest community. This calls for the urgent need to use participatory approaches that could enhance acceptability of alternative livelihood programmes as well as maintain the Community's long-term interest in them.

In an attempt to identify some alternative livelihood activities with the Community, the alternatives most mentioned were soap making, hairdressing, tie and dye, carpentry and dress making.

The dependence of the Community on the ecosystems services of the BFR coupled with the absence of alternative livelihood interventions necessitated the need to assess how such dependence and the lack of alternative livelihood interventions have affected the current livelihood situation of the people of Kubease.

6.6 Current Livelihood Situation of the People of Kubease

6.6.1 Human Capital

As is evident from item 6.2, most people interviewed (94%) have had one form of formal education or the other. Those without any form of formal education (6%) gave reasons for their non-completion and non-attendance of any stage of their educational life as basically financial, poor academic performance and lack of interest. The survey also revealed that the people lack the requisite education that would enable them to compete effectively for jobs in the formal sector. The people again lack the required occupational skills that would allow them to venture into different types of alternative livelihood activities. In addition, the FGD discussion revealed that the people lack the needed funds to train and establish themselves in the alternative livelihood activities that were identified with them. This has resulted in their over dependence on farming, petty trading and other activities in the BFR to make a living. The sustainability of the human capital of the Community is therefore in doubt due to the lack of requisite education to be employed in the formal sector, lack of funds to be trained in

different types of alternative livelihood activities and their lack of occupational skills to be occupational mobile.

The Community depend largely on their labour power for work. Good health therefore critically determines their ability to work. The absence of health facilities in the Community forces the people to depend on medicinal plant collection to meet their healthcare needs. It is only in critical situations that they seek healthcare in nearby health facilities. The hard to reach health facilities coupled with the Communities inability to pay for their National Health Insurance Scheme's (NHIS) premium prevents them from accessing healthcare in formal healthcare facilities. Again, this negatively affects the sustainability of the human capital of the Community.

6.6.2 Natural Capital

Land is an important form of natural capital in Kubease. Ownership of the Reserve is vested in the President of the Republic of Ghana in trust of their respective stools (Juaben and Effiduase) (Forest Services Division, 2012: 9). In as much as there are admitted farms in the Reserve, most of the farming activities take place on the off-reserve lands. Such farmlands are however scarce. Among the Akan tribe in which the Kubease community is located, families own land and chiefs are the main custodians of land. Land is therefore not sold but leased for a period of time after a small token referred to as *'drink money'* has been paid to the custodian of the land.

The Community's farming activities mostly taking place in the off-reserve are commonly used to grow all kinds of food and cash crops as well as for the collection of other NTFPs as discussed in item 6.3. Again, there are chainsaw operations in the Reserve most of which are illegal.

It was evident during the survey, FGD as well as my participant observation that such unregulated chainsaw activities, legal timber extraction exceeding their allocated yields and encroachment for farming are degrading the Forest. This has led to changes in the natural environment and a subsequent reduction in the supply of other forest resources such as snails. The sustainability of the natural capital of the Community was therefore described by ADM_1 as low and still decreasing.

6.6.3 Financial Capital

A common response from the Community was their need for financial capital for the purposes of acquiring other occupational skills so as to make them occupationally mobile. The Community however avoided bank loans due to the unfavourable terms attached to them such as frequent repayments and high interest rates. It was clear that the Community avoided bank loan as it is seasonal and one can be arrested if s/he fails to meet a weekly payment.

The insufficient financial capital has contributed to the Community's inability to explore other employment opportunities. This leaves them with farming mostly done on subsistence and small-scale basis as the main occupation in the Community. Due to the seasonality of the farming occupation as well as low prices of farming produce at local markets, farmers have trouble generating enough income to cater for themselves and their dependants. To cope with the seasonality and supplement their incomes, the farmers depend on the Reserve for the collection of other NTFPs.

Mostly, the young community members consequently resort to illegal chainsaw operations that they consider to be a quick way to make money and generate income and hence sustain their livelihood. Even though they are aware of the effect of their activities in degrading the Forest and its resources, they responded that they have no other option to meet their livelihood needs. Other sources of financial capital for the Community though very minimal were savings and remittances. The low financial capital of the people of Kubease corroborates the assertion by Kollmair and Juli (2002) that financial capital is the most versatile among the capitals albeit the least the poor are endowed with.

The sustainability of the financial capital in the Kubease Community is thus low resulting from the low-income levels and the limited access to other financial resources.

6.6.4 Physical Capital

As a '*pull factor'*, the major livelihood activities of the people of Kubease do not require expensive start-up capital. The primary farming inputs include seeds, cutlasses, hoes and other simple farming tools. However, the most expensive equipment is a chainsaw machine used in timber extraction activities. These are however purchased by rich chainsaw operators most of whom do not live in the Community. The location of the Community on the main Kumasi-Accra road also provides it with access to market for the sale of their farm produce

and other NTFPs. Even though the Community is based on agriculture, there is the absence of modern farming practices and equipment such as storage facilities, tractors, irrigation facilities as well as extension services. The absence of these contributes to the low production capacity of the people and a subsequent loss of harvest due to the absence of storage facilities. The sustainability of the Community's physical capital is thereby dependent on the type of physical capital under discussion.

6.6.5 Social Capital

The people of Kubease maintain complex relationships with their social relations and associations. It became evident during the fieldwork that the level of support the employed adults offer their dependants[19] far outweighs the assistance they get from their social relations. Each interviewee on the average caters for 6 other people.

The sub-chief and the assemblyman represent the Community at higher-level platforms. The sub-chief protects the traditional and cultural values of the people together with other traditional heads with the Assemblyman representing the people of the Village at the Municipal level. Various committees have been formed in the Village to see to its day-to-day administration. It can therefore be concluded that the sustainability of the social capital in Kubease is sufficient to support the livelihoods of the community members.

In conclusion, it can be said that main challenge in meeting the livelihood needs of the Kubease community is employment opportunities. The people have limited or no occupational skills and thereby making them occupationally immobile. Farming has therefore become the main occupation in the Village. This however does not generate enough income. To supplement their incomes, the Community resorts to the use of NTFPs provided by the Reserve to meet their livelihood needs.

In addition to these NFTPs-provisioning services upon which the livelihood needs of the people of Kubease are dependent, it also provides other regulating, cultural, and supporting services as discussed in Table 3.1. These other services attract other individuals, groups and organizations that have interests in the Forest and whose activities affect the Forest and/or

[19] These dependents are either immediate or remote. The former forms part of the interviewee's household and rely solely/heavily on them for survival while remote dependants are primarily extended family members who they less frequently support.

whom the forest and forestry programmes and policies directly or indirectly affect. Hence, the next section focuses on these other individuals, groups and organizations.

6.7 Stakeholder Analysis

Presented here is the overview of the various stakeholders identified to have different interests in the BFR. These stakeholders were identified through literature review as well as through the FGD and my interviews with FSD and FORIG. Description of their category and interest are presented in Table 6.1. It is not the purpose of this Study to extensively analyse the identified stakeholders based on their category and interest but to expose the reader to some basic characteristics of these stakeholders and their claim of interest. This provided the basis for understanding how the management functions, entitlements and responsibility of the BFR are negotiated, defined and guaranteed by the resource managers with the Kubease community to ensure the sustainable use and management of the BFR.

Table 6.1: Stakeholder Matrix of Bobiri Forest Reserve

CATEGORY	*STAKEHOLDER*	*TYPE OF INTEREST*
Policy and Legislative makers	1. Ministry of Land and Natural Resources (MLNR), 2. Parliamentary Select Committee on Land and Forestry etc.	Formulation of sustainable forest policy initiatives
Resource Managers	1. Corporate and Divisional Headquarters	Strategic policy direction
	2. District Forest Services Divisions	Operational planning and implementation
	3. Resource Management Support Centre (RMSC)	Strategic planning support and project site
	4. Ghana Wildlife Society	Conservation of fauna
Resource Users (Forest host Communities)	1. All communities fringing the Reserve with 5km off boundary	-Sustained benefits from the forest and involvement in implementation activities -Direct and indirect access to resource benefits (NTFPs collection) to support livelihoods
	2. Landlords	To obtain adequate and cheap timber for building.
Academic Institutions	1. Ghana Education Service (GES)	Teaching laboratory for students and pupils
	2. Faculty of Renewable Natural Resources (FRNR)	Practical teaching and research
	3. FORIG	Use as project site for research and tourism

Land Owners	1.The Juaben and Effiduasi Traditional Councils	Promotion of social development within their respective areas
	2.The Traditional Authorities	Rights of consultation to ensure optimal benefit flow to stool and subjects
Law Enforcers	1. The Military	To assist in tracking down illegal chainsaw and logging operations.
	2. Police and Judiciary	To assist in the arrest and prosecution of offenders
Private Sector	1. Timber contractors	Availability of resource for harvesting
	2. Small scale carpenters	To obtain wood for manufacturing
Public Agencies	1. Environmental Protection Agency (EPA)	Compliance with national environmental standards
	2. Department of Feeder Roads (DFR)	Shortest possible motorable roads linking communities
International Communities	International Timber Trading Organization (ITTO), Netherlands Government	Improved conservation regime through efficient application of project funds

Source: Adapted from the Forest Services Division, 2012: 12-13 and views of experts from the FSD and FORIG.

In the following analysis and for easy structuring of data and a better conceptualisation of Co-Management [20], the resources managers, landowners and resource users were selected for further analysis. In line with this, the FSD, FORIG, traditional authorities and the Kubease community were selected. This is because the BFR is under the management of FSD, which oversees and manages the Forest area on behalf of the government of Ghana. The FSD works hand-in-hand with FORIG, which is in charge of research of tourism development of the Reserve. Every parcel of land in the Reserve is under the custodian of the sub-chief and elders in Kubease. The sub-chief and the elders in turn administer it on behalf of the Juabenhene (Paramount Chief of the area). The Community also has communal/admitted rights to the Reserve. They are therefore imperative in understanding how the management functions, entitlements and responsibility of the BFR are negotiated, defined and guaranteed by the resource managers, land owners and resource users who have different interests and power in the use and management of the Reserve.

[20] As in item 4.2 and for the purposes of this Study, Co-Management was seen as a type of partnership between non-governmental and governmental natural resource users and managers in which management is formally shared, usually under an agreement (George et al., 2004).

6.8 Claims of Interest of Interested Stakeholders of the BFR

6.8.1 Resource Managers (FSD and FORIG)

The FSD of the FC is responsible for the management, development and utilization of the Forest resources. The District Manager (DM) heads the Division. It performs both managerial and regulatory roles. Its major managerial functions include pre-felling enumeration, control of logging, revenue collection, protection of the forest reserves, and regulation of off-forest reserve logging activities. The ADM_1 made it clear that the FSD is again responsible for other implementation arrangements under production, conservation and protection, watershed and landscape management, wildlife management as well as ecotourism arrangements. The Division performs different operations under the different implementation arrangements. The ADM_1 said common activities among these operations include external boundary cleaning and patrolling, boundary planting and tending, prevention of illegal farm establishment, monitoring the exact payment of stumpage and other forest fees, growth monitoring and yield prediction, stock survey and yield selection, maintenance of firebreaks, awareness creation and educational programme on biodiversity conservation and restriction of exploitation of timber and NTFPs in environmental protection areas.

The DM is supported by ADMs. At the local level, Range Supervisors (RSs) and FGs support the DM. The RSs perform technical duties and monitor the work of FGs while the FGs patrol beats-their areas of operation. The nature of their activities helps them easily detect illegal activities in the Reserve.

FORIG was created in 1963 to carry out research activities in the Reserve under the permission of the FC. The Institute supports the work of the FSD. The Institute conducts research that generates scientific knowledge and appropriate technologies that enhance the sustainable development, conservation and efficient utilization of the forest resources. FORIG has also been considered due to the fact it has the mandate to disseminate information for the improvement in the social, economic and environmental well being of the Kubease community.

6.8.2 Landowners and Resource Users

These categories of stakeholders are either natives or settlers who have land tenure rights in the Reserve. This group of stakeholders are essentially based in the Community. The

landowners are the traditional authorities (chiefs) who are the caretakers of the forestlands on behalf of the Community. The resource users rely on the Reserve for the collection of NTFPs to meet their livelihood needs. In the management of the Forest resources, this group of stakeholders cannot be ignored as they offer valuable services in forest management. The landowners and resource users collaborate with the FSD in reclaiming degraded parts of the Reserve. The landowners mediate between the FSD and the Community. Information from the community members on the locations, intensities and frequencies of occurrence of bushfires and illegal chainsaw operations are instrumental in the control of such challenges by the FSD as was admitted by the ADM_2. The CFC presents the Community's concerns to the District Forest Office as well as representing the Community at district forestry meetings.

These categories of stakeholders with different interest in the usage and management of the Forest resources put the Reserve in the most unbearable complex critical situation of satisfying the needs of the different stakeholders. The situation is much tensed between the resource managers and users. The resource users expect the Reserve to continually provide its services to sustain their livelihood while the resource managers seek to protect the overall health of the ecosystem through sustainable extraction of its resources.

This has more often resulted in some level of insecurity and conflict between them and thereby community activism which in most cases works against effective stakeholder collaboration and sustainable management of the forest resources. The survey revealed that the people most often feel they are being deprived of the use of their own forest resources and hence the violation of their rights. Their non-involvement in forest management policy making was also brought to fore as a point of tension between the resources managers and users. How then do the different stakeholders Co-manage the BFR?

6.9 Co-managing the BFR

According to Ministry of Land and Natural Resources (2011: 18-19), current collaborative approach towards sustainable forest management in Ghana involves consultation, needs assessment, investigation, synthesis and consensus building. These are aimed at ensuring equity and the fair distribution of benefits and efficiency in the execution of sustainable forest management prescriptions. Unfortunately, there are no legislative supports for collaborative forest management in Ghana. The lack of legislative supports for collaborative forest management in Ghana does not therefore support sustainable forest management aimed at

maintaining the health of forests to produce economically viable harvests and provide social and environmental benefits for now and the future as stipulated in the Ghana Forest and Wildlife Policy. Collaborative arrangements towards sustainable forest management in Ghana are therefore done on ad hoc basis. The case of the BFR is described below.

My interview with the FSD revealed that the increasing demand on the forest resources is putting pressure on the Reserve. This has created complex situations that are difficult to manage. The FSD posited that rural poverty, unemployment and the limited participation of the Community in the management of the forest resources are the underlying factors leading to the continuous and increasing depletion of the forest resources. This has called for the urgent need now more than ever to find ways and means of ensuring the sustainable management of the forest resources. Information from the FSD showed that, for management purposes, the entire Bobiri Forest Reserve is divided into two management zones: Protection[21] and Production[22] Management Zones.

6.9.1 Protection Management Zone

Within the Protection Management Zone are research areas and strict nature reserve. These were created to provide environmental protection of watersheds and potential biodiversity areas. The Protection Management Zone is home to the Bobiri Forest Arboretum, the Bobiri Butterfly Sanctuary and the Bobiri Guest House that serve as eco-tourism site. The eco-tourism site provides tourists with a conducted walking tour through a dense jungle under the cool shade of tropical trees and thickets as well as viewing of rare and exotic beautiful butterfly population.

According to the Forest Services Division (2012: 23), it is the objective of the Division to ensure the extent and quality of the protected zones are well maintained and improved. To do this, strict management prescriptions have been spelt out to ensure that these objectives are achieved.

6.9.2 Production Management Zone

The Production Management Zone is managed in accordance with harvesting schedules that define the time frame in which particular compartments can be logged. In line with this, all timber production areas are managed sustainably under a 40-year felling cycle with

[21] The Protection Management Zone has a total of about 1430Ha of land
[22] The Production Management Zone has a total of about 4075Ha of land

prescribed diameter limits for each economic timber species. Harvesting is done with the endorsement from the Director of FC, RMSC with approval from the Regional Manager of FSD. Currently, Carpo Limited and Paul Sagoe Company Limited hold the production area as a concession (Forest Services Division, 2012: 25).

6.9.3 Community Involvement in the Management of the BFR

It was evident throughout the fieldwork that the communal/admitted rights agreed on during the establishment of Bobiri Forest Reserve give the people of Kubease access to use the forest resources to meet their livelihood needs. According to the Forest Services Division (2012: 10), such communal/admitted rights include:

(i) The right to fish in streams and game hunting subject to the compliance with the provisions of Wildlife Conservation Regulation 1971 (1685). Hunting is however, prohibited between 1st August and 1st December (Close Season);
(ii) Collection of snails, honey, mushrooms, wild yams, medicinal plants, fruits, fuel wood (deadfall only) household and agricultural equipment and building material for domestic uses with free permit issued by the District Manager;
(iii) Access to existing bush paths provided the forest vegetation is not tampered with and;
(iv) Rights to farm within admitted farms

These rights make it imperative to involve the Community in the conservation and sustainable management efforts of the forest resources. This will go a long way to ensure the maintenance of environmental stability and the continuous flow of the optimum benefits from the social and economic goods and services that the Reserve provides to the resource managers and users now and in the future.

Here, reference was made by the ADM_2 to the 1994 Forest and Wildlife Policy. The ADM_2 stated that the Policy has collaboration as one of its guiding principles. The Policy recognises the rights of host communities to have access to natural resources for maintaining a basic standard of living. The host communities must then ensure the sustainable use of forest resources. The lack of legislative support makes it difficult to effectively implement such a policy and keeping the commitment of the parties involved.

However, at the local level, efforts have been made to get Kubease community involved in the management of the BFR through a system referred to as the Modified Taungya System (MTS). This was evident during the FGD as well as the one-on-one interviews. The MTS is an initiative to replant degraded areas within the Reserve. Under this system, the FSD

allocates degraded areas to farmers to grow food crops while planting and tending timber species. The FSD supports farmers with tree seedlings to plant along with their food crops. The arrangement is such that when the tree species grow and their canopies close, farmers move and may be allocated new plots of land for farming. Under the MTS cultivation of cash crops is not allowed, as crop cultivation cannot continue after canopy closure. Here, the farmers are supposed to get 40% of the proceeds from the trees they tend on their farms.

Farmers at the FGD were however not entirely satisfied with the MTS. The farmers complained of not getting the required 40% from the proceeds of the trees they plant. Due to inadequate checks, very few farmers currently replant trees on their farms under the MTS in the Reserve. The farmers are again not willing to tend the trees to full growth under the MTS after harvesting their crops since they have to move when the tree canopies close.

Speaking to the MTS again, the Farmers at the FGD pointed out that they need funds to undertake the farming activities that are not available. In addition, authorities in charge of the System demand payments from them before demarcating the plots. There was also the concern that the FSD does not provide the needed farm inputs like seeds, cutlasses and money for the clearing and maintenance of their farms.

The farmers therefore lamented that the MTS has not and cannot help address their livelihood needs under the current circumstances. They therefore call for the need to provide them with incentives such as farm inputs and credit facilities to help them intensify their farming activities and thereby making farming under the MTS more lucrative and attractive. The farmers were again of the view that for the System to be effective, they need to be paid the 40% proceeds from the trees they plant. Calls were made by the researcher at FORIG to intensify education and awareness creation in the Community about the workings, implementation status and opportunities available for effective collaboration in the implementation and the successful execution of the modalities in the MTS. The Researcher at FORIG also reiterated that the need for the FSD to maintain the modalities in the System as well as make changes where needed.

6.9.4 Strengthening Co-Management Practices of the BFR

Owing to the fact that the farmers at the FGD were not entirely satisfied with the MTS as a means of co-managing the BFR, attempts were made during the fieldwork to identify ways by which collaborative management of the BFR can be strengthened. It was identified during

the fieldwork that co-managing the BFR is one of consultation with limited exchange between the people of Kubease and the FSD. The result is the continual degradation of the Forest resources due to desire of the locals to meet their livelihood needs. This is similar to what Tyler (2006: 110) referred to as an open-access[23] situation in which everybody's property is potentially nobody's concern and appears to be a situation of Hardin's 'tragedy of the commons'[24] (Hardin, 1968). Even though the BFR is not open-access, it is a common property resource described by Ostrom (1990) as a situation where one person's use subtracts from another's use and where it is often necessary, albeit difficult and costly, to exclude other users outside the group from using the resource. The ADM_1 described this common property resource with reference to the BFR as a silviculture way of sustainably managing the Forest resources.

Accordingly, Tyler (2006: 111) suggests a strong argument for Co-Management approaches to NRM because resource users need to cooperate and work together with other stakeholders to ensure future sustainability. He added that Co-Management has become important as resource users now absorb the risks of natural resources rather than the resource managers. Adding to this, Ostrom (1990) posited that, interdependent resource users can organize and govern themselves to obtain continuing joint benefits under the right conditions despite the tendency for opportunist behaviour such as free-riding.

There is therefore the need to move from consultation with limited exchange to collaboration. Power sharing and the delegation of management functions between the resource users and resource managers supported with legal backing are imperative for collaborative approaches towards sustainable forest management of the BFR. The Kubease community should be seen as equal partners with the FSD and the other stakeholders.

Embedded in Co-Management are the issues of power sharing and institutional structures. According to Jentoft (2007), power sharing is implicit within Co-Management and governance but that does not mean however that power is or should be necessarily equally shared. Power sharing in Co-Management of forest reserves is facilitated through agreement of functions of community-based forest organisations (CFC in the Kubease community), resource managers, resource users, landowners and other stakeholders.

[23] An open-access situation is the result of resource managers limited capacity to effectively monitor and manage resources

[24] The 'tragedy of the commons' argument is that individuals have no regard for common resources except to maximize personal gain

The survey revealed that in co-managing the BFR, there are no established Co-Management structures to facilitate effective participation in decision-making by all stakeholders. There are therefore no guidelines setting out the functions and roles of all stakeholders in co-managing the BFR. The result has been the power imbalances among the different stakeholders in co-managing the BFR as found out by the Study.

To overcome this power imbalance and ensure mutual cooperation towards sustainable management of the BFR, understanding social capital is important as it affects the functioning of Co-Management. There has been theoretical and empirical emphasis on the importance of social capital in NRM (Pretty and Ward 2001). Lin (2001) defined social capital as resources that are embedded in the social structure and are differentially accessed and/or mobilized in purposive actions by social actors. Over the years, the concept of social capital has been extended to include common rules, norms and sanctions, reciprocity, exchanges and relations of trust. Trust among the different stakeholders in managing the BFR will ensure more fruitful interactions and avoid conflicts that work against the modalities of co-managing the BFR. Here, all parties must trust and work together to deliver on agreed tasks.

Co-Management has the prospects of seeking and incorporating the views of resource users in the design and implementation of management interventions as well as enhancing the legitimacy of any actions that are subsequently taken. This increases the host communities' willingness to adhere to sustainable management practices as well as increasing the exchange of information between resource users and resource managers and thereby reducing costs and further improving decision making processes. In an attempt to enhance the position of resource users as disadvantaged groups by giving them direct representation in decision making and allowing them to benefit from collective action, the practice of Co-Management cannot be ignored (Ogwang et al., 2009: 54) as it allows stakeholders in NRM to assume clear obligations, roles and responsibilities (Tyler, 2006: 116).

6.10 Revenue Disbursement Arrangements

My visits to the FSD revealed that the Office of Administration of Stool Lands (OASL) and the FC are responsible for the management of the proceeds from the BFR on behalf of the stools/landowners. It is the duty of the FC to manage the Reserve and collect revenue in the

form of stumpage. The OASL is charged with ensuring that the stool/landowners are fairly treated in the context of the prevailing disbursement law.

As per the revenue arrangement, the FC gets 50% of any shareable revenue from the Reserve and off-reserve. The sharing arrangement is such that the net revenue from stumpage/rent after providing for FC's 50% management fees and 10% for the OASL, the remainder is deemed as 100% and disbursed as follows: 25% to the Stool; 55% to the Municipal Assembly and 20% to the Traditional Council. The 50% share of the revenue to the FC is applied to finance staff remuneration, administration operational (services) and investment (capital) expenses.

What became clear during the interviews was the Community's concern in not knowing the use of their share of the social and economic benefits from the Reserve. In as much as the people were aware of the royalties paid on their behalf to the Stool, Municipal Assembly and the Traditional Council, they are not aware as to how it is used for the development of the Village and the betterment of their lives. The people interviewed therefore shared strong resentment about this unfortunate situation. Suggestions were, however, that the Stool, Municipal Assembly and the Traditional Council should be open, transparent and accountable in the usage of their share of the revenue from the social and economic benefits from the Reserve. It was further added that any infrastructural development from such revenues should be named as such. Such initiatives will make the people feel as though they are getting a fair share from their own Forest and hence their increase support and commitment to the sustainable management of the Reserve.

CHAPTER SEVEN
RECOMMENDATIONS FOR POLICY PLANNING AND CONCLUSION

7.1 Introduction

The Chapter recommends appropriate interventions for effective and sustainable policy action for sustainable management of forest resources based on the emerging findings. This provides a better appreciation of the study based on the reflections of the issues discussed. This is of particular importance for policy interventions and actions. On the bases of these, further research recommendations are made and conclusions drawn.

7.2 Recommendations for Policy Action

These recommendations seek to provide an overall guiding principle for policy action on how the management functions, entitlements and responsibilities of forest ecosystems should be negotiated, defined and guaranteed among various stakeholders for the sustainable management of forest ecosystem services in Ghana.

1. There is the urgent need to enact legislation that supports collaborative forest management in Ghana. This will go a long way to ensure support for sustainable forest management aimed at maintaining the health of forests to produce economically viable harvests, provide social and environmental benefits for now and the future. There is also the need for such a legislation to consider allocating greater portion of benefits accruing from resource management towards the development of host communities.
2. Efforts should be made to strengthen local government institutions in promoting the sustainable utilization and management of the social and economic benefits from ecosystem services. Community level governance should be enhanced to ensure that revenues received are used in an open, transparent and accountable manner. Community level institutions should therefore be well equipped to directly receive, plan for and utilise these resources.
3. There exists a complex system of ecosystem and human well-being linkages that require multi-disciplinary approaches to fully appreciate. There is the need to understand these ecosystem-human-well-being linkages through proper information dissemination and management without treating the different aspects as independent. When this is done, the distribution of benefits from forest resources and people's

impact on ecosystem services will be clearly understood.

4. Deliberate actions should be taken to strengthen educational activities in forest host communities. These educational efforts should be aimed at sensitizing the community on sustainable forest management issues. To this end, the communities will be informed and local/indigenous knowledge on sustainable forest management practices enhanced.
5. Concerted efforts should be made to identify alternative livelihood activities with forest host communities. This will help reduce their dependence on the forest resources and thereby improve the livelihood conditions of the host communities while maintaining the overall health of the forest ecosystem services. There is also the need to build the capacity of forest host communities and support them in exploring alternative livelihood interventions that are sustainable and viable in meeting their livelihood needs as forest communities.
6. All stakeholders should be involved in various stages of forest policy formulation processes. Considerations should however be given to their stakes, roles and capacities. Developing an integrated approach to forest management with the involvement of all stakeholders is imperative. By so doing, a balance between three objectives – conservation, sustainable use and fair and equitable sharing of the benefits arising out of the utilization of the forest as proposed by the Convention on Biodiversity will be achieved. Multi-stakeholder forums should be continually held in this direction to help build confidence among the different stakeholders.
7. To ensure that Co-Management works, community-based forest organisations such as the CFC should be registered with the MLNR and their activities streamlined. Efforts should be made to develop forestry Co-Management guidelines for all forest reserves that set the functions and roles of all stakeholders.
8. Resource managers do not usually see resource users as equal partners. Co-Management processes should therefore be seen as a dynamic process that can change the nature of power sharing over time. Here, power sharing should be recognised as a process that evolves through interaction, joint working, capacity building and experience. There is therefore the need to effectively analyse and understand the nature and degree of power sharing in developing Co-Management guidelines.

7.3 Suggestions for Further Research

The Study recommends the following areas for further research:

1. The Study recommends a further research into the utilization and management of Revenues from the BFR for the development of the Kubease Community;
2. As was evident in the Study, dependence on ecosystem services affects and are affected by the need for food security. The Study therefore proposes a further study into how the management of ecosystem services can sustain for security and agricultural development;
3. The linkages of ecosystem services to poverty reduction is also suggested;
4. Another interesting area that requires further study is how the tourism potentials of the BFR can be harnessed to serve as a sustainable local livelihood strategy and nature conservation;
5. As changes in climate impact on biological diversity and thereby on ecosystem's ability to deliver goods and services for human well-being, there is the need to look into climate change and ecosystem services;
6. A further study into the coping strategies of forest reserve host communities is also recommended.

7.4 Conclusion

The livelihood of forest host communities is largely dependent on the ecosystems and the ecosystem services provided by the forest. Such forest resources therefore become critical to the well being of its host communities. The situation is complicated when the forest is designated as a reserve. When forests are put under reserve in poverty-dominated regions, there is always the tension between the resource users expecting the reserve to continually provide its services to sustain their livelihood and the resource managers seeking to protect the overall health of the ecosystem through sustainable extraction of its resources. This was the case with the BFR and the Kubease community, a host community to the Reserve.

In this Study, the absence of alternative livelihood activities for the people Kubease has increased their dependence on the BFR to meet their livelihood needs. In this Community, the ecosystem services from the BFR constitute a direct life-blood for the majority of the people. While the major occupation of the people of Kubease is farming, this activity does not fetch them enough returns to meet their livelihood needs. This has increased their dependence on

the BFR to sustain their livelihood. The result is the high pressure on the ecosystem sustainability of the BFR as well as an increasing stress on the BFR resulting from the nature-base livelihood of the Community.

Thus, exist the need to call to ensure a collaborative approach towards sustainable management of the BFR through consultation, needs assessment, investigation, synthesis and consensus building. When this is done, there will be equity and fair distribution of benefits and efficiency in the execution of sustainable forest management prescriptions of the BFR aimed at maintaining the health of the forest resources to produce economically viable harvests and provide social and environmental benefits for now and the future.

In conclusion, the following words are worth echoing:

Box 7.1: Expected Benefits of Co-Management

The primary advantage of Co-Management is that with the right institutional and legislative framework, it allows the knowledge and understanding of all stakeholders to be reflected in making and implementing decisions. Resource users directly tend to have a greater knowledge of their local environment. Once suitably organised and motivated by a sense of ownership, and funded through revenue-sharing, they are then in a position to respond to signs of local overexploitation or to damaging activities and to lobby for appropriate changes in policy.

Source: Ogwang et al. (2009: 54).

Word Count: 18 098

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APPENDICES

Appendix I

SEVEN FACES OF CO-MANAGEMENT

Appendix Table 1: Seven Faces of Co-Management

FACE	*DESCRIPTION*
Power Sharing - decision making and responsibilities	-there is the devolution of power from the State to host communities over natural resources and involves them in decision making -the shared power can vary considerably.
Institution Building - maturity of platform for collaboration	-the partnership arrangements require capacity and will both in the civil society and within the state. -Institutional traditions and the spirit of the policy define distinct platforms
Trust Building- requisite for cooperation	-ensures collaborative working relationships. -there is the need for mutual respect and integration due to possible cultural differences
Process - temporal dimension	-Evolution and development: collaboration among parties requires time to stabilize -Co-Management can be the result of a long-term deliberative process of negotiation.
Social Learning-adaptation[25] and resilience[26]	Uncertain social and natural environments require social memory to respond and adapt to changes; direct practice and participation is key. -Use of multiple kinds of knowledge and perspectives can enhance social learning.
Problem solving - functional dimension	-Building consensus and generating alternatives to cope with change and complexity. -Co-Management relies not only on legal structures but on effective social-ecological functions
Governance - authority distribution)	-Participatory and flexible people-centred management systems involve networks and Partnerships among state, private, and civil society actors. -Coordinating between multiple levels of decision making and involvement

Source: Berkes 2007a

[25] Adaptability is the of people to manage for resilience (Walker and Salt, 2006: 163)
[26] Resilience is the amount of change a system is able to absorb without altering its functions, structure and feedbacks (ibid: 164)

Appendix II

CONCEPTS AND APPROACHES CONTRIBUTING TO UNDERSTANDING AND PRACTICING CO-MANAGEMENT

Appendix Table 2: Concepts and Approaches Contributing to Understanding and Practicing Co-Management

CONCEPTS AND APPROACHES	*BASIC ELEMENTS*
Pluralism	-different categories of social actors–for example governmental and non-governmental, groups and private individuals, local communities and outsiders has entitlements to local resources–bearing important complementary capacities for NRM. -communities as social actors provide the most natural and effective unit of identity, integration and defence for many under-privileged groups and individuals. Communities are however not homogenous entities and their internal sub-divisions should be recognised. Thus, while keeping their basic cohesion and identity, a plurality of values, interests and concerns should be recognised within any local community.
	-for equity and justice, a multiplicity of views and voices in the negotiation process is a fundamental pre-condition. Yet, it does not follow from this that all views and voices are equal, that they all carry the same weight or are all equally entitled to participate in the negotiation of the Co-Management plans and agreements.
Adaptive Management	-explicit NRM objectives and explicit hypotheses on how they are to be achieved (including monitoring indicators; -prompt collection of data (monitoring indicators);- on-going evaluation of monitoring data and NRM results and -coherent changes in NRM practice in line with the results obtained and the lessons learned
Governance	-it is a process but not a system of rules or an activity; -is based on compromise and not on domination -involves both private and public actors - it is generally based on an on-going interaction and not necessarily formalised
Conflict Management	-taking care of disagreements before they generate hostility -exploring a multiplicity of options for agreement and the subsequently selection of an option that everyone can live with -preventing the underlying causes of conflict in the future by recognising and intervening in them

Social Communication[27]	-the weaker and less powerful in society are not discriminate against by effective communication processes -effective communication understand the language(s) in which people describe their own reality, including fundamental beliefs, values and concepts (such as time, space, matter) -any information conveyed should be truthful, fair and reasonably complete -local cultural traits and norms should be respected by any awareness-raising initiative -any training initiative should be offered with an eye to its social implications and should be done to enhance not only skills but also social equity in the relevant context -there is the need for social communication initiatives to include plenty of occasions for dialogue and discussion as well as given the opportunity for everyone to express their own views, to ask questions and to dissent.

Source: Grazia et al. 2007: 5-13

[27]Communication media include: traditional (e.g. the spoken word, writing, theatre, songs, the arts); graphic (e.g. diagrams, illustrations, pictures, compositions, maps, films); electronic (e.g. videos, audiocassettes, television, national as well as regional and community radio, compact disks, digital versatile disks, the Internet)

Appendix III

RESEARCH INSTRUMENTS FOR HEAD OF HOUSEHOLDS

Appendix Table 3: Research Instruments for head of Households

MASTER OF SCIENCE IN DEVELOPMENT STUDIES
FACULTY OF SOCIAL SCIENCES
LUND UNIVERSITY
SWEDEN

This Research Instrument is designed to collect Data for a Study on the Topic

"Assessing the Livelihood Gains of Host Communities and Management of the Bobiri Forest Reserve (BFR) in Ghana"

Date of Interview: day...../month...../2012 Questionnaire No. |_|_|_|
Time of Interview: ..... am ☐ pm ☐
Name of Community:|_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_|

A. QUESTIONNAIRES FOR: Household Heads

PART I-BACKGROUND (SOCIO-DEMOGRAPHIC PROFILE)

Name of Respondent: (Optional) |_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_|
1. Age of respondent:
a. - 19 [ ] b. 20 - 29 [ ] c.30 - 39 [ ]d.40 - 49 [ ] f.50 - 59 [ ] g.60+ [ ]
2. Sex of respondent (a) Male [ ] (b) Female [ ]
3. Educational status (a) Elementary [ ] (b) Secondary [ ] (c) No schooling [ ]
(d)Other (specify)…….....……
4. Number of dependents Biological children……..Relatives……..……
Other (specify)…….....….
5. Occupation:
Primary Occupation…….……
Secondary Occupation……..……
6. What is your income per month?.....
7. How much do you earn from each occupation per month?
Primary Occupation……..……
Secondary Occupation……..……

PART II- (HOUSEHOLD LIVELIHOOD ACTIVITIES)

1. Do you undertake any activity in the forest reserve?
a. Yes [ ] b. No [ ]

2a. If yes, what are they?

a. Farming [ ] b. Hunting [ ] c. Fuel wood collection [ ] d. Logging/ Timber [ ] e. Arts and Craft material [ ] f. Medicinal plant collection [ ] g. Others (please specify)……..……

2b. If there are multiple activities, please list in order frequency at which the activities are undertaken in the Reserve.

……..……

3. Which part of the forest do you undertake your activities?

a. Inside reserve [ ] b. Off-reserve [ ] c. both [ ]

4. If both, which ones do you undertake inside the reserve and outside the reserve?

ACTIVITY	***a. Inside reserve b. Off-reserve***
Farming	
Hunting	
Fuel wood collection	
Logging/ Timber	
Arts and Craft material	
Medicinal plant collection	
Others (please specify)	

5. How important are these activities to your livelihood?

a. Very important [ ] b. Important [ ] c. Somewhat Important [ ] d. Not important [ ] e. Not at all important [ ]

6. Please explain the importance.

……..……

7. How often do you undertake your activity in the forest?

a. Daily [ ] b. Weekly [ ] c. Fortnight [ ] d. Monthly [ ] e. Seasonally [ ]

8. How many households do you know to derive their benefits from the forest in terms of the following activities?

ACTIVITY	***PROPORTION OF COMMUNITY*** ***1/3, ½ , ¾, entire community***
Farming	
Hunting	
Fuel wood collection	
Logging/ Timber	
Arts and Craft material	
Medicinal plant collection	
Others (please specify)	

9. How important are these activities to the livelihoods of the community?

ACTIVITY	***IMPORTANCE***
Farming	
Hunting	
Fuel wood collection	
Logging/ Timber	
Arts and Craft material	
Medicinal plant collection	
Others (please specify)	

Scale: *5-Very important; 4- Important; 3- Somewhat Important; 2-Not important; 1- not at all important*

10. Please explain the importance

……

11. Do you pay to undertake any activity in the forest and if yes, how much? Please fill the Table.

S/N	*ACTIVITY*	*PAYMENT (Yes/No)*	*AMOUNT Per MONTH (GhȻ)*
1	Farming		
2	Hunting		
3	Fuel wood collection		
4	Logging/ Timber		
5	Arts and Craft material		
6	Medicinal plant collection		
7	Others (please specify)		

12. Have you noticed any changes in the forest reserve over the years?

a. Yes [ ] b No [ ]

13. If yes, what are these changes and their cause? Please complete table

CHANGES	*CAUSES*
Negative	
1.	
2.	
3.	
4.	
Positive	
1.	
2.	
3.	
4.	

14. Do you think your activities/communities' activities in the forest are a major contributory factor?

a. Yes [ ] b. No [ ]

15. Please explain

……

16. What actions have been taking by you as an individual, the community as a whole and any other organisation to lessen the negative impacts of your activities on the current state of the reserve?

ENTITY	*ACTIONS*
Me	
Community	
External organisation (Please name organisation)	

17. What actions have been taking by you as an individual, the community as a whole and any other organisation to improve the positive impacts of your activities on the current state of the reserve?

ENTITY	*ACTIONS*
Me	
Community	

External organisation (Please name organisation)	

18. If no actions have been taken, what do you suggest should be done?

……

19. If actions have been taken, do you think they are the most effective and why?

……

PART III- (HOUSEHOLD PERCEPTION ON FOREST LAW ENFORCEMENT)

1. Are you aware of any laws or restrictions on the use of the reserve?
   a. Yes [ ] b. No [ ]

If yes, please proceed to answer the following questions.

2. How did you become aware of such laws and restrictions?

……

3. These laws are important to maintain the health of the Reserve?
   a. Strongly Disagree [ ] b. Agree [ ] c. Neither Agree nor Disagree [ ] d. Disagree [ ] e. Strongly Agree [ ]
4. These laws are important for my livelihood?
   a. Strongly Disagree [ ] b. Agree [ ] c. Neither Agree nor Disagree [ ] d. Disagree [ ] e. Strongly Agree [ ]
5. Which of these do you place priority on?
   a. Obeying the laws to maintain the health of the Reserve b. Disobeying the laws to meet my livelihood [ ]
6. Please explain your answer to question 5.

……

7. Which institution(s) is/are in charge of enforcing these laws?

……

8. How do they enforce them?

……

9. Were you or the community involved in designing these laws?
   a. Yes [ ] b. No [ ]
10. If yes, how?

……

11. Do you need a permit to undertake your activities in the Reserve?
    a. Yes [ ] b. No [ ]
12. If yes, what are the procedures for obtaining such permits?

……

13. Are the procedures cumbersome?
    a. Yes [ ] b. No [ ]

Please explain.

……

14. If yes, what suggestions do you have to relax the procedures and make them more effective……

15. Do you think the laws and restrictions are effective to achieve their intended purpose of either maintaining or improving the health of the reserve?

……

PART IV- (NON-FORESTRY ECONOMIC ACTIVITY/ALTERNATIVE LIVELIHOOD ACTIVITIES)

1. Do you undertake any non-forestry economic activity (alternative livelihood activities?
   a. Yes [ ] b. No [ ]

2. If yes, what are they? Please list in order of importance to your livelihood

……..……...……

3. How important are these activities to your livelihood?

……..……

4. Are there any alternative livelihood programmes/activities for the community?

a. Yes [ ] b. No [ ]

5. Were you and the community consulted in designing these alternative livelihood programmes/activities?

a. Yes [ ] b. No [ ]

4. How did you become aware of these non-forestry economic activities?

……..……

5. How often are you introduce to these non-forestry economic activities and by whom?

……..……

6. Do you believe that these non-forestry economic activities are important to you and the community as a whole? Please explain and make suggestions if possible.

……..……

7. Are you aware of the funding sources of these non-forestry economic activities?

a. Yes [ ] b. No [ ]

8. If yes, what are they?

……..……

9. Are you aware if the social and economic benefits from the Reserve are contributing to the funding of these non-forestry economic activities?

a. Yes [ ] b. No [ ]

10. How important are the social and economic benefits from the Reserve to the funding of these non-forestry economic activities?

a. Not at all important [ ] b. Not important [ ] c. Somewhat Important [ ] d. Important [ ] e. Very important [ ]

Please explain

……..……

11. Do you know of any other benefits that the community derives from the social and economic benefits from the Reserve?

a. Yes [ ] b. No [ ]

12. If yes, what are these benefits?

……..……

11. Are you and the community getting a fair share of the social and economic benefits from the Reserve? Please explain

……..……

12. Any other comments?

.....……

Appendix IV

RESEARCH INSTRUMENTS FOR INSTITUTIONS

Appendix Table 4: Research Instruments for Institutions

MASTER OF SCIENCE IN DEVELOPMENT STUDIES
FACULTY OF SOCIAL SCIENCES
LUND UNIVERSITY
SWEDEN

This Research Instrument is designed to collect Data for a Study on the Topic
"Assessing the Livelihood Gains of Host Communities and Management of the Bobiri Forest Reserve (BFR)in Ghana"

Date of Interview: day....../month......./2012 Questionnaire No. |_|_|_|
Time of Interview: .... am ☐ pm ☐
Name of Institution: |_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_||_|

A. **QUESTIONNAIRES FOR: Institutional Head**

PART I- STAKEHOLDER INVOLVEMENT, COMMUNICATION AND MANAGEMENT

1. Which specific stakeholders (individuals or groups) are involved in the management of the Bobiri Forest Reserve (BFR)?
…………………………………………………………………………….…………………………......
2. What are the main claims of interests of the various identified stakeholders in the management of the BFR?
…………………………………………..………………………………………………………………
3. How do the claims of interests and activities of the various stakeholders affect the state of the Reserve?

S/N	*STAKEHOLDER*	*ACTIVITY*	*IMPACT*
1			
2			
3			
4			
5			
6			
7			
8			

9			
10			

4. What are the ways by which the stakeholders (individuals and institutions, public and private) manage their common concerns?

……..……

5. How do these stakeholders interact and collaborate on natural resource management issues of the BFR based on the basis of different views, interests and entitlements?

……..……

6. How do the various actors negotiate, define and guarantee among themselves a fair share of the following:

a. Management Function
b. Entitlements and
c. Responsibility of the BFR

7. How are the competing claims of interests between/among the various stakeholders managed?

……..……

8. Are you satisfied with the extent of stakeholder involvement in the management process?

……..……

9. Should the current management processes be maintained or changed and why?

……..……

10. What communication methods are used in involving the stakeholders? (Focus Group Discussions, workshops, conferences among others)

……..……

11. Are the various stakeholders satisfied with this method of communication?

……..……

12. Do you agree/disagree that the communication processes are adequate?

Strongly Disagree	Agree	Neither Agree nor Disagree	Disagree	Strongly Agree
1	2	3	4	5

13. How do you make use of the feedbacks from the communication methods?

……..……

14. What lessons can be learnt from these communication methods?

……..……

PART II- ECOSYSTEM FUNCTIONS AND SERVICES OF THE BFR

1. What are the main ecosystem functions and services of the BFR?

……..……

2. Over the past years, have there been changes in these functions and services of the BFR?

……..……

3. What has contributed to this current status of the BFR?

……..……

4. Do the host communities depend on the functions and services of the Reserve for their livelihood?

……..……

5. What resources do they extract from the forest for their livelihood?

……..……

6. How important are these resources to their livelihoods? ……

7. How has this practise affected the health of the Reserve?

……

PART III- (FOREST LAW ENFORCEMENT)

1. Are there restrictions/laws on the use of the resources from the Reserve?

……

2. What are these restrictions/laws?

……

3. Which institutions are responsible for ensuring these laws and restriction?

……

4. Do they encounter difficulties in doing their job?

……

5. How do host communities comply with such restrictions/laws?

……

6. What are the challenges in these forest law enforcements?

……

7. What measures have been put in place to ensure these restrictions are complied with?

……

8. What is the penalty for violating such restrictions?

……

9. How has local livelihood been given considerations in these restrictions?

……

10. Were the host communities involved in coming out with such restrictions?

……

PART IV- ALTERNATIVE LIVELIHOOD STRATEGIES

1. Are there non-forest economic activities (alternative livelihood strategies) that have been designed for the host communities?

……

2. What are these activities?

……

3. What are the funding sources of the alternative livelihood strategies?

……

4. How has the social and economic benefits from the BFR supported these alternative livelihood strategies?

……

5. Are the communities aware that the Reserve is contributing to sustaining their alternative livelihoods?

……

6. What measures has been put in place to ensure the sustained use of the social and economic benefits from the BFR to improve these alternative livelihoods?

……

7. How were the host communities involved in the design of these alternative livelihoods strategies?

……

8. How have these non-forests economic activities helped improved the health of the BFR?

……

9. How would you rank the success of these alternative livelihood strategies and why?

ALTERNATIVE LIVELIHOOD STRATEGY	***SUCCESS (1- 5)***	***REASON***

Scale: *5-Very Successful; 4-Successful; 3- Somewhat Successful; 2-Not Successful; 1- not at all Successful*

10. What are the challenges in implementing these alternative livelihood strategies?

……

11. What measure has been put in place to overcome them?

……

12. Do you see these non-forest economic activities as sustainable?

……

13. What alternative livelihood strategy would you consider appropriate for host communities and why?

……

14. Are there any other benefits that the communities derive from the social and economic benefits from the BFR?

……

15. How are the social and economic benefits from the BFR shared among the various stakeholders with particular emphasis on the host communities?

……

16. Are the communities satisfy with the social and economic benefits from the BFR?

……

17. Any other comments?

……