

**ASSESSING THE CONTRIBUTION OF COLLABORATIVE FOREST MANAGEMENT  
TO THE LIVELIHOOD OF HOUSEHOLDS IN THE ASHANTI REGION**

**By**

**Doreen Osei-Mainoo**

**(BSc. Hons)**

**A thesis submitted to the School of Graduate Studies,  
Kwame Nkrumah University of Science and Technology,  
Kumasi, in Partial Fulfillment of the Requirements for the Degree of**

**MASTER OF SCIENCE**

**DEVELOPMENT POLICY AND PLANNING**

**Department of Planning,**

**College of Architecture and Planning**

**October, 2012**

## DECLARATION

I hereby declare that, this submission is my own work towards MSC. Development Policy and Planning and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of a University; except where due acknowledgement has been made in the text.

# KNUST

Doreen Osei-Mainoo (20068552) .....

(Name of Student and ID)

Signature

Date

**Certified by:**

Dr. K.O Agyeman .....

(Name of Supervisor)

Signature

Date

**Certified by:**

Dr. Daniel K.B. Inkoom .....

(Head of Department)

Signature

Date

## ABSTRACT

The role forests play in the livelihood of households in Ghana cannot be underestimated. Forest resources constitute the source of livelihood of about 70% of Ghanaians; however, Ghana's forest resource base is shrinking at an alarming rate which has led to decline in forest environmental quality and considerable loss in biodiversity. This is becoming a major concern for forest sector stakeholders including Government and civil society groups involved in poverty alleviation programmes and projects. This situation coupled with the global concern for climate change, eradication of poverty and other environmental problems has attracted a number of initiatives which will promote equitable distribution of incentives and benefits associated with the forest resource to enhance sustainable forest management.

Collaborative Forest Resource Management (CFRM) has been a subject of concern to the forestry sector since the mid 80s. This is due to the fact that sustainability of the forest resource depends to a large extent on the involvement of indigenous people in the decision making, management and sharing of benefits that accrue. This also has a potential of transforming the lives of the people involved.

This study therefore was to assess the contribution of CFRM to the livelihood of households. The specific objectives of the study were to assess the extent of collaborative forest resource management in the selected region in Ghana, examine its implication on livelihoods and the standard of living of households in forest fringe communities and assess the challenges involved.

Data was collected from a number of households in the Ashanti Region, Ghana between April and July 2011 and aimed at providing information on various CFRM initiatives, the achievements of such initiatives, the sustainability of these initiatives and the challenges in collaborative forest resource management. The data collection was carried out through interviews and focus group discussions using structured and un-structured questionnaires. Secondary data was also obtained from various sources. A combination of qualitative and quantitative methods of data collection was employed to meet the objective of the study. Data was analyzed and the results displayed in tables, pie charts and graphs. The study revealed that:

- The forestry sector contributes about 6 percent to the national gross domestic product (GDP).

- Collaborative forest management initiatives with financial benefits to a larger extent have a positive impact on the livelihood and standard of living of households in the forest fringe communities in the Ashanti Region.

- Low remuneration for the people employed under CFRM initiatives makes it unattractive to young household heads. This coupled with sustainability, lack of continuity of initiatives and lack of legal backing for some of the initiatives like the community forest committees poses are major challenges for forest management in the region.

In conclusion, Collaborative Forest Resource Management played an important role in the livelihood of households and humanity as a whole but this can be achieved in totality when the numerous challenges it faces are addressed. It is thus recommended that measures be put in place to provide incentives especially better remuneration packages to make collaborative forest management attractive to people, especially household heads in the youth cohort so as to enhance its benefits and also support poverty alleviation programmes in the country.



## ACKNOWLEDGEMENT

To God be the glory for all he has done and continue to do in my life.

My sincere gratitude goes to my supervisor Dr. K.O. Agyeman, Director, Development Policy and Planning Programme through whose comprehensive supervision, comments and criticism this work has been a success. I say thank you and God bless you for your time and dedication in the course of this study.

I am also grateful to the late Mr. Joseph Acqah, assistant regional manager of the Forest Services Division, Ashanti who provided information on the region and introduced me to the district managers. May his soul rest in peace.

The contributions of district managers and range supervisors of Nkawie, Mampong, Kumawu, Bekwai and Offinso during the data collection cannot go unmentioned.

To Alhaji Yakubu Mohammed, manager of Geographic Information Systems (GIS) Unit of Forestry Commission, I say a big thank you for your time and efforts in making my write-up complete. I am also grateful to Mrs. Emmanuella Ntiamoah Sarpong, Patience Padikie Damor and Martina Addae all of the Resource Management Support Centre of the Forestry Commission, Kumasi.

To my parents Mr. and Mrs. Osei-Mainoo who have encouraged and supported me to this level, I express my profound gratitude.

Finally, my appreciation will be incomplete without recognizing the efforts of my dear husband Mr. Patrick Asumang-Yeboah for his love, help and support in ensuring that I get to this level.

## TABLE OF CONTENTS

Declaration.....	ii
Abstract.....	iii
Acknowledgement.....	v
Table of content.....	vi
List of tables.....	xi
List of figures.....	xii
List of plates.....	xiii
List of Acronyms.....	xiv

### CHAPTER ONE INTRODUCTION

1.0 Background to the study.....	1
1.1 Problem statement.....	2
1.2 Research Questions.....	6
1.3 Research Objectives.....	6
1.4 Scope of the Study.....	7
1.5 Research Methodology.....	7
1.6 Justification of the Study.....	8
1.7 Organization of the Study.....	8
1.8 Theoretical Framework.....	9

### CHAPTER TWO REVIEW OF RELATED LITERATURE

2.0 Introduction.....	10
2.1 Conceptual Framework.....	10
2.3 Definition of Concepts.....	12



2.3.1 Forest and Forestry.....	12
2.3.2 Natural Resources.....	13
2.3.3 Forest Resource Management.....	13
2.3.4 Collaborative Forest Management.....	14
2.3.5 Rural Poverty.....	14
2.3.6 Livelihoods.....	16
2.4 Households.....	17
2.5 Forest Resource management, Livelihoods and poverty alleviation.....	17
2.6 The need for community Participation in forest management.....	19
2.7 Major Approaches to community involvement in forest management.....	20
2.7.1 Indigenous Approaches.....	20
2.7.2 Collaborative forest management.....	21
2.7.3 Joint Forest Management.....	21
2.7.4 Collaborative Protected Area Management.....	21
2.8 Experiences in collaborative forest Management from across the Globe .....	21
2.8.1 Collaborative forest management in Nepal.....	22
2.8.2 Participatory forest Management in Pakistan.....	24
2.8.3 Participatory Forest Management in Liberia.....	25
2.9 An overview of Forestry in Ghana.....	26
2.10 The current State of Ghana's forest.....	28
2.11. Background to collaboration in Ghanaian forestry.....	28
2.12 Collaborative forest Resource Management initiatives in Ghanaian forestry.....	30
2.12.1 Plantation development.....	30
2.12.1.1 Modified Taungya system (MTS).....	31
2.12.1. 2 Industrial (Commercial) plantations.....	32

2.12.1.3 Community Forest Management Project.....	32
2.12.1.4 The New National Forest Plantation Development Programme.....	33
2.12.2 Forestry Forum.....	33
2.12.3. Social Responsibility Agreement (SRA).....	35
2.12.4 Boundary Maintenance Contracts.....	36
2.12.5 Green firebreaks establishment.....	37
2.12.6 Eco-tourism development.....	38
2.12.7 Community Resource Management Committees (CRMCs).....	39
2.12.8 Dedicated forests. ....	40
2.12.9 Achievements of Collaborative forest Resource Management in Ghana...	40
2.12.10 Challenges of Collaborative Forest Resource Management in Ghana....	41

### **CHAPTER THREE**

#### **RESEARCH METHODOLOGY**

3.0 Introduction.....	43
3.1 Research design and variables. ....	43
3.2 Population, sample frame and sample size. ....	43
3.3 Sampling techniques.....	44
3.4 Sources of data and methods of data collection. ....	47
3.5 Methods of data analysis.....	47
3.6 Profile of study area. ....	48
3.6.1 Location and Size.....	48
3.6.2 Relief and Drainage.....	49
3.6.3 Rainfall and Temperature.....	49
3.6.4 Vegetation. ....	50
3.6.5 Forest Resources.....	50



3.6.6 Population.....	50
3.6.7 Household size.....	51
3.6.8 Population distribution by Economic activity. ....	51

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

4.0 Introduction.....	54
4.1 Why Collaborative Forest Management in the Ashanti Region.....	54
4.2 Representation of Respondents.....	56
4.2.1 Gender representation. ....	57
4.2.2 Age Distribution of respondents.....	57
4.3 Extent of Collaborative Forest Management in Ashanti Region.....	58
4.3.1 Collaborative Forest Management Initiatives in the Region.....	58
4.3.2 Selection of communities for CFRM Initiatives by Forestry Commission..	61
4.4 Collaborative Forest Management and Livelihoods.....	62
4.4.1 Job creation and employment opportunities.....	62
4.4.2. Plantation Development.....	63
4.4.3 Source of income.....	64
4.4.4 Contribution to food security. ....	69
4.4.4 Challenges of Collaborative Forest Management in the region.....	70
4.4.5 Sustainability of Collaborative Forest Management in the region.....	70

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, RECOMMENDATION AND CONCLUSIONS**

5.0 Introduction.....	73
5.1 Summary of Findings.....	73
5.2 Recommendations.....	75

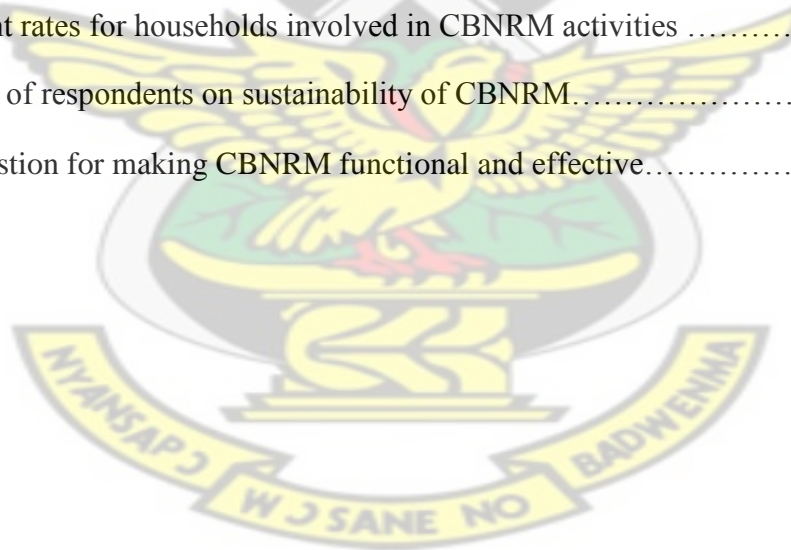
5.3 Conclusion.....	75
<b>REFERENCES.....</b>	<b>77</b>
<b>APPENDICES.....</b>	<b>83</b>

# KNUST



## LIST OF TABLES

Table 3.1 Respondents from selected communities in the districts.....	45
Table 3.2 Distribution of population in Ashanti Region according to economic activities.....	52
Table 4.1 Age distribution of respondents.....	57
Table 4.2 Distribution of respondent from collaborative forest management groups.....	60
Table 4.3 CFRM and job creation in Ashanti Region.....	63
Table 4.4 Income sources of respondents.....	64
Table 4.5 CFRM initiatives as a source of income.....	65
Table 4.6 Percentage of household income derived from Collaborative Forest Resource Management activities.....	66
Table 4.7 Income earned from collaborative forest management initiatives.....	67
Table 4.8 Reasons for improved standards of living of households.....	67
Table 4.9 Payment rates for households involved in CBNRM activities .....	68
Table 4.10 Views of respondents on sustainability of CBNRM.....	71
Table 4.11 Suggestion for making CBNRM functional and effective.....	71



## LIST OF FIGURES

Figure 2.1. Conceptual framework.....	11
Figure 2.3 forestry fora network.....	34
Figure 3.1 Map showing forest districts in Ashanti Region and study communities.....	46
Figure 3.3 A map showing forest Reserves in the Region... ..	53
Figure 4.1 : Sections of Ashanti Region indicating land cover changes since 1986.....	55
Figure 4.3 Reasons for household's involvement in the initiatives.....	61



## LIST OF PLATES

Plate 4.1 Food stuffs from MTS site.....	72
--	----

# KNUST



## LIST OF ACRONYMS



BCP	Biodiversity Conservation Project
CFC	Community Forest management Committees
CFM	Collaborative Forest Management
CFMU	Collaborative Forest Management Unit
CREMA	Community Resource Management Area
CRMC	Collaborative Resource Management Committee
CRMU	Collaborative Resource Management
CSD	Commission on Sustainable Development
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization
FC	Forestry Commission
FSD	Forest Service Division
FSDP	Forestry Sector Development Project
GDP	Gross Domestic Product
GPRS	Ghana poverty Reduction Strategy
HIPC	Highly Indebted Poor Country
IFAD	International Fund for Agricultural Development
IUCN	International Union for the Conservation of Nature
JFM	Joint forest Management
JFMC	Joint forest Management committee
MFSC	Ministry of Forests and Soil Conservation
MTS	Modified Taungya System
NFPP	National Forest Plantation Development Programme
NREG	Natural Resource and Environmental Governance



NTFP	Non Timber Forest Product
PADP	Protected Area Development Project
PFM	Participatory Forest Management
RMSC	Resource Management Support Center
SRA	Social Responsibility Agreement
TRMA	Timber Resource Management
TUC	Timber Utilization Contracts
VDC	Village Development Committee
WO	Women Organizations



## CHAPTER ONE

### INTRODUCTION

#### 1.0 Background to the study

The role of Collaborative Forest Resource Management in the livelihood of households in High forest Zone in Ghana cannot be underestimated. Forest resources constitute the source of livelihood of about 70% of Ghanaians however, Ghana's forest resource base is shrinking at an alarming rate posing a threat to the existence of these people. It is estimated that between 1990 and 2010, Ghana lost an average of 125,400 ha or 1.68% per year (Mongabay, 2010). This is becoming a major concern for Government, Sector Ministry and civil society groups involved in poverty alleviation programmes and projects. This situation coupled with the global concern for climate change, eradication of poverty and other problems has attracted a number initiatives and strategies like Protected Area Development Project (PADP 1& 2), and Biodiversity Conservation Project (BCP) by stakeholders to ensure effective management of the resource. This will ensure its sustainability and also promote the flow of the benefits to all segments of society especially those who depend solely on the resource in question.

Denial of forest owning communities ownership, governance and management control of their forest resources is a major contributory factor to rapid forest loss and degradation. Past government policies vested forest resources in the state even-though government does not own the land on which these resources are found.

Farmers and other stakeholders thus had no power over trees and other resources on their farms and lands and these Resources were sold out without their consent. The disheartening situation is the destruction of their lands, farms and water resources by timber companies in their harvesting and extraction of timber without payment of due compensation to affected individuals and households. Information gathered from the field by some studies indicated that this situation made some farmers in high forest zones in the country destroy forest resources and especially economic timber species on their farms as their existence posed a threat to their farms and livelihoods in totality.

It is estimated that, the country's forest cover shrunk from 8.2 million hectares at the beginning of the 20<sup>th</sup> century to 1.7 million hectares in the 21<sup>st</sup> century and as such, continuous reliance on the forest resources must be based on sound and proper management practices to achieve low volume and high value production (Government of Ghana, 2002:76)

Sustainable management of environmental resources is not exclusively a government affair but is a matter for society as a whole with active partnership with all stakeholders. It is on this note that, the prevailing 1994 Forest and Wildlife Policy proposed the involvement of communities in the management of forest and forest resources especially in the off-reserve areas to reverse some of the negative impacts of exclusion of forest dependent communities.

### 1.1 Problem statement

The First Millennium Development Goal call for reducing the proportion of people living below the poverty line (depend on less than US\$1 a day) to half the 1990 level by 2015: from 28.3 per cent of all people in low and middle income economies to 14.2 per cent. (World Bank Report, 2009)

The largest segments of the World's poor are the women, children and men who live in rural environments. These are the subsistence farmers and herders, the fishers and migrant workers, the artisans and indigenous peoples whose daily survival depends on their immediate environment (forest, wildlife and water bodies) whose struggles seldom capture world attention (IFAD, 2001:11). In Africa and Asia, about 80% of all target poverty groups are located in rural areas (Todaro and Smith, 2009:238) and this is typical of Ghana, where majority of the poor live in rural communities with natural resources mostly forest being their source of livelihood. These include subsistence farmers and herders, the fishers, caretakers of farms, and artisans and indigenous

The causes of poverty are multi-dimensional just like its meaning. According to Todaro (2009:238), the poor are disproportionately located in rural areas. These people depend solely on

the natural environment and primarily engaged in agricultural and associated activities. Forests are therefore cleared to make way for agricultural and other livelihood activities.

The vast majority of wood cut in developing world is used as fuel for cooking. This loss of forest cover has potentially devastating environmental implication predominantly for the poor. One major factor in the cycle of rural poverty is environmental destruction and deforestation can lead to a number of environmental maladies that over time can greatly lower agricultural yields and thus increase rural poverty.

Todaro & Smith (2009:510) indicated that, deforestation and forest degradation are the second leading cause of global warming and responsible for about 25% of carbon dioxide (Global Green House Gas) emissions. This is due to the fact that, Forests are critically useful as the trees consume carbon dioxide and release oxygen during the process of photosynthesis. Clearing forests thus reduces the environment's absorptive power of Carbon dioxide.

Again, forest biomass, terrestrial vegetation and wood products, constitute the major carbon pools (reservoir with the capacity to store and release carbon). Deforestation through Agricultural expansion & small scale agriculture, Unsustainable harvesting of timber (illegal logging and illegal chainsaw operations), High demand for fuelwood and charcoal, Wildfires, Population & development pressures, Mineral exploitation and mining (large-scale & artisanal/galamsey) thus result in 20% of the carbon emissions into the atmosphere (Kwarkye 2010:3).

This makes the loss and depletion of forests a major Global concern for climate change. Reducing deforestation and degradation can therefore help to avoid a significant source of carbon emissions and reduce other environmental and social problems associated with climate change and global warming.

For many Countries, especially developing ones, a forest signifies one of the important resources for development and poverty eradication. Ghana's forests and its resources constitute an important natural heritage with ecological, economic and socio-cultural functions for mankind. According to FAO (2005:9), in less than 50 years, Ghana's primary rainforest has been reduced

by 90 percent, while in the past 15 years (1990-2005), the country lost 1.9 million hectares or 26 percent of its forest cover.

This invariably affects the livelihood of most Ghanaians, especially the millions of people whose existence depend on the natural environment. Farmers, artisans like wood carvers, carpenters, hunters, traders in food products all depend on the existence of the forest. Loss of forest cover implies lack of access to economic activities for this section of the populace which means lack of income and as such a rise in the level of income poverty amongst them. If the issues responsible for these are not addressed, the consequences could lead to stark poverty for the over 70% of Ghanaians due to lack of direct access to forest resources, loss of arable lands due to soil erosion and lack of revenues from forest resources.

The national economy is also affected. This is because timber constitutes about 6% of the GDP (Seidu, 2011) and loss of forest cover means loss of government revenue. Furthermore, the revenue to be obtained from economic activities of communities depending on the forest through taxation (income tax) will be lost.

Although several policies had been put in place previously, these Forest policies to a large extent refuse to address the problems of these people who depend solely on the forest resource. Besides denying forest fringe communities access to the forest resources on their land, timber companies who log on their lands destroy their crops and refuse to pay compensation. These factors have not encouraged communities to maintain and manage forest resources. Lack of ownership by forest fringe communities over their forest resources has led to a number of consequences which include:

- Rapid clearing of the forest resources for cocoa cultivation which farmers have control over, full ownership and use for collateral in times of financial difficulty.
- Apathy towards forest resource maintenance and management as no direct benefit is realized from it.
- Environmental degradation caused by wildfires mostly which seems not to bother communities because of the assumption that forest resources are for the government and so forestry officials are responsible for it.



- Loss of water bodies is as a result of siltation through agricultural activities close to the water bed and deforestation which leads to drying of water sources.
- Loss of biodiversity through wildfires.
- Increasing Poverty of forest dependent communities as a result of degradation of the environment which affects the micro-climate and quality of the soil which negatively impact on their agricultural activities.

The analysis of the lack of transparency in forest governance and resource management which contributed to the rapid rate of forest degradation over the last decade, and its impact on poverty of forest dependent communities has been a key incentive for policy reforms.

In an attempt to halt forest degradation and promote the development of forest resource base, various management techniques like Forest conservation, Reservation and Preservation have been employed, with varied strategies. One of the strategies fully prescribed and endorsed by the World Commission on Environmental Development in its book 'Our Common Interest' (1987), was the involvement of the communities within the forest zones in the management of the forest and its resources, otherwise referred to as collaborative forest management.

According to Moses (2003), the concept of Collaborative Forest Management (CFM) is defined as the "working partnership between different stakeholders which enhances the management and development of the forest and wildlife resources and leads to equitable distribution of benefits. It includes incorporation of community-based natural resource initiatives in national programmes to promote rural development, wealth redistribution, employment, income and productive opportunities and infrastructure development.

The prevailing Forest and Wildlife Policy (Forestry Commission, 1994) aims at conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environment quality and perpetual flow of optimum benefits to all segments of society.

In an attempt to achieve this sustainable development of forest resources, various collaborative forest management initiatives were introduced which included the HIPC Plantations, modified Taungya System, Forestry Forum, Community Forest Committees to mention but a few to



improve the livelihoods of people. Thus these activities are expected to generate jobs and significantly increase food production in the country thereby contributing to wealth creation and reduction in rural poverty (Forestry Commission, 2005:8)

Although this policy has been in place for fifteen years, community involvement is not encouraging; this is because the highest law of the land (the constitution) places management of all natural resources including forest resources in the hands of the government who is both the regulator and manager and has eluded to herself all harvesting and financial rights. This lack of transparency and accountability on the part of the Forestry Commission to communities sometimes leads to conflicts due to mistrust when it comes to issues about the forest resource.

To assess the impact of community involvement in forest resource management on their livelihood and poverty alleviation, the following research Questions have been formed.

### 1.2 Research Questions

- To what extent are communities involved in the management of forest resources in Ghana?
- What are the challenges of involving communities in forest resource management in Ghana?
- What is the implication of this collaboration on their livelihoods and standard of living?
- What is the way forward?

### 1.3 Research Objectives

The general objective is to assess the contribution of collaborative forest resource management to livelihoods of households and recommend the way forward.

The specific objectives are to:

- Assess the extent of Collaborative forest resource management in the selected region in Ghana.
  - Identify various CFRM initiatives
  - Identify the achievements of such initiatives
  - Assess the sustainability of these initiatives.
- Assess the challenges in collaborative forest resource management.
- Examine the implication of Collaborative forest management initiatives on Livelihoods and the standard of living of households in forest fringe communities.

#### 1.4 Scope of the Study

The Contextual scope of the research is to assess contribution of collaborative forest management to the livelihood and standard of living of people involved.

Geographical scope of the research will cover selected districts in the Ashanti Region. Regarding the timelines, the study will consider the collaborative forest resource management as implemented from 2005 to 2010.

#### 1.5 Research Methodology

In carrying out the research both qualitative and quantitative data was collected using a multi-stage sampling approach. According to Nachmias and Nachmias (1992), this approach ensures representativeness and accuracy in sample drawing. A case study approach was used to help undertake an in-depth study of this contemporary phenomenon.

The main sources of primary data were respondents from 11 communities in the 5 selected forest districts of the Ashanti Region. In the absence of a distinct sample frame, and upon consultation with the District forest manager 115 households and 7 forestry official were interviewed.

Secondary data was also obtained from a variety of sources including published and unpublished literature. This included District Development Plans, reports, journals papers and a variety of forestry issues from the Districts under study.

Data analysis was done using some mathematical models for the quantitative data while the ordinal data scale of measurement was adopted to describe the qualitative data collected from the field.

KNUST

### 1.6 Justification of the Study

The research draws its justification from the importance of forests in the socio-economic development of the Country that is provision of micro-climate for agriculture, provision of Non-timber forest products as livelihood support for forest dependent communities and provision of foreign exchange from timber trade.

The research is to reveal the contribution of collaborative Forest Management to the standard of living and poverty alleviation initiatives in Ghana. This information when obtained will assist the Ministry of Lands and Natural Resources through the Forestry Commission to adopt the success stories and replicate them in the other High Forest Zones which are suffering from degradation of forest resources and also have high incidence of poverty.

### 1.7 Organization of the Study

This study has been put into five main chapters. The first chapter gives a general introduction of the study, the problem statement, research questions, and objectives of the study, the scope of the study, research methodology and the limitations of the study.

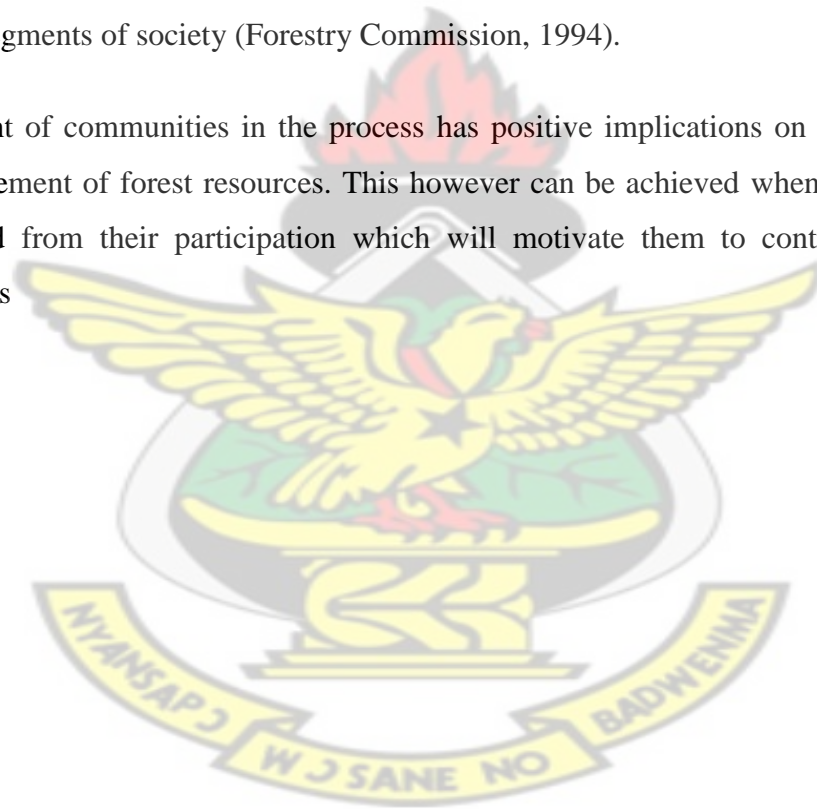
The second chapter deals with the review of literature related to the study. This chapter gives detail information about the historical and theoretical perspective of the study. The terminologies within the study are also defined here. The next chapter describes the background of the study

area. This is followed by a chapter which describes collaborative resource management as it pertains in the Ashanti region. The final chapter presents the finding, recommendation and conclusion for the research.

## 1.8 Theoretical Framework

The concept of Collaborative Forest Management is enshrined in the 1994 Forest and Wildlife Policy which aims at conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environment quality and perpetual flow of optimum benefits to all segments of society (Forestry Commission, 1994).

The involvement of communities in the process has positive implications on the effective and efficient management of forest resources. This however can be achieved when there is tangible benefits derived from their participation which will motivate them to contribute with their limited resources



## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.0 Introduction

Following from the previous chapter which gave a background to collaborative forest resource management, This chapter deals with the review of literature that concerns the subject under study and cover aspects of the relationship between Forest Management and its implication on communities using experiences reported by different authors. This is necessary as it brings to bare existing knowledge about the subject. Collaborative Forest Management will then be analyzed within the Ghanaian context.

#### 2.1 Conceptual Framework

In 1994, Ghana formulated a Forest and Wildlife Policy in the quest to balance competing demands on our limited natural resources. This policy recognizes the right of the people to have access to natural resources for maintaining a basic standard of living, and highlighted numerous responsibilities of the people to ensure the sustainable use of such resources. Emphasis is placed on participatory management and the protection of the forest and wild life resources (EPA, 2005: 8).

The concept of Collaborative Forest Management is thus enshrined in the 1994 Forest and Wildlife Policy. The study will basically consider the social dimensions of Collaborative Forest Management in the Ghanaian context and this is shown in Figure 2.1 below.

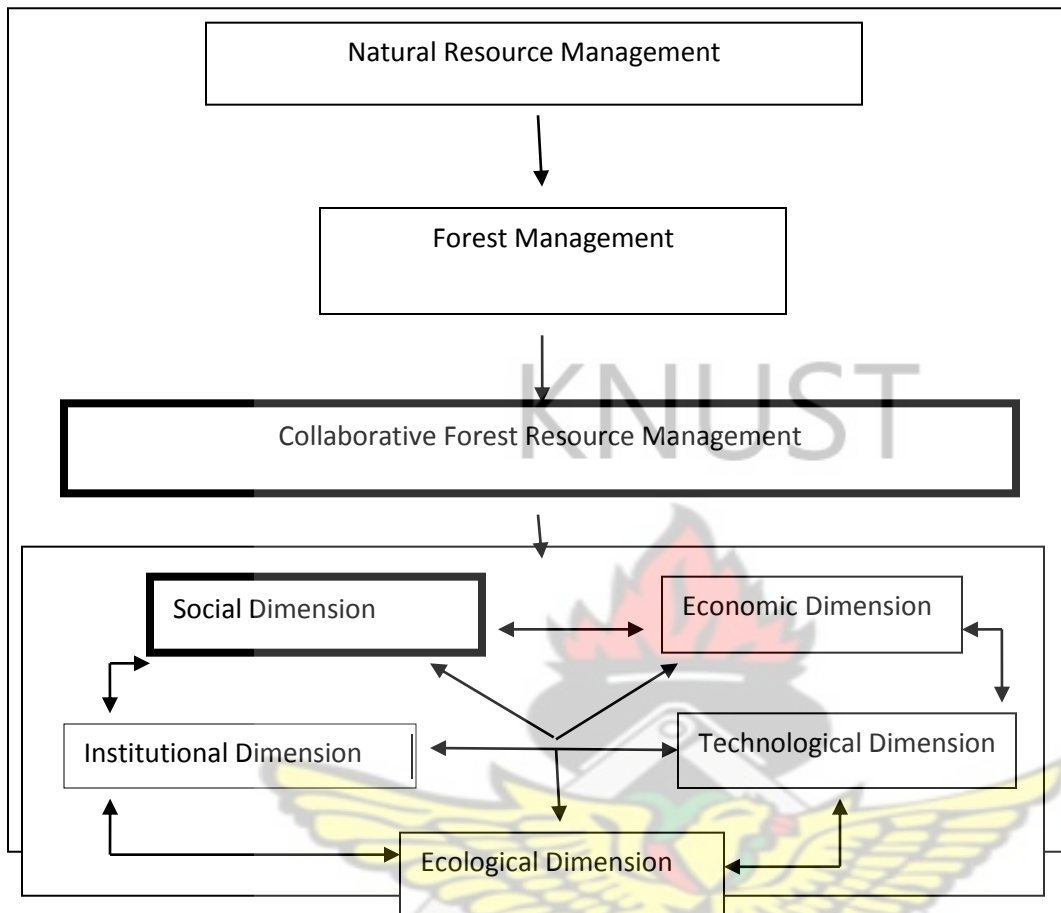


Figure 2.1. Conceptual framework.

Source: Author's Construct (2011)



## 2.3 Definition of Concepts

### 2.3.1 Forest and Forestry

Forests and forestry are sometimes used interchangeably but have different meanings. The term forest has diverse definitions from different authors. According to Inkoom (1999: 12), Forests are defined as ecosystem with a minimum of 10 percent crown cover of trees and bamboos generally associated with flora, fauna and natural soil conditions and not subject to agricultural practices.

Boateng (1999:93) defines forest as an ecosystem which is dominated by trees. It is a living system and resource which can be inherited from nature or created.

Forestry on the other hand is the art and science of managing forests, tree plantations, and related natural resources. The main goal of forestry is to create and implement systems that allow forests to continue a sustainable continuation of environmental supplies and services. The challenge of forestry is to create systems that are socially accepted while sustaining the resource and any other resources that might be affected.

Silviculture, a related science, involves the growing and tending of trees and forests. Modern forestry generally embraces a broad range of concerns, including assisting forests to provide timber as raw material for wood products, wildlife habitat, natural water quality management, recreation, landscape and community protection, employment, aesthetically appealing landscapes, biodiversity management, watershed management, erosion control, and preserving forests as 'sinks' for atmospheric carbon dioxide.

The GPRS II (GoG, 2002-2006) sees forestry as a means of creating wealth or reducing poverty. This is because the benefits that local people derive from forests are enormous and cannot be too strongly emphasized. For example; forests contributed to the food needs of rural communities directly in the form of fruits, seeds, nuts and protein from bush meat (wild animals). The bush meat sector employs about 300,000 hunters at the local community level who produce between 220,000 to 380,000 tons of bush meat valued at between US\$210 million to US\$350 million for domestic consumption annually. In addition, the value of animal and plant products from the

forests used in traditional medicine and cultural practices are estimated at US\$13 million (Ankudey, 2002)

Agyeman *et al.* (2010), report that the exploitation of valuable timber from the forests also contribute about US\$2 million in direct stumpage fees to landowning communities per annum. In addition, timber exports earn the country about US\$ 170 million per annum, which accounts for about 18% of exports and 5-6% of total GDP. Forestry thus contributes greatly to national development.

KNUST

### 2.3.2 Natural Resources

Inkoom (2005: 31) defined natural resources as possessions in the form of wealth and goods that can help in meeting the needs of man. These resources are not man-made though man's activities can either increase or deplete the available stock. Resources can be categorized into six which are stock resources, flow resources, water resources, land resources, human resource and Biological resources of which forest is a component. The forest resources base thus refers to the stock of forest resources both timber and non-timber which private as well as public agencies manage with the aim of satisfying private or corporate need.

### 2.3.3 Forest Resource Management

Resource management is defined by O'Riordan (1971:8) as a process of decision making whereby resources are allocated over space and time according to the needs, aspirations and desires of man within the framework of his technological inventiveness, his political and social institutions and his legal and administrative framework.

Dankyi (2005:10) defines forest management as the branch of forestry concerned with the overall administrative, economic, legal, and social aspects and with the essentially scientific and technical aspects, especially silviculture, protection, and forest regulation. This includes management for aesthetics, fish, recreation, urban values, water, wilderness, wildlife, wood

products, forest genetic resources and other forest resource value. Management can be based on conservation, economics, or a mixture of the two. Techniques for management of forest resources include timber extraction, planting and replanting of various species, cutting roads and pathways through forests, and preventing fire.

Thus the definition of Sustainable Forest Management has gradually evolved from its original connotation of sustained timber production to embrace concepts of social, economic, and environmental aspects. It refers to various degrees of deliberate human interventions ranging from actions geared towards safeguarding and maintaining the forest ecosystem and its function, to favouring specific socially or economically valuable species or groups of species for the improved production of goods and services derived from the forest to meet present day needs. It again ensures the continued availability and contribution to long-term development needs (FAO, 1997:104).

#### 2.3.4 Collaborative Forest Management

Owusu *et al.* (1999:85) define collaborative forest management as a working partnership between the local people and the Forestry Department to ensure that management of all forest resources is equitable and efficient. Based on this definition, two main goals are being pursued under the Department's collaborative programmes. First is equity, that is ensuring that a fair share of the benefits obtainable from the forest exploitation accrue to landowners irrespective of whether they participate in the day to day management operations. Secondly, efficiency that is involving communities especially forest fringe in the implementation of forest operations in situations where it is found not to be more efficient to do so.

#### 2.3.5 Rural Poverty

According to Acheampong (2005:8), poverty in the developing world is more a rural than an urban phenomenon, as in the poorest developing countries, 65-80% of the population still live in rural areas. In developing countries, particularly those in Africa, livelihood insecurity remains a

major problem. Poverty, famine and malnutrition are serious, perennial problems that these nations have to grapple with.

Rural people in these countries, especially the poor, thus employ a diversity of means to help meet basic needs: food crop production; cash crop production; forest and tree product gathering, consumption, processing and sale; and income-earning enterprises both on and off the farm.

In a study of the poverty status of the Ghanaian population, Agyeman *et al.* (2010:4) reported that poverty is very much prevalent in the country, accounting for about 43% of all Ghanaians. The report further indicates that poverty in Ghana is a rural phenomenon, much of it occurring among food crops farmers and forest fringe communities

In a similar study, Agyeman *et al.* (2010:5) observed that the incidence of extreme poverty remains very high with more than one-third of the Ghanaian population being unable to meet their basic nutritional needs, even if they devoted their entire budget to food. According to the Ghana Statistical Service (2002:78), poverty in Ghana has many dimension with most of the poor communities having a sense of powerless and isolation which have tended to keep households, and at times whole communities, in persistent poverty.

Reyes (2001:12) reported that, at the local level, other important reasons that accrue for low level of income include little diversity in economic base, low work-hour per head, and poor opportunities for non-farm employment.

In order to alleviate poverty at the rural level, it is generally proposed that there is the need to increase access to forest resources, provide security of tenure and optimize revenue and income generation at the rural level to create wealth. This can be done through the judicious use of forest resources and an improvement in the farming coupled with the equitable distribution of that wealth within the shortest possible time to alleviate rural poverty (Agyeman *et al.* 2010:5)



### 2.3.6 Livelihoods

Acheampong (2005:9) defines Livelihood as adequate stocks and flows of food and cash to meet basic needs. Thus, the idea of sustainable livelihoods emerged as an approach to maintaining or enhancing resource productivity, securing ownership of and access to assets, resources and income-earning activities, as well as ensuring adequate stocks and flows of food and cash to meet basic needs. Clearly, food security is an important component of this framework. The report further stated that three fundamental attributes of a livelihood can be identified, namely: the possession of human capabilities (such as education, skills, health, psychological orientation, etc.); access to tangible and intangible assets (such as land, forests, etc.); and the existence of economic activities.

In most of the rural areas or the forest areas, there are little or no economic activities to provide income for the people. The daily subsistence of the people is dependent on the forest. Hence, resources obtained from the forest include water, firewood, building poles, timber, medicinal herbs, vegetables, honey, fruits, and animals etc. There are also agricultural practices as well as extractive activities (Moses, 2003).

Often, the poorer the household, the more diverse the sources of its livelihood, as the needs for the year must be made up from various off-farm as well as on-farm natural resources, and often from migrant labouring as well (Acheampong, 2005:12). Within this matrix of opportunities, poor rural people are very much dependent on land and other natural resources for their livelihood. They have traditionally depended upon forests and trees for the collection of livelihood goods such as food, fruits, fuel wood, fodder and fibre as well as for income (Falconer and Arnold, 2001:147).

In a rural context, households may construct four main categories of livelihood strategies: agricultural intensification; agricultural extensification; livelihood diversification, e.g. forest product gathering, processing, consumption and sale, petty trading, formal employment, etc; and migration (Acheampong, 2005:10). Broadly, these are seen to cover the range of options open to rural people. More commonly, rural people pursue multiple strategies, together or in sequence. They may, for instance, depend on their own farming, on selling their labour locally, on

gathering and processing forest products, on hunting, or on migration, all within the same year. Outcomes will not be simply monetary, or even tangible in all cases. They may include, for instance, a sense of being empowered to make wider, or clearer, choices (Acheampong, 2005:10).

The local people's dependence on forest resources derives from a number of sources: their roles in forest clearance and hence their close contact with the forest and its products; their poverty - which increases their dependence on minor forest products (for example, snail and mushroom gathering and the collection of Marantaceae leaves); and their vulnerability, with NTFPs providing important buffer or safety net in times of stress (Agyemang, 1996:10)

People living in forest environments, and practicing hunting, gathering and shifting cultivation, draw heavily on forests and their outputs to sustain their livelihoods. Local people's dependency on forests for livelihoods often results in forest loss and decline in the availability of many forest products, especially NTFPs. Thus, reports of worsening NTFP supply situations have been widespread in many areas of the developing world (Falconer and Arnold, 1991: 147).

## 2.4 Households

Dankyi (2005:16) defines household as a person or co-resident group of people who contribute to and derive benefit from a joint economy in either cash or domestic labour. Thus it is a cluster of people who live together and share meals together. Households are not stable organizations. They pass through a process such as ageing of members and migration. The composition of households is a determinant of capabilities, choice and strategies. This could be as a result of choices that are strategic based on fertility or location of family members.

## 2.5 Forest Resource management, Livelihoods and poverty alleviation

The fundamental issue of resource management in developing countries is to eradicate poverty through increased growth and sustainable development. In operational terms, poverty in



developing countries is associated with low levels of income, and consumption per head, low gross national production, less employment opportunities and degenerating economic base. (Reyes, 2001:12). A significant number of people living in poverty also depend on forests and trees outside forests to generate income through employment and through the sale of forest-derived products (IUCN, 2010:4).

Fobih (2005:5) explains that the vast majority of Ghanaians particularly those in the rural areas depend on the forest as their source of livelihood. These include the use of fuel wood and charcoal as their main source of energy for cooking, collection of food, medicinal plants and construction materials for housing. These communities also supplement their cash income by collecting and selling such materials for making handicraft

Escalating poverty forces people to rely directly on upon and so exploit ruthlessly environmental resources. To curb the present magnitude of poverty, issues related to diversification of resource base, controls of population growth and ethics in production, consumption and human relations at international, national and local levels need to be tackled ( Reyes, 2001:12).

According to Moses (2003), Collaborative Forest Management recognizes that local people depend heavily on forest resources and have the interest and potential capacity within their institution to contribute to conservation as long as their rights, responsibilities and benefits are defined and consensus is built between the various parties. Hence revenue and benefits sharing from forest products are a good incentive to the people. In this regard, Collaborative Forest Management allows people to harvest forest resources for their home use in a sustainable manner, hence, providing a means of income and their needs which invariably leads to reducing or alleviating poverty. Again, the use of forestland for agricultural purposes where food crops as well as perennial cash crops plantations of cocoa, coffee, rubber, oil palm etc provide income and needs of the people. Collaborative Forest Management gives the peoples' expectation, which includes promotion of rural development, sharing of revenue, obtaining access to credit facilities and loans and assistance in marketing goods such as handicrafts and other products.

It is therefore evident that Collaborative Forest Management can uplift socio-economic status of the communities through the creation of employment; be it logging, extractive industry or self-

employment and Infrastructural development like roads and telecommunication facilities that will facilitate the operation of extractive activities at least within the period of operation.

Furthermore, personal intellectual development can take place as information will be shared through networking to facilitate effective participation of the communities.

## 2.6 The need for community Participation in forest management

According to Agyeman *et al.* (2010:41), there is now a substantial body of evidence in Africa and other parts of the world, that local users of natural resources can in many cases manage those resources effectively provided appropriate institutions are put in place, benefits are clear and significant and tenure is secure.

The Collaborative Forest Management Unit (1999) reported of instances where local people have approached the FSD on the alarming rate of forest degradation within forest reserves and offered to assist in ameliorating the problem. The contribution of local people in the implementation of the interim procedures for the felling of timber outside reserves has been commendable. Such initiatives bring to the fore the favourable execution of collaborative approaches in forest management.

Based on these convictions, a number of initiatives are thus been promoted, with communities working alone, or in various degrees of collaboration with governments, non-governmental organizations and international agencies. These initiatives take many forms ranging from the promotion and strengthening of long-existing community management practices, land and resource tenure systems and indigenous knowledge, to the crafting of new institutions and new partnership between local groups, NGOs and the State.

Agyeman *et al.* (2010: 43), listed ten different factors as being the rationale behind community involvement in forest management which are as follows:

- Proximity of the local people to the resource

- The impact that livelihood activities of the people have on the resource
- The need to ensure equity
- The importance of assuring the livelihood of local people
- The inherent capacity of locals to manage the resource given the indigenous local knowledge
- Promotion of biodiversity with the multiple interests in the resource
- Cost effectiveness of management associated with community participation
- Involvement of local people leads to better adaptation of natural resource management with the culture and livelihoods of the people
- Promotion of good governance
- Compatibility of community participation with the development philosophy (especially poverty alleviation) of both national governments and international community.

It is therefore evident from these factors that community involvement is a necessity for the successful implementation of any forest resource management programme.

## 2.7 Major Approaches to community involvement in forest management

All over the world, various approaches have been introduced to promote the involvement of people in the management of the forest resource. Some of these approaches are thus discussed below:

### 2.7.1 Indigenous Approaches

Some nations have significant populations of indigenous people who claim lands and forests considered to be ancestral domain. There is the usage of judicial processes by indigenous people to gain or re-establish greater rights over these resources. Greater recognition is being given to these claims by some countries in the north and south through negotiations, and often transferring authority for public forests back to indigenous people. The roles of government,

NGO and other stakeholders vary widely from no involvement to active support depending on national policies and management (IUCN,1996:12).

#### 2.7.2 Collaborative forest management

This broadly defines local residents who have developed institutions norms, rules, fines to sustain forest resources. CFM systems is characterized by one or more communities protecting and using a specific forest area. Here, the forest may under the legal jurisdiction of the community, state or nation but community management groups strongly identify with the resource and perceive they have special rights and responsibilities for its management. While some governments or outside interests may be interacting with CFM groups, typically, communities exert operational controls over access and use of the forest (IUCN,1996:12).

#### 2.7.3 Joint Forest Management

Joint or management of forests can be broadly viewed as policy and programme initiatives that allow governments, donors, private-sector interests and NGOs to collaborate with communities managing forest resources. The joint management element may vary with communities, with communities having more or less decision-making authority relative to government and other interests. JFM systems are mostly found in public forest land contexts, where community participation is considered desirable by government and is encouraged through policies and programmes (IUCN,1996:12)

#### 2.7.4 Collaborative Protected Area Management

Although only 5 percent of the world's forests have been designated as National Parks and conservation areas, frequently these areas possess indigenous inhabitants or are populated on the periphery by agricultural and pastoral communities that are forest users. Many governments in the past imposed strict controls on park use, including resettling residents and limiting the access



of bordering communities, often generating conflicts between government managers and resident populations. Nature conservation planners and administrators in many nations are now seeking ways to involve resident people in developing new collaborative management systems for conservation areas or integrated conservation and development programmes (IUCN,1996:12)

## 2.8 Experiences in collaborative forest Management from across the Globe (Case Study)

The process of institutional changes in the forestry sector of many countries reflects the intent for the involvement of local stakeholders in forest management activities. According to Shackleton *et al.*, (2002), Evidence from the developing countries indicates that the local stakeholders have been able to demonstrate capacity in the management of natural resource. The basic assumption of this approach is that the forest-dependent communities have a custodial interest in ensuring that the forests do not become degraded.

This section therefore highlights collaborative forest management as being practiced in some developing countries.

### 2.8.1 Collaborative forest management in Nepal

According to Ebregt (2007:1), the CFM Working Group in Nepal is a multi-stakeholder working group under the Ministry of Forests and Soil Conservation (MFSC). The CFM as an approach to sustainable forest management in collaboration with the local people to achieve multiple benefits, maintaining ecological balance, generating economic returns and improving livelihood from the government managed forests. The Government of Nepal has been making a number of efforts to manage the forests of the lowlands of Nepal in a sustainable manner for economic growth of the nation as well as the local people. These attempts have not been successful to date due to the centralized institutional structure of the forest management administration.

More than three decades of experience with the implementation of Community Forestry have shown that the model is successful in the hills, where forests and people exist together and

forests are mainly used for subsistence purposes. In the Terai, however, the situation is quite different. Large blocks of highly valuable national forests are found in the North, while the majority of the population lives in the South. The people living in the South are traditional forest users. Thus the same Community Forestry model applied in the Terai does not, to date, accommodate the rights of these traditional users; it does not fulfill their forest product needs or assure that revenue flows to the Government.

The Forest Policy 2000 brought about the possibility of managing the large contiguous blocks of Terai forest ('government managed forests' according to the Forest Act 1993) as Collaborative Forest Management (CFM). Through the CFM approach, the Ministry of Forest and Soil Conservation (MFSC) intends to manage the forests of the Terai through the involvement of local government and people in decision-making, implementation, benefit sharing and monitoring.

The main objective of this approach is to develop sustainable forest management, to fulfill the need for forest products, to help reducing poverty by creating employment and income generating activities, to maintain and enhance biodiversity, and to increase national and local income through active management of the Terai and inner Terai forests.

In December 2004, the MFSC approved three pilot CFM Schemes, one in each Bara, Parsa and Rautahat Districts, while two more are operational. Limited experience of implementing these schemes to date shows that they are successful in including close and distant users (including women, excluded castes such as Dalit and the poor), not only in forest management, but also in several income-generating activities. Benefit sharing is taking place between the CFM Group and the Government. Forest products sales depots have been established to address the needs of both close and distant users. The revenue raised from the CFM Scheme implementation can be mobilized for forest management and several socio-economic development activities. At this point three out of the five CFM Schemes are generating revenue.

Despite the various strengths and opportunities, there are also constraints in CFM implementation. These include:

- 1) Late formation of the CFM Group results in less participatory decision-making;



- 2) Identification of the forest dependent 'poor' (large numbers of firewood collectors sell wood for subsistence purposes), and providing them with labour opportunities and an alternative means of livelihood;
- 3) The peoples' and Government's acceptance of scientific forest management, which in effect means the felling of green trees;
- 4) The control of smuggling of timber and fuel wood,
- 5) The proper functioning of the decentralized forestry institutions, such as DFCC, etc.

### 2.8.2 Participatory forest Management in Pakistan

Collaborative or joint forest management seeks to develop partnership between the local communities and Forest Departments (representing the state), on the basis of friendly relationship and trust of both parties, for the sustainable management of forest areas (Poffenberger 2001:16).

According to Shahbaz (2007:588), the state authorities in Pakistan are attempting to shift the forest management paradigm from top-down to participatory approach. These forest reforms seek to initiate the process of eliminating the main causes of forest depletion through participation of local communities.

In the Forestry Sector Project model of participatory forest management the village development committees (VDC) and women organizations (WO) were established to manage the natural resources of the village, implement the village land use plan prepared in collaboration with the forest department, to monitor the physical and financial affairs of the village plan etc (Suleri, 2002:107). Similarly Joint Forest Management Committees (JFMCs) were established in selected villages exclusively for 'participatory' forest management. These Committees were being elected more or less democratically, representing the different tribes of a village.

### 2.8.3 Participatory Forest Management in Liberia

Moses Eben in a study on Forest management and poverty in Liberia, defined Participatory Forest Management (PFM) as an umbrella term to include shared forest management, joint forest

management, collaborative forest management and community forestry. It tries to secure and improve livelihood of local people dependent on forest resources by involving all key stakeholders in the process of forest management, understanding their needs and situation, allowing them to influence decisions and receive benefits, and increasing transparency.(Moses, 2003).

He further explained that, Collaborative Forest Management includes incorporation of community-based natural resource initiatives in national programmes to promote rural development, wealth redistribution, employment, income and productive opportunities and infrastructure development. It also provides legislation to support community and other stakeholders' roles in forest and wildlife management. Improvement of community access to resources and definition of roles of various actors in improved resource management is inclusive. Collaborative Forest Management creates and support viable forest fora with strong civil society presence and communication channels/networks. (There is up, down and lateral). It thus places heavy responsibilities on farmers and forest fringe communities.

As a result of implementation of Collaborative Forest Management government as one of the stakeholder will clarify the roles and responsibilities of the different stakeholders in forest resource management and pass legislation in this regard. Government's land and tree tenure schemes will then be clarified and documented, the ownership of trees which offer better incentive to tree planters. Government will then channel benefits accrued from off-reserve forest management to communities. There will be benefit-sharing arrangements to ensure that communities and farmers get equitable shares. Hence, communities will be made more responsible and accountable, since, timbers loggers will be made accountable to communities.

Through Collaborative Forest Management people are allowed to harvest forest resources for their home use in a sustainable manner, hence, providing a means of income and their needs thus a means of reducing or alleviating poverty.

Also, use of forestland for agricultural purposes(where food crops as well as perennial cash crops plantations of cocoa, coffee, rubber, oil palm are developed in forest lands), provides

income and needs of the people. It is easy to build on indigenous management practices, as they allow local community to collect resources in "reasonable" quantities for their development.

On the Impact on rural livelihood, Moses (2003), indicated that, Collaborative Forest Management has the potential to uplift socio-economic status of the communities. There will be employment as a result of jobs created be it logging, extractive industry or self -employment (informal sector) as well as infrastructure development. Personal intellectual development will also be enhanced as information will be shared through networking to facilitate effective participation of the communities.

Although the countries mentioned above have chalked some successes in the implementation of collaborative forest management, they were not free from challenges and these include the following:

- the difficulty in generation of direct benefit flows to communities;
- uncertainty of rights, responsibilities and roles in the collaborative Forest Management decision-making process.
- vested interests unwilling to devolve power to new forest management partners,
- community participation' becoming vulnerable to capture by community elites and
- Protagonists which promote collaboration for reasons completely other than those linked to advancing social justice.

## 2.9 An overview of Forestry in Ghana

According to Collaborative Forest Management Unit (1999:7), the history of forestry in Ghana dates back to 1906 when legislate was enacted to control the felling of commercial tree species, felled by creation of the Forestry Department in 1908. In 1927, The Forest Ordinance was passed to speed up the process of forest reservation, giving government the power to forcefully constitute forest reserves. The demarcation and reservation of the forest estate was largely completed by 1939 and by the mid-40, 20% of the high forest zone was reserved.

The first Forest Policy was adopted in 1948. This policy provided for creation of a permanent forest estate for the welfare of people, protection of water supplies, and maintenance of favorable conditions for agricultural crops, as well as public education and research. However, it mainly emphasized the sustained supply of timber for the wood industry and promoted the exploitation and eventual demise of unreserved forests ( Forestry Commission, 1994).

The Concession Act in 1962 vested the right to all timber trees in the president. Farmers thus lost all rights to timber trees on their farms. Since the adoption of this forest policy, the wood industry grew steadily up to the 1970s. The coming into force of the Forest Protection Decree in 1974(NRCD 243) further prohibited people from undertaking a number of activities in the forest reserve which included felling, uprooting and tapping from trees without written consent of competent forest authority.

In 1986, the Forest Resource Management Project was launched with the main objectives of stabilizing industrial forestry production, promoting forest conservation and tree planting to counteract fuel wood shortage and ecological deterioration, and strengthening forestry sector institutions including communities for their involvement in forest management. As the need for community participation in forest management became critical, the Collaborative Forest Management Programme was launched in 1983 (CFMU, 1999:9).

Then came the 1994 Forest and Wildlife Policy which aims at conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society.

This Policy seeks to promote participatory forest management and reverse some of the negative impacts of exclusion of forest dependent communities but is weak on community ownership, governance and management control of their forest resources. The Timber Resource Management Act (1998) and its amendments are focused on timber extraction rather than holistic approach to forest resource management apparently because timber is one of the major sources of income for government, contributing about 5-6% to GDP



## 2.10 The current State of Ghana's forest

Total land area of Ghana is about 23.85 million hectares. At the beginning of the last century, about one-third (i.e 8.2 million hectares) of the area was covered by high forest while the remaining two-third (15.7 million hectares) was savanna woodland (Owusu et. al., 1999:27). The area of high forest (off reserve) has drastically reduced and the only remaining portions today are mainly in protected areas. Records show that at the turn of the last century, Ghana had about 8.8 million ha of primary forest. By 1950, the area had been reduced to 4.2 million ha and further to about 1.5 million ha by 1999 (Owusu et. al., 1999:27). This implies that from 1900 to 1950, the nation lost 50% of its primary forest cover and also lost 60% of it between 1950 and 1999. On a 100 year scale (1900 to 2000), the nation lost over 80% of the closed forest (a reduction from 8.8 million ha to 1.5 million ha).

Fairhead and Leach, (1998) estimated the deforestation rate to be a massive 22,000ha per year around the late 90's. From some more recent trends, Mongabay.com reported that, between 1990 and 2000, the average annual deforestation rate was 1.82%. Also, between 2000 and 2005, the rate of forest change increased by 4.2% to 1.89% per annum. The recent FAO 2010 report has estimated Ghana's deforestation at 135 395 ha per year.

It is evident that for effective management of our forest resources, there is the need for collaboration among all forest stakeholders especially forest fringe communities to support the Forestry Commission to reverse this current trend in deforestation and forest degradation.

## 2.11. Background to collaboration in Ghanaian forestry

Forest Management in Ghana started in 1909 with the establishment of the Forestry Department. It started on a note of collaboration between traditional leaders (representing local people) and the government (represented by Forestry Department). The 1948 Forest Policy had some elements of collaboration, but this was overshadowed by the quest to promote the timber industry. (FMSC, 1999:4)

The 1994 forest and Wildlife Policy of Ghana aims at a conservative and sustainable development of the nation's forest and wildlife resources for the maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society. In enunciating this policy, the government recognizes and confirms the following guiding principles on collaboration:

- The rights of the people to have access to natural resources for maintaining a basic standard of living and their concomitant responsibility to ensure the sustainable use of such resources.
- A share of financial benefits from resources utilization should be retained to fund the maintenance of resource production capacity and for the benefit of local communities
- The need to develop a decentralized participatory democracy by involving local people in matters concerning their welfare

In addition to the above guiding principles, the policy also “highlights the necessary strategies to increase public awareness and people's involvement in conservation of forest as well as wildlife resources, especially in areas which affect their livelihood and the stability of the environment. These have thus been considered in the FSD strategies to propagate the collaborative concept.

To give effect to participatory goals of the 1994 forest and wildlife policy, the forestry sector formally created a Collaborative Resource Management Department (CRM) to lead the process as there was a participatory gap between the 1948 forest policy and the current one.

The Forest Services Division has since 1993 pursued strategies to achieve the goals as set under the definition of collaborative resource management. This has taken the form of ensuring that land owning communities secure in a timely manner a fair share of the benefit that are derived from forests whether reserved or outside reserve.

Similarly it has instituted systems that involve communities in decision making as well as implementation of forest operation to promote efficiency in its work while guaranteeing fair remuneration to forest fringe communities.



The Community Forest Management Project, funded by the African Development Bank also gave backing to collaborative forest management in Ghana. An EPA report in 2005 indicated that, The project approach, of allowing smallholder farmers living in the vicinity of the forest reserves to participate in collaborative forest management in which they have access to relatively fertile land in degraded reserves in which to plant trees and engage in food crop production is in line with the Ghana poverty Reduction Strategy (GPRS) 2002-2004. The GPRS II emphasize this direct participation of fringe communities in collaborative forestry resource management as a means of enhancing beneficiary incomes, food security and poverty reduction.

## 2.12 Collaborative forest Resource Management initiatives in Ghanaian forestry

According to Asare (2000:18), collaborative forest management can be practiced at two levels which are; involvement of communities in decision making and in the execution of forest operations. Collaboration in decision making ranges from the highest levels of policy and legislation formulation through forest systems development and projects formulation down to the level of forest reserve management planning.

Over the years, there have been a number of programs and or initiatives by the Collaborative Resource Management Department of RMSC to ensure community participation in forest resources management. Some of these programs and initiatives are:

### 2.12.1 Plantation development

According to Agyeman *et al.*(2010:26), records indicate that the first plantations were established by the Germans following treaties with France and Great Britain between 1885 and 1899 for administration of the Trans-Volta Togoland currently the Volta Region. Inventory conducted between 1985-1989 and 2001 to 2002, revealed that there had been rapid loss of forest resources from both reserved and off-reserved forests. In order to help address the problem of deforestation and ameliorate its effect on rural poverty, the Government launched a National

Forest Plantation Development Programme (NFPP), in September 2001. This was aimed at encouraging the development of a sustainable forest resource base that will satisfy future demand for industrial timber and enhance environmental quality. Additionally, the programme is expected to generate jobs and significantly increase food production in the country thereby contributing to wealth creation and reduction in rural poverty. (Forestry Commission, 2005:4)

Under this programme, different approaches designed for plantation were the non-commercial Modified Taungya System, the HIPC Plantation and the Industrial (Commercial) plantations both within and outside forest reserves.

#### 2.12.1.1 Modified Taungya system (MTS)

The MTS is a strategy for establishing plantations where farmers are given parcels of degraded forest reserve lands to produce food crops and are required to assist in the establishment and maintenance of trees on the same piece of land. The Forest Services Division (FSD) under the Forestry Commission (FC) is implementing the MTS with the active involvement of rural communities.

This strategy is practiced where communities bordering degraded forest reserves are experiencing land scarcity for farming while portions of such reserves have been earmarked for reforestation. The Contribution of farmers' labour towards the establishment of such plantation is treated as equity and thus they receive a commensurate share of future benefits from the plantation. (Forestry Commission, 2006:2).

Agyeman *et al.* (2010:27) reported that, farmers gaining access to forestlands for food production and planting seedlings in return is more profitable than cultivation food crops on farmlands outside the reserves. This is due to higher fertility of forest soil compared to farmlands. Through Therefore through this initiative, farmers have the potential to earn extra income from maintaining the plantations beyond the plant establishment stage up to maturity which has appositive impact on their livelihoods. Job opportunities created under the MTS can be categorized into two – full time and casual by-day jobs. The full time jobs were in the form of

farming opportunities granted to peasant farmers from forest-fringe communities. The casual by-day jobs were offered mainly for activities such as site preparation, peg cutting, pegging, seedling production, and planting. Again farmers have 40% share in the final product when harvested which serves as a long term investment for farmers and their household.

#### 2.12.1. 2 Industrial (Commercial) plantations

The Government is promoting establishment of industrial plantations by foreign Investors on on-reserves. The ultimate beneficiaries of government strategy for plantation development on on-reserves are the general public. Firstly through the increased availability of timber products to the domestic market and improved viability of the wood industry; Secondly, through employment generation for and poverty alleviation by the many enterprises that would absorb unskilled and skilled labour (Agyeman *et al.* 2010:26)

#### 2.12.1.3 Community Forest Management Project

Other Development Partners introduced various initiatives to support collaborative forest management in the country and among these is the Community Forestry Development Programme funded by the African Development Bank. The main objective of the project was the rehabilitation of degraded forest reserves through the establishment of forest plantations while increasing production of agricultural, wood and non-wood forestry products through alternative livelihood interventions. These objectives were to be achieved through the four project components: Integrated Forest Management, Sustainable Livelihood Support Scheme, Capacity Building and Institutional Strengthening and Project Management. (CFMP Report 2011). The project was implemented between 2003 and 2010 on pilot basis in five forest district and the activities undertaken included the establishment of community tree nurseries, forest plantations and establishment of firebreaks.

#### 2.12.1.4 The New National Forest Plantation Development Programme

The current Administration under His Excellency Prof. J E A Mills, also echoed the need for collaboration through plantation development by introducing The New National Forest

Plantation Development Programme which was launched by the President at Abofour near Offinso in the Ashanti Region in January 2010. The overall goal of the programme is to develop sustainable timber resource base to augment wood supply from the natural forest and to enhance environmental quality. The specific objectives are to generate employment as a means to reduce rural poverty, to restore the degraded forest cover of Ghana, to improve environmental quality and take advantage of the carbon market trade, to reduce wood deficit situation in the country and finally to enhance food crop production and thereby enhance food security. (FC Report 2010:12). The major difference here is that, this system employs paid labour and contractors from the private sector for the plantation activities. According to an FC Report, the programme provided employment for 28,308 people and thereby improving the livelihood of their households.

#### 2.12.2 Forestry Forum

According to Rhein (2002:8), a forestry forum is a space for interaction, discussion and debate, which provides opportunities for the voice of different stakeholders to be incorporated into the (forest and land) policy and decision-making process.

The Forestry Forum concept was initiated by the Forestry Sector Development Project (FSDP II) of the DFID, which had a goal to protect, rehabilitate and sustainably manage national land, forest and wildlife resources through the collaborative management and so sustainably increase the income of rural communities who own these resources. (Forestry Commission, 2005)

The Forestry Fora Network initiative envisages the creation of fora at district, regional and central level to strengthen the relationship and process aspect of civil society in support of pro-poor changes in the forest and land sector.

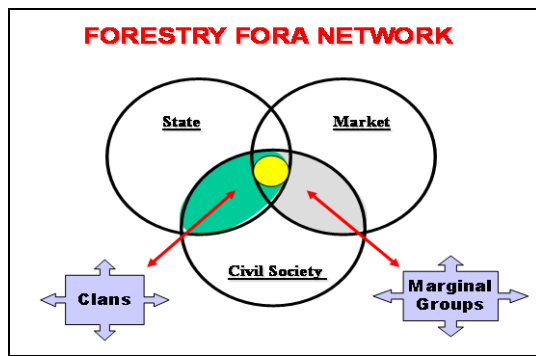


Figure 2.3 forestry fora network

Source: Rhein (2002)

The forestry fora are centered in the intersection between the three sectors while also involving marginalized and indigenous ‘civil society’ groups. This is shown in figure 2.3 above. The main purpose of these fora, however, is to strengthen the dialogue and interactions between representatives of the state and the civil society so as to:

- ❑ improve the quality of policy, by allowing the government to tap wider sources of information, perspectives, and potential solutions;
- ❑ meet the challenges of the emerging information society by establishing venues for greater and faster interactions with citizens;
- ❑ integrate public input into the policy-making process, in order to respond to citizens’ expectations that their voices (especially those of the poor and marginalised) are heard, and their views considered, in decision-making by government;
- ❑ respond to calls for better governance, greater government transparency and accountability, as public and media scrutiny of the forest sector increases; and
- ❑ Strengthen the possibility of ensuring equity in benefit flow from the sector taking account the interest of marginalised groups.

### 2.12.3. Social Responsibility Agreement (SRA)



The issue of equity in the distribution of benefits from forest resources has been of priority to policy makers, social development experts and environmentalists who are all interested in sustainable resource development. While timber royalties have been stipulated in the Constitution of Ghana to be distributed to landowners and District Assemblies, there was no legal provision to ensure that timber revenues cater for community needs within the catchment areas of exploited timber.

Over the years, however, concessionaires and logging contractors have had informal arrangements with forest communities and traditional authorities under which the former funded social services and amenities. With the 1994 Forest and Wildlife Policy laying particular emphasis on sustainable resource management and increased stakeholder participation, legal reforms were required to translate the directive principles of the policy into action. Thus introducing the Social Responsibility Agreement (Forestry Commission, 2006:10 )

A social responsibility agreement (SRA) is part of the new type of contractual arrangement between landowning communities represented by the government and the timber contractor, which grants a timber right to the contractor over a specified area for a specified period of time. The Minister of Lands and Forestry enters into this agreement on behalf of the forest Services Division and the landowners

- Policies and legal basis of SRA

The legal reform of the concession system was affected through the 1997 Timber Resource Management Act (TRMA) (Act 547) and the accompanying 1998 Timber Resource Management Regulations (LI 1649). These new legal instruments emphasize the need for legal contracts between the state, communities in timber operational areas and the timber-harvesting right holders – as embodied in the Timber Utilization Contracts (TUCs).

Although SRA has three components, the one that affects livelihoods of fringe communities is the Social Obligation.



These are specific agreements drawn up between the community and the contractor based on the stumpage or the value of lumber being removed from the TUC area. The SRA should specify the particular commitments of the TUC holder to support development initiatives of the local communities either in cash equivalent or a commitment for other goods, services or infrastructure support. This is what ensures that the communities financially benefit directly from the exploitation of timber resources from their area. This may include the following:

- The provision of infrastructure, such as schools, boreholes, etc.
- Provision of building materials for schools
- Employ a minimum number of local workers
- Establishment of a community development fund
- Provision of off-cuts

#### 2.12.4 Boundary Maintenance Contracts

Over the years, the maintenance of the forest reserve boundaries was undertaken by Forestry Department which was not up to the desired expectation. The forest guards were unable to execute the task properly thus resulting in the blocking of forest reserve boundaries (FMSC 1999: 9)

Under the 1994 Forest and Wildlife Policy, the Ghana Forest Services (now Forestry Commission) is enjoined to collaborate with the forest fringe communities. Boundary maintenance contracts are thus one of the strategies for ensuring productive working partnership with forest fringe communities.

Under the present boundary-cleaning schedule which is twice in a year, the contract works is done in May to June and November to December of each year. This is to enable forest- fringe community members who are predominantly farmers to earn some income during the lean season as well as keep the boundaries free from weeds at the beginning of the dry season to reduce the incidence of wildfires.

According to the Guideline on Community Boundary Maintenance Contracts, the rates for payment for community members involved in this activity must reflect the market rate of labour prevailing at the time of the contract. This is based on the “by day” rate and rates paid by other organizations such as Ghana Highway Authority.

By participating in this, communities have a number of benefits which include the following:

- The prospect of cash income
- The prevention of wildfires from spreading from the forests
- The prevention in the encroachment of the forest reserve which is recognized as their property
- The meaningful utilization of their idle time
- The building of a good rapport between the Forestry commission and Forest fringe communities.

#### 2.12.5 Green firebreaks establishment

This aspect of Collaborative forest management is concerned with the prevention of forest fires through the establishment of firebreaks. According to Ninnoni *et al.* (2003:10), the overall objective of fire prevention is to reduce the annual amount of forest burnt. In many areas of Ghana, fire is the most serious threat to the continuous existence of the forest areas. The report further explained that since the drought in 1983, large sections of the reserves in the transition zone have been reduced to open grassland and shrub. The primary cause of wildfires in Ghana is human use that is fires that escape from agricultural clearing, palm-wine tapping, smoking and the like. The people living around the reserves will primarily determine the success of the any fire programme.

It is therefore of essence to involve these people in any fire programme is success is to be achieved. The Farming communities along the periphery of forest reserves are consulted to seek their participation in the establishment of green firebreaks. This is intended to achieve benefits to the rural communities through income as well as solicit their participation in forest reserve rehabilitation (CRMU, 1999:9)

Ninnoni *et. al.* (2003:11) emphasized that, green fire breaks provides sustainable livelihoods, means of employment, increased food production and maintenance of local industry (weaving, snails and distillation of local wine) for forest fringe communities. These thus support the fight against poverty in Ghana.

#### 2.12.6 Eco-tourism development

Hartshon (1995:155) defined eco-tourism as travel to relatively undisturbed or uncontaminated natural areas with the objective of studying, admiring and enjoying the scenery and wild plants and animals as well as cultural manifestations found in those areas.

Sampson (2004:21) reported that although Eco-tourism has become one of the largest industries and fastest growing sectors by 1992, it gained much boost in 1999 at the 7<sup>th</sup> Session of UN Commission on Sustainable Development (CSD7). Tourism and sustainable development as a concept was reviewed and government were urged to maximize the potential of tourism for eradicating poverty by developing appropriate strategies in collaboration with all major stakeholders to promote linkage within the local economy in order share benefits more widely and for greater efforts to be made to employ the local contribution of ecotourism to livelihoods which promote poverty alleviation.

Sampson further explained that Eco-tourism provides the potential to attractive tourists and could more easily generate economic returns to local communities than do traditional rural development projects. It provides income and wages to people from formal employment, people benefit from the sale of goods, services and casual labour, there is dividends and profit from locally owned enterprises, Again, it provides collective income which may include profits from community owned enterprises, rentals, joint ventures or levies. Finally, communities tend to benefit from infrastructural development like provision of roads, water, electricity and communication systems.

### 2.12.7 Community Resource Management Committees (CRMCs)

According to Obiaw (2010:2), CRMCs are Institutions at the community level empowered by the nation's legal system as the mouthpiece of the resource fringe communities on forest management issues at the national level and to improve improve the capacity for community collaboration at the local level. It includes Community Forest management Committees (CFC) in forest reserve.

In the late 1990s it was identified that; There was no acceptable, recognisable and informed body through which to have liaison with a wide group of local stakeholders, Lack of a voice to represent the community interest in policy making at the national level, lack of awareness and knowledge of forestry, especially people's rights, within communities and Lack of a local body to monitor the provisions of forest management.

Asare (2000:14) reported that in a bid to devise an appropriate community forest management structure, the FSD in conjunction with communities and timber concessionaires implemented a project that explored and developed what has now come to be known as Community Forest Committees (CFC). The original project aim was to devise innovative schemes by, which timber and forests outside forest reserves could be managed by communities and timber concessionaires with technical assistance from the FSD. Under the project, consultations were held with major stakeholders connected with forest management outside forest reserves to identify important forestry issues requiring attention. A strategic plan was therefore formulated to address the issues. At the early stages of project implementation, it became apparent that there was the need to form exclusive management structures at the community level to link up with the FSD to execute the project's activities

At their fully functional state, the Community Forest Committees are to be the main channel through which the statutory forest management agency, that is, the FSD is to implement its collaborative forest management activities. To this end, the CFCs will operate from the grassroots up to the highest levels of forest management. The involvement of the CFCs in forestry will focus around the three levels of forestry, namely:

- Forest Policy Formulation

- Forest Management Planning
- Execution of Forest Operations.

Through these activities, it is expected that there will be a boost in cash income of households, particularly diversifying income sources, and the households would be better placed to manage risk (Obiaw, 2010:21)

#### 2.12.8 Dedicated forests

The Section 5.3.1 of the 1994 Forest and Wildlife Policy places emphasis on dedication of various land categories with potential for nature protection and production of all forest resources (FC, Forest and Wildlife Policy 1994). It is therefore a policy of the government to encourage the establishment of dedicated forests as a means of enriching the off-reserve timber resources. Pilot programmes on the establishment of dedicated forests were thus undertaken in some selected communities. The Forestry Department intends to encourage more communities to own dedicated forests. Through this, communities will be supported to prepare management plans and manage the forest for their own benefits. (Forestry Department, Planning Branch, 2000:18)

In Ghana, dedicated forests include Sacred Grooves, Trees on Farms, Woodlots, Forest Patches and Community Resource Management Area (CREMA). Through participating in these communities have control over harvesting rights and benefits sharing in accordance with existing legislation.

#### 2.12.9 Achievements of Collaborative forest Resource Management in Ghana

- Introduction of SRAs have provided an opportunity to landowners to indicate the concession in which the TUC holder should operate on their lands. SRAs also regulates timber-harvesting operations to ensure that direct benefits go back to landowning communities



- Incidence of wildfires has tremendously reduced due to the establishment of green fire-breaks around the various reserves.
- The introduction of Modified Taungya System has contributed to a very large extent reduction of forest degradation and deforestation in areas it has been undertaken.
- There has been improvement in the livelihoods of the communities in which most of the CRM initiatives have been undertaken since the communities are allowed to undertake the activities involved.

# KNUST

## 2.12.10 Challenges faced by Collaborative Forest Resource Management in Ghana

There are various factors that militate against CFM becoming a mechanism to achieve social justice and local participation in forest management. These include:

- Vested interests unwilling to devolve power to new forest management partners.
- Community participation' becoming vulnerable to capture by community elites.
- Protagonists which promote collaboration for reasons completely other than those linked to advancing social justice.
- Funding problems which includes delay in approval of budget for a particular program as well as Inadequate funding for various programs is also a huge challenge.
- Legal Challenges as Collaborative Resource Management Department does not have legal backing to handle issues beyond its control.
- Inadequate logistics which affect the dispensation of their duties and also cause delays in carrying out research works.
- Continuity of programmes sometimes affect the attainment of the full benefits of initiatives.

## Summary of findings

Governments through the Forestry Commission introduced Collaborative Forest Management to provide employment opportunities as a means of reducing poverty and also develop sustainable



forest resource base. From the examples of CFM initiatives from different countries, it is clear that important progress in local people's empowerment has been made in many countries. Where previously communities had no access to public forest resources, no rights to take management decisions, no opportunity to obtain technical support from the forest agency, there has been a significant change in the framework of forest management. Critically, in many countries, communities that enter into forest management partnerships do so in the knowledge that their rights of access to the resource, and the benefits that may accrue from the time invested in management, are secured by legislation



## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.0 Introduction

This chapter gives a vivid description of the methodology used for the research and the profile of the study area following the theoretical background provided in the previous chapter. The methodology gives a detail of the approach used for the research. It describes the data collection and analytical techniques applied. Emphasis is laid on the research design, sampling size and its determination, research variables and source of data. The profile of the study area also describes the physical and demographic characteristics of the area.

#### 3.1 Research design and variables

The design for this research is a case study. The case study approach involves procedures and techniques of investigating and understanding the dynamics of a particular system. It was adopted because it is the best approach for the study of contemporary issues and in situation where the boundaries between the phenomena and context are not clearly evident as is the case of collaborative forest management and the extent to which it contributes to the livelihoods of people involved. A combination of qualitative and quantitative methods was employed to collect the necessary data required to meet the objective of the study. The variables captured in this research were employment, income and food security under the concept of livelihoods.

#### 3.2 Population, sample frame and sample size

According to Nachmias and Nachmias (1992), a population is the aggregate of all cases that conform to some designated set of specification while a sample is any subset of the sampling units from a population. By this definition, the number of households in the Ashanti Region becomes the population. The sample frame is the number of households involved in collaborative forest management activities within the five selected forest districts in the Ashanti region

(Bekwai, Offinso, Nkawie, Kumawu and Mampong) from which a sample size is chosen by scientific method.

In the absence of a definite sample frame, district forest managers and their technical officers within the region were consulted to help select the sample size. In all, one hundred and fifteen (115) households were selected from eleven communities in the five selected forest districts across the region.

### 3.3 Sampling techniques

A multi-stage sampling approach was used to select respondents for the study. According to Nachmias and Nachmias (1992), this approach ensures representativeness and accuracy in sample drawing. The techniques employed are as follows:

- Cluster sampling: the entire region has been put into seven forest districts by the Forest Services Division for the purposes of forest management and so this same demarcation boundaries were been used by the researcher for the study. The districts are indicated by Figure 3.1. Although all the districts were involved in some aspects of collaborative forest management, there was the need to sample some of them due to time and financial constraint.
- Simple random sampling was therefore used to select five out the seven forests district. This is a procedure of sampling which gives each sampling unit within the population an equal and non-zero probability of being selected. (Nachmias and Nachmias , 1992:177). For this study, the names of the seven Forest Districts were written on paper, folded, and put into a box. After a thorough shake up, one card was picked and the name recorded. This process was repeated four times to select the five districts for the survey. These were Offinso, Bekwai, Nkawie, Mampong and Kumawu forest districts respectively.
- After having the five districts, purposive sampling technique was used to select eleven communities (three from Offinso and two from each of the other four districts) based on their activeness in participating in collaborative forest management. This was done with assistance from the District Managers and Technical officers from each of the districts. The number of respondents from the communities also varied due to size of the

community, and how long they have been involved in collaborative forest management which invariably had an effect on the information available. Table 3.1 gives a representation of respondents from the various communities selected.

- Stratified sampling was used to split each community into two blocks that is people involved in collaborative forest management activities and those not. This method was to ensure that the different groups were represented in the sample so that the level of accuracy in estimating parameters was increased. (Nachmias and Nachmias, 1992:179). At this stage, the technical officers of the FSD assembled the people involved in these initiatives that were basically heads of households in each of the communities, explained the purpose of the study after which they were put into the two blocks. Respondents were then selected from the blocks based on simple random sampling where “Yes” and “No” cards were used. Respondents who pick “Yes” card were interviewed while those who pick “No” were not.
- Forestry Officials from the selected Districts were also interviewed.

Table 3.1 Respondents from selected communities in the districts.

Forest District	Selected Communities	Number of respondents
Offinso	Asempanaye	11
	Anyinasuso	6
	Koforidua	13
Kumawu	Bahankra	10
	Besoro	13
Bekwai	Mampamhwe	13
	Kwabenakwa	13
Mampong	Atonsua	8
	Dome	11
Nkawie	Kyekyewere	9
	Akotaa	8
Total	11	115

Source: Research survey, July 2011

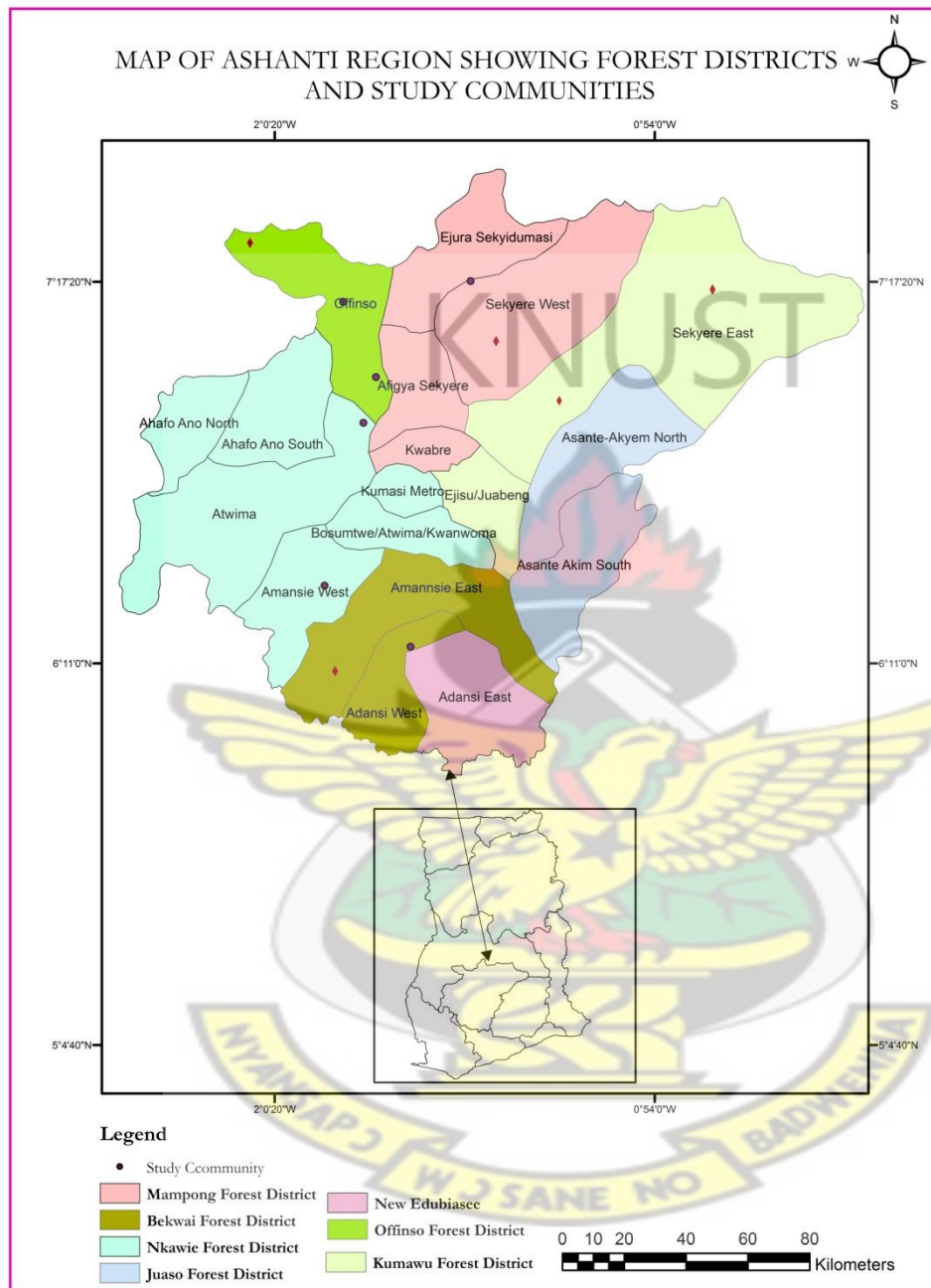


Fig 3.1 Map showing forest districts in Ashanti Region and study communities.

Source: GIS Unit, Forestry Commission, 2012.



### 3.4 Sources of data and methods of data collection

In order to achieve the set objectives for the study, information on Collaborative Forest Resource Management from both primary and secondary sources was required. Primary data was collected from the one hundred and fifteen household heads and seven forestry officials from the five forest districts of the Ashanti Region using one-on-one interviews. Questionnaires for the interviews were both structured and unstructured. The structured questionnaires made analysis easier whilst unstructured ones allowed respondents give all relevant information without restrictions. After these interviews, people involved in similar activities were put into groups for focus group discussions to validate the responses given earlier.

The secondary data was obtained from a variety of sources including published and unpublished literature. This included District Development Plans, reports, journals papers and a variety of forestry issues from the Districts under study as well as the Ashanti regional and head office of the forestry commission. According to Nachmias and Nachmias (1992:293), this enables primary data collected to be compared with the data in earlier studies to provide a follow up.

The following activities were undertaken during the primary data collection.

- Familiarization visits: a visit was made to the five selected forest districts within the Ashanti region to strike some acquaintance with the officials of the Forestry Services Division at the districts level and to assist in selecting communities and households for the interview.
- Pre-test survey: the researcher spent 10 days carrying out reconnaissance survey in the region. This was to establish the necessary contact with households in the selected communities where the survey would be conducted, to pre-test the questionnaire to be used in the survey.
- Interviews: Households within each community were stratified into two categories, namely, households involved in collaborative forest management activities and households not. A total of 115 households, consisting of 105 households involved in and 10 households not involved in collaborative forest management activities were

interviewed from the selected communities using structured questionnaires and focus group discussions. Seven (7) forestry Officials were interviewed as well.

The respondents were interviewed in their houses either early in the morning or late afternoon, on taboo days and market days. Each interview lasted for a maximum of one hour. With the exception of the forestry officials, all the other interviews were conducted in the local language.

# KNUST

## 3.5 Methods of data analysis

Before the data was analyzed, the collected data was processed by editing and coding to eliminate all errors. Caution was taken to ensure that the codes assigned are exhaustive, detailed and makes an intuitive sense. Both quantitative and qualitative techniques of data analysis were adopted. Quantitatively, the data was collated and structured according to the various study areas. Codes were then assigned to each variable and the responses for each variable were then grouped under the variables. Using Excel, the data was then set out according to the responses. This led to the generation of frequencies for each. Graphical presentations and charts were then generated from the frequencies.

## 3.6 Profile of study area

The profile outlines the location and size, the physical characteristics (relief and drainage) as well as the demographic features of the region under study.

### 3.6.1 Location and Size

The Ashanti region is centrally located in the middle belt of Ghana. The region shares boundaries with four of the ten administrative regions, Brong-Ahafo Region in the north, Eastern region in the east, Central region in the south and Western region in the South west.

The region occupies a total land area of 24,389 square kilometers representing 10.2 per cent of the total land area of Ghana. It is the third largest region after Northern (70,384 sq. kms) and Brong Ahafo (39,557 sq. kms) regions. Administratively, the region has a total of 27 metropolitan, municipal and districts with Kumasi as its capital.

### 3.6.2 Relief and Drainage

The Region has a horse-shoe range of hills which runs eastwards. The highest elevation is Kwamisa located in the Offinso North District, which is 760 metres above sea level.

The region is endowed with a spectacular geography-lakes, scarps, forest reserves, waterfalls, national parks, birds and wildlife sanctuaries. Notable among them are Bomgobiri wildlife sanctuary and Owabi Arboretum in Sekyere Afram Plain and Atwima Nwabiagya districts respectively (Ashanti Regional Co-ordinating Council, 2010). The region is drained by Lake Bosomtwe, the largest natural lake in the country, which lies 28km south – east of Kumasi and occupies an area of 47.68sq km. It is a meteoritic lake, nearly circular in shape and measures about 10km across at its widest part. Other rivers include Rivers Offin, Pra, Afram and Owabi. There are other smaller rivers and streams which serve as sources of drinking water for residents of some localities in the region.

### 3.6.3 Rainfall and Temperature

Average annual rainfall is about 166.7cm with two rainy seasons. The major rainy season starts in March, with a major peak in May. There is a slight dip in July and a peak in August, tapering off in November. December to February is dry, hot, and dusty. Temperatures average over 27°C in the forest zone and 29°C on the northern fringes of the forest zone.

The rainfall pattern coupled with the temperature provides the micro-climate for agro-forestry. This makes the Ashanti region a beneficiary of most collaborative forest resource management initiatives that are rolled out in the country.

### 3.6.4 Vegetation

The vegetation is broadly classified into two: Semi deciduous forest and Guinea Savanna woodland. Due to human activities and bushfires, the forest vegetation of parts of the region, particularly the north-eastern part, has been reduced to savanna. More than half of the region lies within the wet, semi-equatorial forest zone.

The vegetation type in the region makes is conducive for most tropical tree species like Ceiba, Mahogany and Wawa as well exotic species like Neem, Cedrella and Teak to thrive. This again makes the region attractive for collaborative forest resource management interventions.

### 3.6.5 Forest Resources

About 3408 square kilometers representing 22.5% of Ghana's high forest are in Ashanti Region. The region has a total of 58 Forest reserves and this is presented pictorially by figure 3.2. Of the region's forest reserves, about 65% are being exploited whilst the remaining 32% are protected. The region's high forest area is rich in trees of high commercial value. A sizeable quantity of bamboos and canes grow wild in the forest belt of the region (Obiaw, 2010: 3)

For forest management purposes, the region has been put into seven forest districts namely: Bekwai, Juaso, Kumawu, Mampong, New Edubiase, Nkawie and Ofinso.

### 3.6.6 Population

According to the provisional results of the 2010 Population and Housing census, the region had a population of 4,725,046, making it the most populous representing 19.5 per cent of the country's population and has a population density of 194 per square km. The region's population growth rate was 2.9 per cent per annum in 1970, dropped to 2.5 per cent per annum in 1984, increased to 3.4 per cent in 2000 and dropped again to 2.6 in 2010 (GSS, 2011)

Akans are the predominant ethnic group in the region, representing 77.9% of Ghanaians by birth in the region. A high proportion (78.9%) of the Akan population is Asante. The non-Akan population in the region comprises the Mole- Dagbon (9.0%), the Ewe (3.2%), the Grusi (2.4%), the Mande-Busanga (1.8%) and the Ga- Dangme (1.4%). The other smaller ethnic groups form about 1.3 per cent of the population of the region.

The population poses a threat to forest resources management as other land-use activities like agriculture and construction are competing with conservation of forest resources. This makes it necessary to intensify collaborative forest management efforts to prevent the reduction of forest vegetation into savanna as is happening the north-eastern part in the region.

#### 3.6.7 Household size

All the districts in the region have more than one household per house. The average number of households per house in the districts ranges from 1.4 households in Adansi East, to 3.4 households in the Kumasi Metropolis. The relatively large number of households per house in Kumasi may be due to the relatively large population in the metropolis. (Regional Co-ordinating Council, 2010). This situation poses a threat to the forest resource base as more forest lands need to be converted to farmlands to produce food to feed the ever increasing population as well as housing facilities to accommodate these households.

#### 3.6.8 Population distribution by Economic activity

Out of the total 1,612,467 economically active population in the region, primary production activities in the form of Agriculture, hunting, forestry and fishing employs 43.8%, followed by Industry with 18.5% and services employing 37.7% people. This is represented in the table 3.2 below.

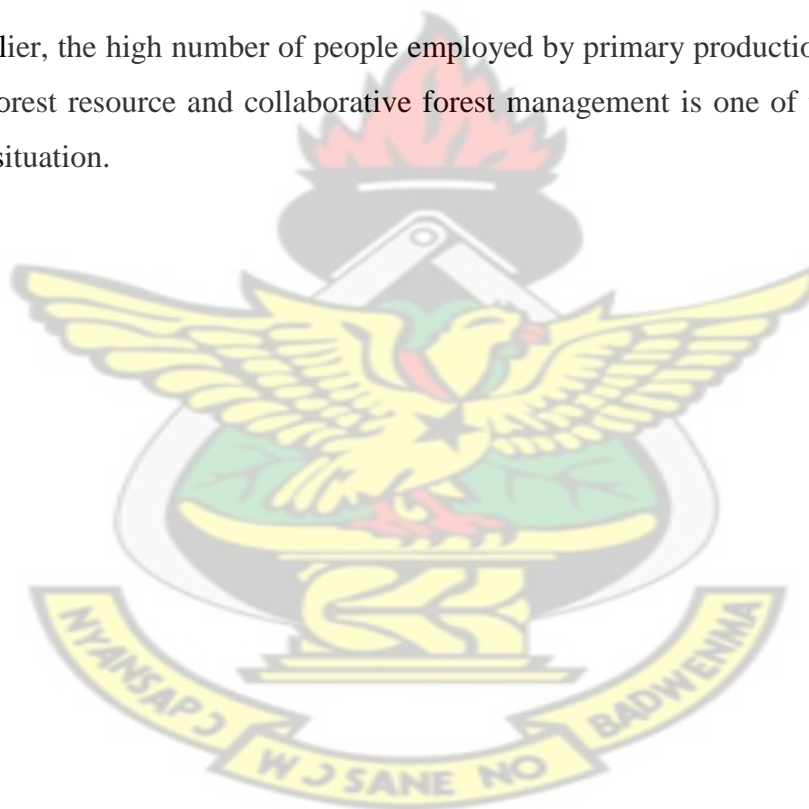


Table 3.2 Distribution of population in Ashanti Region according to economic activities

Activity	Population employed	Percentage
Primary production(Agriculture, hunting, forestry and fishing)	706,888	43.8
Services	607,784	37.7
Industry	297,795	18.5
TOTAL	1,612,467	100

Source: GSS, 2000

As indicated earlier, the high number of people employed by primary production activities poses a threat to the forest resource and collaborative forest management is one of the measures that can address the situation.



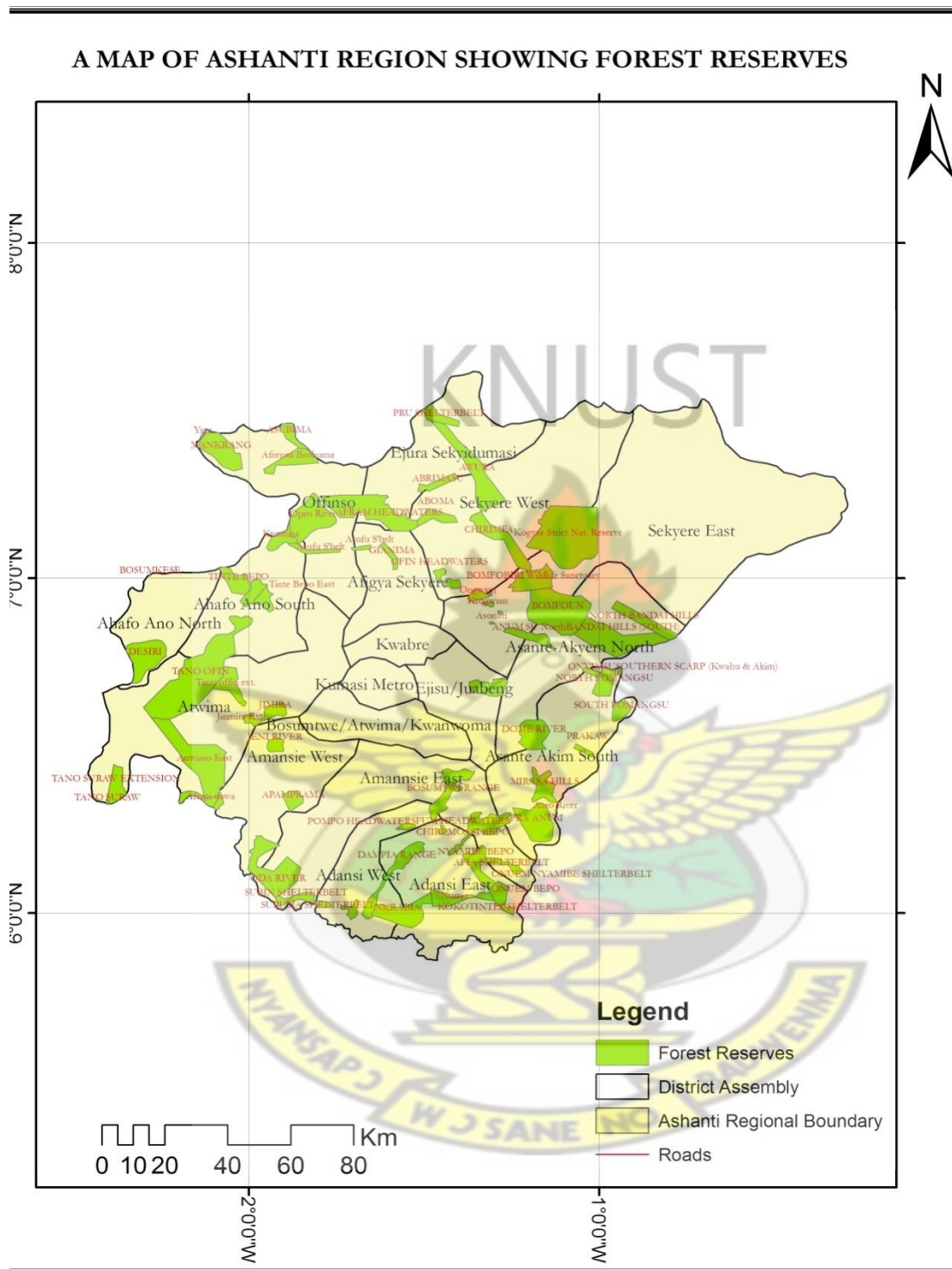


Fig 3.2 A map showing forest Reserves in the Region

Source: GIS Unit, Forestry Commission

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.0 Introduction

After giving a description of the study area and the methodology used for the survey in the previous chapter, this chapter analyses the data collected to make it meaningful and useful. The data was analyzed both quantitatively and qualitatively. It was however mostly qualitative as it describes the issues observed from the field and information gathered from interviews using frequencies, graphs and charts.

Issues covered in this chapter includes the reason for collaborative forest management in the Ashanti region, respondents of the survey, extent of collaborative forest management and selection of communities for the initiatives. It also provides information on how collaborative forest management affects the livelihood of people involved in terms of job creation, income and food security.

#### 4.1 Why Collaborative Forest Management in the Ashanti Region

In an interview with the Assistant Regional Manager of the Forest Services Division, on March 8, 2011, it was mentioned that the Region is within the High Forest Zone Classification. He further stated that 13 % of the total land area of the region was demarcated and gazetted as Forest Reserves in the 1930s under the 1927 Forest Ordinance.

Satellite imagery of the forest resources taken in 1986 and 2002 indicates massive deforestation and forest degradation as indicated in figure 4.1. From the images, it can be observed that the dense forest cover (dark green) which was available in 1986 had reduced considerably with lost open forest (purple) and agricultural lands (yellow) taking over. This according to him is a result of conversion of forestlands into other land uses like agriculture and infrastructural development, the activities of chainsaw operators and adverse effect of bush fires that have changed the natural

vegetation leading to rapid depletion of economic trees. This situation supports the fact that forest lands are been cleared to make way for food production and housing for the increasing population.

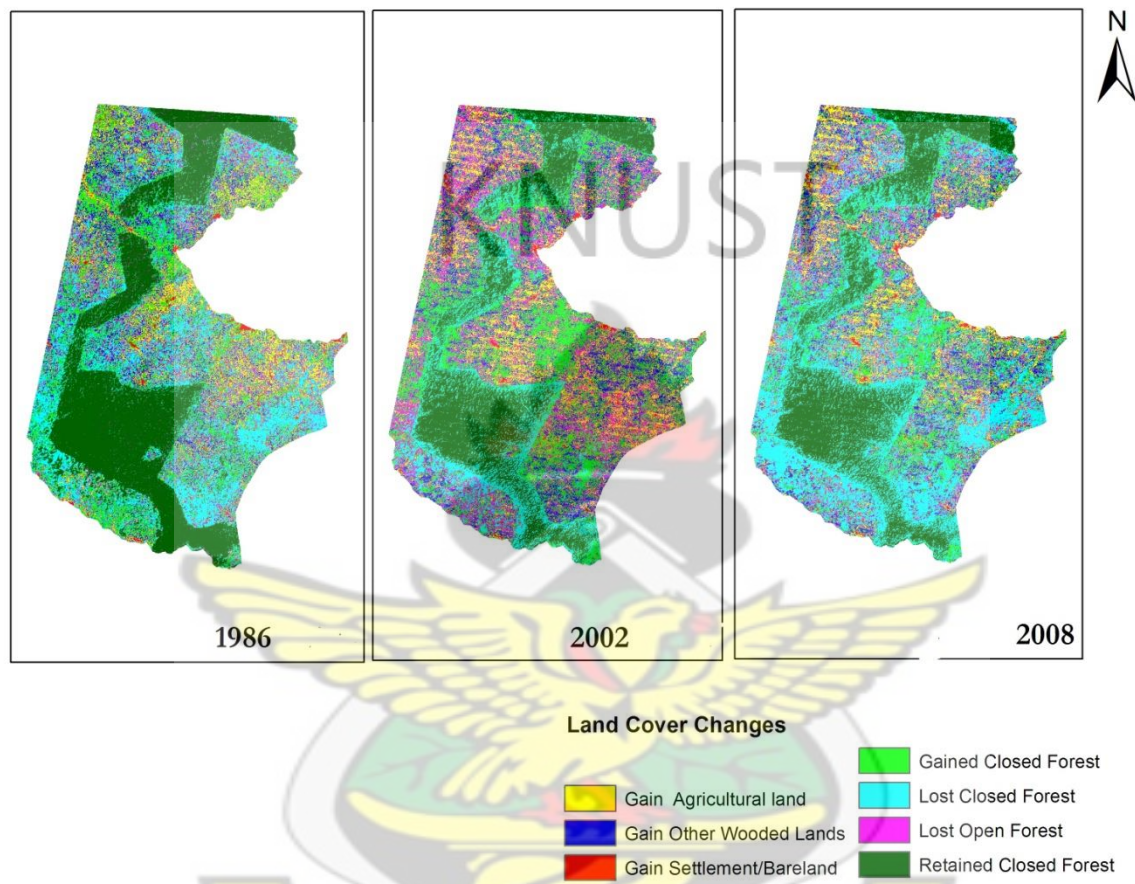


Figure 4.1 : Sections of Ashanti Region indicating land cover changes since 1986.

Source: GIS Unit, Forestry Commission, 2011

Again, some forest districts (eg. Kumawu) are located within the transition between the high forest and savanna zones and therefore vulnerable to wildfire. This situation coupled with the ratification of the 1994 Forest and Wildlife Policy called for measures to promote collaborative forest management in the region.



The Manager further explained that, farming communities were renowned for their cultivation of cocoa, coffee and other traditional cash crops in the 1940s and 1950s. However, there has been a shift from the cultivation of these traditional cash crops in the last decade to collaborative forest resource management activities as a result of the introduction of Collaborative Forest Management Project, which was an African Development Bank sponsored Project in some Districts within the region in 2005. This project raised the interest of farmers to get involved in farm-forestry activities like Taungya systems, private plantations, boundary clearing and the establishment and management of small-scale forest plantations on their farm lands. This provided farmers with the short term benefits of trees-on farm which includes provision of conducive micro-climate for their crops as well as the long term financial benefit upon the sale of the commercial tree species planted. Aside these personal benefits, the nation has benefited from increased forest resource base which is income for the economy.

The images in 2002 and 2008 showed an increase in gained woodland (blue) which can be attributed to increased tree crops like cocoa, oil palm and the few forest tree plantations which were being undertaken within the period due to the introduction of collaborative forest management activities. The exact area covered was however not available.

The interview with the manager confirmed the need for collaborative forest management in the region as it was one of the means of addressing deforestation as indicated on the 2008 satellite imagery which depicted a slight improvement in the situation (gained wooded lands). He however recommended that a visit and interviews with the district managers will give a better picture of the extent of this important intervention in the region.

## 4.2 Representation of Respondents

This section provides information on respondents that were interviewed. The areas covered were basically gender and age grouping of the respondents. The idea is to indicate how the various groupings are involved and contribute to collaborative forest management in the region.

### 4.2.1 Gender representation



Out of the 115 respondents interviewed only 28 of them representing 24 percent were females. This is due to the fact that in this social setting, males were mostly household heads and females supported their spouses in their livelihood activities rather than working independently and the respondents attested to this. The female respondents were thus the elderly, divorced or spinsters and were mostly involved in nursery establishment and Modified Taungya System (MTS). This according to them was because the nurseries could be raised in their homes giving them the opportunity to work and take care of other domestic activities. Their involvement in MTS is due to the fact that MTS has a component of food crop production which is the responsibility of women in the traditional setting as they know the needs of the family where food is concerned.

#### 4.2.2 Age Distribution of respondents

The respondents for the survey fell into the various age groupings as shown in table 4.1 below.

Table 4.1 Age distribution of respondents

Age Group (years)	Absolute number	Percentage
20-30	6	5
31-40	17	15
41-50	44	38
Above 50	48	42
Total	115	100

Source: Research survey July, 2011

According to the data obtained from the field, and presented in Table 4.1 above, 80 percent of the respondents are over 40years of age. This is mainly as a result of the low remuneration packages (a daily wage at by-day rate) associated with the initiatives which are woefully inadequate for their survival and make it less attractive to the youth. Again, the younger folk are interested in farming projects with dividends within the shortest possible time and therefore have less interest in forest management activities with benefits in the long term. Those beyond age 40

however, were already in farming and other activities and so whatever they earned from their involvement in CFRM initiatives was to support their other livelihood activities. This situation however has serious implication for the future of our resource if the current trend is not changed.

There is therefore, the need to disabuse the minds of the youth on this notion and also repackage these initiatives to make it attractive for the youth to get involved in forest management activities in the country.

## KNUST

### 4.3 Extent of Collaborative Forest Management in Ashanti Region

This section describes the various collaborative forest management initiatives in operation with respect to the Ashanti region and how communities are selected for the initiatives. Separate interviews with district managers in the five selected districts indicated that collaborative forest management although a necessary intervention was not being fully undertaken in the region to have the needed impact. This was because the initiatives were mostly implemented in few selected communities on pilot basis and so the impact was limited to those localities. Again the initiatives were undertaken with financial support from World Bank and other development partners which made it unsustainable as they were abandoned when the funds get exhausted. The District managers were however optimistic that if government gave the needed support for these initiatives, deforestation and forest degradation will be a thing of the past as far as the region is concerned.

#### 4.3.1 Collaborative Forest Management Initiatives in the Region

According to Moses (2003), Collaborative Forest Management recognizes that local people depend heavily on forest resources and have the interest and potential capacity within their institution to contribute to conservation as long as their rights, responsibilities and benefits are defined and consensus is built between the various parties. The Regional Manager as well as the District Forest Managers in separate interviews confirmed this assertion and mentioned that to

involve local people in forest management and conservation, seven Collaborative Forest Management initiatives are being implemented in the region and these are as follows:

1. **Boundary Clearing Contracts:** This is an intervention to enable forest- fringe community members who are predominantly farmers to earn some income during the lean season as well as keep the boundaries free from weeds at the beginning of the dry season to reduce the incidence of wildfires in forest reserves.
2. **Community Nursery Establishment:** This initiative is to promote community involvement in forestry through the establishment of tree nurseries. While the farmers earn some income from the sale of the seedlings, the seedlings are in turn used for the plantation development programmes.
3. **Plantations (Modified Taungya System, Government plantation development programme, popularly called HIPC and New National Plantation Development Programme):** This was aimed at encouraging the development of a sustainable forest resource base that will satisfy future demand for industrial timber and enhance environmental quality. Additionally, the initiative is expected to generate jobs and significantly increase food production in the country thereby contributing to wealth creation and reduction in rural poverty. (Forestry Commission, 2005:4)
4. **Green fire Breaks maintenance:** This aspect of Collaborative Forest Management is concerned with the prevention of forest fires through the establishment of firebreaks. The farming communities along the periphery of forest reserves are consulted to seek their participation in the establishment of green firebreaks. This is intended to achieve benefits to the rural communities through income as well as solicit their participation in forest reserve rehabilitation. (CRMU, 1999:9)
5. **Forest Forums:** The forestry forum initiative is to provide space for interaction, discussion and debate on forestry issues. It thus provides opportunities for the voice of different stakeholders to be incorporated into the (forest and land) policy and decision-making process to promote good forest governance in the country.(Rhein, 2002:6)
6. **Fire Volunteer Squad:** This initiative is similar to green fire breaks as farmers are paid to create fire-breaks along the periphery of the forests to prevent wild fires.

7. Community Forest Committees: This is a community forest management structure with the aim to devise innovative schemes by which timber and forests outside forest reserves could be managed by communities and timber concessionaires with technical assistance from the Forestry Services Division.

The table 4.2 below gives an idea about the respondents of the research and the groups they represent.

Table 4.2 Distribution of respondents from collaborative forest management groups

CFRM Initiatives	Absolute Number	Percentage (%)
Community nursery establishment	12	10.43
Boundary Cleaning Contracts	6	5.22
Green fire breaks	7	6.09
Plantation establishment	24	20.87
Forest Forums	12	10.43
Community Forest Committees	21	18.26
Fire Volunteer Squads	23	20.00
Not involved	10	8.70
Grand Total	115	100

Source: Research July 2011

Although not all the initiatives provided direct financial benefits to the households, people still had interest to get involved and different reasons were assigned for this. These varied from passion for forest management to financial benefits to be gained. Figure 4.3 illustrates the reasons pictorially.

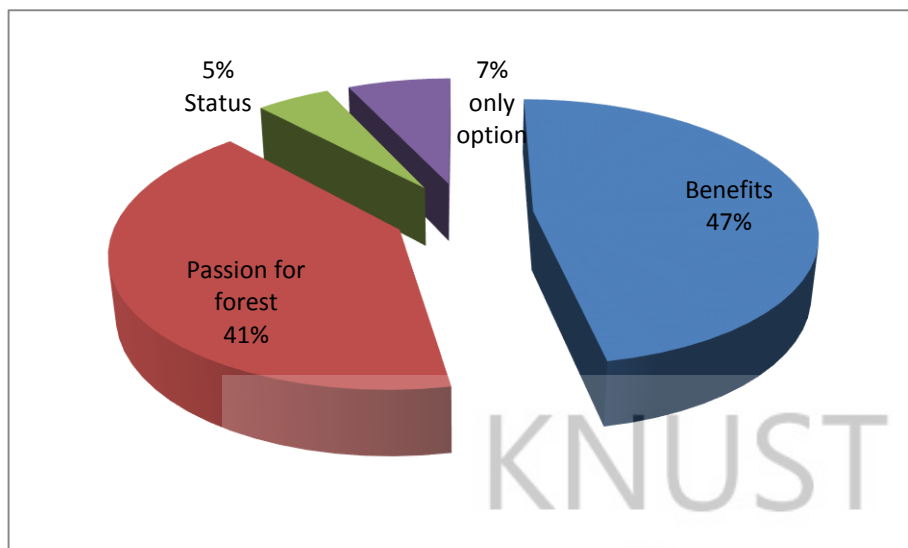


Fig 4.3 Reasons for household's involvement in the initiatives  
Source: Author's construct 2011

#### 4.3.2 Selection of communities for CFRM Initiatives by Forestry Commission

The interviews with managers of the Forestry Commission revealed that despite the call by the 1994 Forest and Wildlife Policy for promotion of Collaborative Forest Management, much needs to be done by government to ensure its success as most of the initiatives was facilitated by development partners through government (Forestry Commission) or Non-governmental Organizations (NGOs). The donor-driven nature of these initiatives makes them limited in terms of geographical space and duration during their implementation and so few localities benefit from them.

For instance, the Community Forestry Management Programme which introduced a number of CFRM initiatives like community nursery establishment, plantations and boundary cleaning contracts was implemented only in three regions across the country (Ashanti, Volta and Brong Ahafo). In the Ashanti region, it was revealed that only one (Offinso) out of the seven forest districts benefited from this programme which according to the Regional forest manager is on the low side and has very little impact on the management of our forest.



Again the project was funded by African Development Bank for the period between 2005 and 2010 and so the employees under those initiatives are currently dormant as there are no funds to pay for their services after the withdrawal of the donor. The Community Forest Committee initiative was also implemented by some NGOs including Rural Development Youth Association (RUDEYA) in the Nkawie Forest district and so the groups are currently dormant as there is no fund to facilitate their existence.

Forestry Forums, another CFRM initiative was facilitated by the Forestry Commission with support from DFID in 2003-2004 in few piloted districts. Although the initiative is ongoing, after all these years, the country does not own the process and depend on the Natural Resource and Environmental Governance (NREG) funds which is multi- donor budgetary support for this all important process.

Ideally, our traditional authorities and district assemblies being permanent institutions are to take up these initiatives and facilitate them but Ghana as a country has not gotten there yet and depend on donor funds for the management of a resource like forestry which contributes about 6% to the GDP. It can be argued here that the extent of collaborative forest resource management in the region and the country as a whole is quite low.

#### 4.4 Collaborative Forest Management and Livelihoods.

Acheampong (2005:9) defines Livelihood as adequate stocks and flows of food and cash to meet basic needs. Collaborative Forest Management provides resources and income-earning activities; ensure adequate stocks and flows of food and cash to meet basic needs. Clearly, food security is an important component of this framework. This section thus emphasizes on these aspects of Collaborative Forest Management.

##### 4.4.1 Job creation and employment opportunities

As indicated in the previous section, Collaborative Forest Management has created employment for people to improve their livelihoods. Data from the Forestry Commission offices gave details about CFRM and employment generated within the region as indicated below.

#### 4.4.2. Plantation Development

Plantations as an initiative under Collaborative Forest Management has created jobs and therefore enhanced the livelihood of households. Jobs offered under the program can be categorized into two; full-time and casual/temporary by-day jobs. The full time jobs were in the form of farming opportunities granted to peasant farmers from forest fringe communities and engagement of plantation supervisors. The casual/temporary job areas have been site preparations, seedling production, peg cutting, pegging and planting. Table 4.3 indicates the employment created by plantations from 2001 to 2010 in the Ashanti Region.

Table 4.3 CFRM and job creation in Ashanti Region

Year	Number of people employed					
	MTS	HIPC	CFMP	NNPD	Nursery establishment	Total
2001	750		-	0	0	750
2002	12,099		-	0	0	12,099
2003	16,325	1,515	-	0	0	17,840
2004	19,116	1,919	-	0	0	21,035
2005	12,397	1,919	1,875	0	853	17,044
2006	12,697	1,919	3,894	0	948	19,458
2007	14,709	1,717	5,043	0	1,104	22,573
2008		1,200	5,790	0	402	7,392
2009	2,088	885	8,529	0	351	11,853
2010				4,699	382	5,081
Total	90,182	11,074	25,131	4,699	4040	135,125

Source: Archives of Plantation Division, Forestry Commission 2011.

The available data as indicated by table 4.2 implies that Collaborative Forest Management created full-time (MTS and HIPC) and casual/temporary by-day jobs (New National Plantation Development Programme, nursery establishment etc) for 135,125 (8.3%) of the workforce in the Ashanti Region between the years 2001 and 2010 providing income for these individuals and their dependents.

#### 4.4.3 Source of income

Collaborative Forest Management is an avenue for income generation as people involved in some of the initiative receive financial benefits by way of salaries, wages or allowances. This supports the report of Moses (2003), which stated that Collaborative Forest Management allows people to harvest forest resources for their use in a sustainable manner, hence, providing income and their needs which invariably lead to reducing or alleviating poverty.

All the respondents depended on one or more livelihood activities (farming and non-farm) apart from the Collaborative Forest Management initiatives and therefore had their income from those activities. The activities that provided households with income apart from CFRM activities were given by respondents and are represented on Table 4.4.

Table 4.4 Income sources of respondents apart from CBNRM

Source	Number of respondents	Percentage
Food crop farming	58	50
Cash crop farming	40	35
Trading	14	12
Teaching	3	3
Total	115	100

Source: Research survey 2011.

For the purpose of this research, the respondents were put into three broad categories. Category one consist of respondents involved in initiatives with direct financial benefits. These are mostly

casual by-day jobs (with wages equivalent to casual by-day rates) offered mainly for activities such as site preparation, peg cutting, pegging, seedling production, and planting. Category two consists of those that are into voluntary activities with no direct financial benefits. Category three indicates respondents not involved in any Collaborative Forest Management activities and as such had no benefits from them. Table 4.5 presents the details of the categories below.

Table 4.5 CFRM initiatives as a source of income

CFRM Initiatives		frequency	Percentage
Category 1	Community nursery establishment	12	10.4
	Boundary Cleaning Contracts	6	5.2
	Green fire breaks	7	6.1
	Plantation establishment	24	20.9
Sub-total		49	42.6
Category 2	Forest Forums	12	10.4
	Community Forest Committees	21	18.3
	Fire Volunteer Squads	23	20.0
Sub-total		56	48.7
Category 3	No initiatives	10	8.7
Grand Total		115	100

Source: Author's construct 2011

With respect to the category one initiatives, the forty nine (49) respondents interviewed gave information on how much income they gained from participating in CFRM which was presented as a percentage of their total income. Table 4.6 gives the detail of the percentage of household income derived from Collaborative Forest Management activities.

Table 4.6 Percentage of household income derived from Collaborative Forest Management activities.

Proportion of household income from CFRM as percentage of total income. (%)	Number of respondents	Percentage of respondents
0-30	14	43
31-50	21	29
51-80	7	14
Over 80	7	14
Total	49	100

Source: Research Survey, 2011

The research revealed that farmers who earned substantial income from the initiatives were those involved in plantations and nursery establishment. These farmers who constituted 34percent of the respondents although could not provide exact income earned, they explained that amount earned from the sale of these products (seedlings and foodstuffs) were sometimes more than their annual income from their personal farms and so they contributed greatly to their livelihoods.

The estimated income earned by households from these initiatives, with an average of GHC 406.5 is presented on Table 4.7 as shown below.

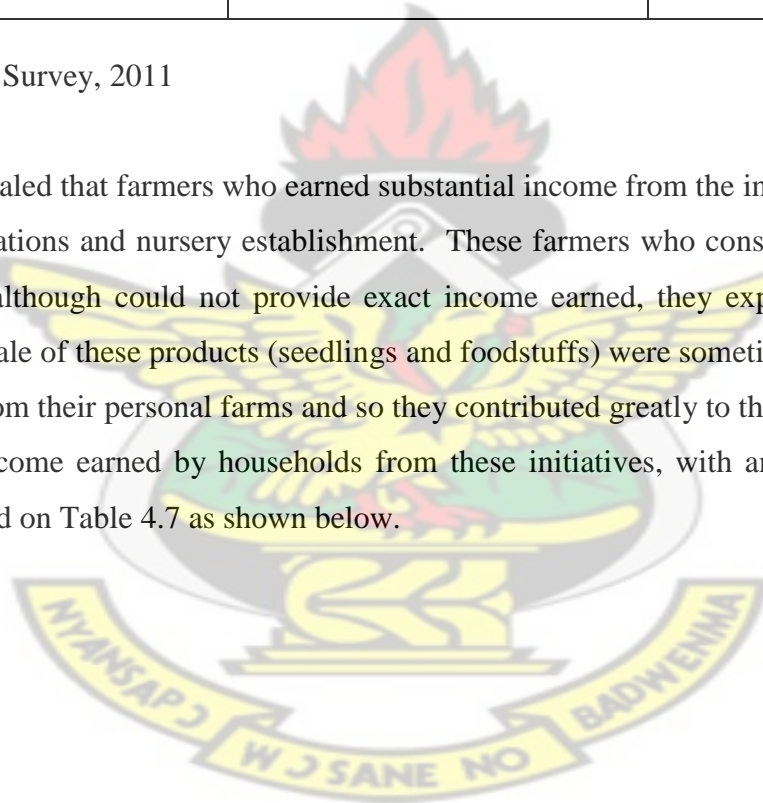




Table 4.7 Income earned from CFRM activities per annum

Income range (GH¢)	Number of respondents (f)	Percentage (%)	Income Midpoint(x)	fx
0-200	14	29	100	1400
201-400	9	18	300.5	2704.5
401- 600	12	24	500.5	6006
601-800	14	29	700.5	9807
Total	$\Sigma f=49$	100		$\Sigma fx=19917.5$
Average income earned by households= $19917.5/49 = \text{GH¢ } 406.5$				

Source: Research survey 2011.

When questioned about their standard of living, the 49 households involved in the CBNRM activities with direct financial benefits acknowledged to have had some improvement while the others claimed to have noticed no improvement yet. Table 4.8 presents the reasons for their improved standard of living.

#### 4.8 Reasons for improved standard of living of households

Reasons	Number of respondents	Percentage
Access to good foodstuffs from farms and so had better health conditions.	24	49
Increased income and could therefore afford to have their needs including better housing and healthcare.	25	51
Total	49	100

Source: Research Survey, 2011.

According to forestry officials from the districts, each of the farmers involved in the green fire breaks and boundary cleaning contracts was to maintain a hectare of forest land and received daily wages equivalent to minimum wage for labour in the country which changes annually. Investigations revealed that farmers spent fourteen man-days to undertake this assignment and does so by computation, their income equals fourteen times the minimum wage. Since the contract is done twice in a year, the total income for farmers within the year is double the amount earned per hectare.

For instance in 2010, a daily wage of GH¢ 3.11 amounted to GH¢ 43.5 per contract thereby fetching the 4,699 farmers involved in plantation a total of GH¢ 87.0 per farmer for the entire year. Since the farmers are the heads of their households, it can be translated that it is the income for the entire household. Farmers lamented that the wages for these initiatives are woefully inadequate for their up-keep and make them less attractive to the youth. Table 4.10 illustrates the payment made to households involved in CBNRM initiatives.

Table 4.9 Payment rates for households involved in collaborative forest management initiatives.

Year	Daily minimum wage (GH¢)	Rate per hectare (GH¢)	Total income earned per year (GH¢)
2003	0.92	12.88	25.76
2004	1.12	15.68	31.36
2005	1.35	18.9	37.8
2006	1.60	22.4	44.8
2007	1.90	26.6	53.2
2008	2.25	31.5	63
2009	2.65	37.1	74.2
2010	3.11	43.54	87.08

Source: Resource Management Support Centre, 2012.

Interviews regarding forest use patterns revealed that 90percent of the respondents were dependent on forest for their household needs which included medicines, pestles, sponges, bush meat and fuel wood . This conforms to Fobi (2005:5) who explained that the vast majority of Ghanaians particularly those in the rural areas depend on the forest as their source of livelihood. These include the use of fuel wood and charcoal as their main source of energy for cooking, collection of food, medicinal plants and construction materials for housing. (for example, medicines, fuel wood, fodder and pastures for livestock).

#### 4.4.4 Contribution to food security

Reports from the farmers indicated that, Collaborative Forest Management has over the years contributed to food security in the region. 23% of the respondents who were involved in plantation development explained that since the introduction of the initiatives (mostly community forest management project and Modified Taungya system), the production of food crops like cassava and plantain could be undertaken throughout the year. This implied that in the lean season when their farms could not yield, their Taungya plots (as they call them) could provide even more than their main farms yielded. This thus provided income for farmers, market queens, and the vehicle drivers and owners who carted the foodstuffs. This additional income enable them to acquire better housing facilities, have access to health services, ensure enrolment of children into schools and provide better feeding for their wards which is translated into better health status.

They emphasized that what they appreciated about the system was the fact that “we could eat good plantain throughout the year”.

Although secondary data on this subject was sketchy, the Forestry Commission Annual Report for 2005 stated that the on-going national plantation development program under the MTS made very substantial contributions to food production in the country. It further explained that statistics on food production for year 2005 indicated a bumper harvest, particularly of plantain and maize. An estimated 19,803 metric tonnes of maize and 741,216 metric tonnes of plantain was produced during the year from the 10,314.50 Ha of land prepared during the year which was

approximately 634% of expected output. This increased food production is translated into increased income thereby making then lives of the farmers and their dependents better-of.

#### 4.4.4 Challenges of Collaborative Forest Management in the region

The research revealed that inspite of the numerous benefits accruing from the initiatives, farmers were not satisfied with the initiatives and the reasons provided included the following:

- Poor remuneration packages: the farmers explained that farming related activities are tedious and so the wages offered at by-day rate which was quoted at GH¢ 3.00 for 2011 is woefully inadequate and makes the initiatives unattractive to the youth.
- Farmers in the plantation development initiatives mentioned benefit sharing as a major backset. The reason being that, farmers have a share in the proceeds from the harvested trees they had nurtured but about ten years into the planting, no benefit sharing agreement had been signed. This uncertainty is causing some farmers to destroy planted trees and some even using it for charcoal production.
- Another challenge enumerated by the farmers was lack of continuity. They mentioned that, plantation development initiatives (CFMP and MTS) were very beneficial to them but these have been abrogated and replaced with the New National Plantation development programme with no explanation to farmers.
- The final challenge given by farmers was lack of legal backing and security for the initiatives. They explained that the initiatives without financial benefits (Community forest committees and fire volunteer squads) were risky and dangerous ventures as they sometimes clash with armed illegal forest operators.

#### 4.4.5 Sustainability of Collaborative Forest Resource Management in the region

After enumerating the challenges faced by collaborative forest resource management in the region, respondents were asked if the concept was sustainable. Three different responses were given and these were tabulated as shown in table 4.11.

Table 4.10 Views of respondents on sustainability of CFRM in Ashanti Region

Response	Number of respondents	Percentage (%)
Yes	9	7.8
No	95	82.6
Not certain	11	9.6
Total	115	100

Source: Research survey, 2011.

Respondents then made suggestions that could enhance the sustainability of CBNRM so that the full benefits could be achieved. These suggestions are presented on table 4.12 below.

Table 4.11 Suggestion for making CBNRM more functional and effective

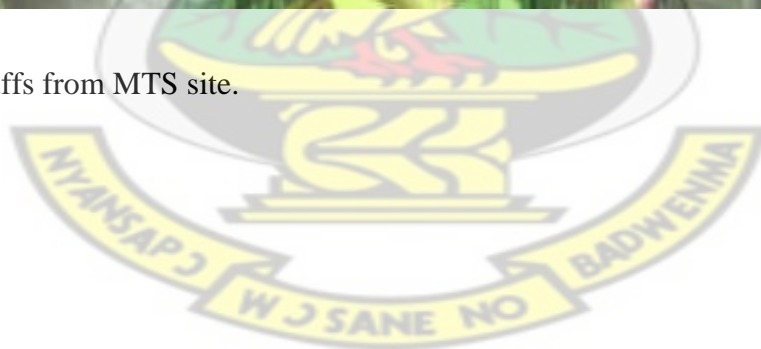
Suggestion	Respondents	Percentage (%)
Upward revision of the daily wage paid to participants.	46	40
Documented benefit sharing agreement for the plantations developed.	24	21
Continuity of initiatives irrespective of governments.	24	21
Legal backing for the initiatives.	21	18
Total	115	100

Source: Research Survey, 2011





Plate 4.1 Food stuffs from MTS site.



## CHAPTER FIVE

### SUMMARY OF FINDINGS, RECOMMENDATION AND CONCLUSIONS

#### 5.0 Introduction

After discussing the results from the field in the previous chapter, this chapter extracts the major findings relating to the objectives of the study, makes recommendations and provides a conclusion for the entire study.

#### 5.1 Summary of Findings

Objective 1: Assess the extent of Collaborative Forest Resource Management in Ghana.

The research revealed that forest plays an important role in the livelihood of households and contributes 6% of the GDP of the economy as a whole. This makes the alarming rate of deforestation in the country a major concern for Government, and civil society groups involved in poverty alleviation programmes and projects.

Denial of forest owning communities ownership, governance and management control of their forest resources is a major contributory factor to rapid forest loss and degradation and so the solution to this menace is promotion of collaborative Forest Resource Management among stakeholders.

The 1994 forest and wildlife Policy buttresses the need for this collaboration and so various initiatives are being implemented to this effect.

The extent of Collaborative Forest Management in the region is not satisfactory as most of these initiatives are donor driven and implemented as projects over limited localities. This makes it unsustainable and also has less impact on the ground.

Objective 2: Examine the implication of Collaborative forest management on Livelihoods and the standard of living of households in forest fringe communities.

Collaborative Forest Management initiatives with financial benefits to a larger extent have a positive impact on the standard of living of households in the Region. This is because availability of fertile lands (modified Taungya) enhances increased crop outputs which are translated into their available income. Some income is also generated from the sale of seedlings through the community nursery establishment. Again wages obtained from some initiatives like boundary cleaning contracts also supplements what they gain from their regular activities (mostly farming). These financial benefits enable household to acquire better housing facilities, have access to health services, ensure enrolment of children into schools and provide better feeding for their wards which is translated into better health status.

Objective 3: Assess challenges of Collaborative forest management

The study revealed a number of challenges in the implementation of Collaborative Forest Management agenda in the region. Amongst them are low remuneration for the people employed under the initiatives which makes it unattractive to the youth.

Again, sustainability is a major challenge due to the fact that most of the initiatives are donor driven and implemented as project and so abandoned after the project folds up.

Furthermore, lack of continuity of initiatives is a major challenge. This reason is that different governments have different agenda and methods for the management of the forest resource and may not necessarily continue what has been started by previous ones which sometimes throw efforts of investors (households) down the drain.

Finally, lack of legal backing for some of the initiatives like the Community forest committees and fire squads hinders the smooth operation of their activities.

## 5.2 Recommendations

From the findings of the study conducted, the following recommendations are been made:

- Measures should be put in place to provide better remuneration packages to make Collaborative Forest Management attractive to people especially the youth.
- Projects on Forest Management should be home-grown and led by Government as donor driven nature is unsustainable and lacks continuity. There should therefore be a holistic national agenda for the development of all sectors of the economy including forestry which will be implemented by all governments that come to power.
- There is the need to intensify the initiatives which come with direct financial benefits like green fire breaks establishment as this is an incentive for the restoration of our degraded forests.
- Government should provide the legal backing needed as well as protection for the initiatives to be effective. This is because people involved in some of the initiatives like Community Forest Committee and fire squads are exposed to serious threats and risk as they normally come into contact with armed personnel involved in illegal forest operations.

## 5.3 Conclusion

Forests have provided and will continue to provide livelihood support to a significant proportion of the Ghanaian population, particularly forest dependent communities. International initiatives and environmental campaigns within the country have helped in halting degradation and loss of forest area to some extent and among these initiatives is Collaborative Forest Resource Management.

From the examples of Collaborative Forest Management cited in the previous section, it is clear that important progress in local people's empowerment has been made in many countries. Where previously communities had no access to public forest resources, no rights to take



management decisions, no opportunity to obtain technical support from the forest agency, there has been a significant change in the framework of forest management.

It has also been realized that it is only with the active involvement of local communities in planning, implementation and monitoring of Forest Management strategies that sustainability of forest resources can be ensured. This implies that Community- Based Forest Management can succeed only when the forest policies and their implementation have really involved people with explicit rights and responsibilities.

Although various Collaborative Forest Management initiatives have been introduced and been implemented in the country, most of them are not attractive due to major challenges like lack of continuity and low remuneration packages. Despite the challenges outlined, the livelihoods of quite a number of people are been positively affected by these initiatives. This implies that if properly implemented, Collaborative Forest Management has the potential of improving the standard of living of household especially those in farming communities which will affect the nation as a whole.

In conclusion, Collaborative Resource Management is important as it ensures that all stakeholders including fringe communities are actively involved in the management of the forest and provide opportunities for improved livelihoods of farmers and their dependents. It should therefore be encouraged at all levels not only to ensure sustainable management of the nation's forest resources but also contribute to the achievement of the first millennium development goal of eradicating extreme poverty and hunger.



## REFERENCES

- Acheampong, E. (2005). "Forest Resources and Sustainable Rural livelihoods".  
Paper presented at Tropenbos International Workshop on Alternative Livelihoods and  
Natural Resource Management. College of Agriculture and Natural Resources, KNUST,  
Kumasi, Ghana. (Pg 8- 9)
- Agyeman, V. A, Asare, A.B., Danso, E. , Kasanga, K.A., Marfo, K.A and Yeboah, O.M.(2010).  
"Equitable forest reserve plantation revenue sharing in Ghana". Report for FAO.  
Forestry Research Institute of Ghana, Kumasi (Pg 3-26)
- Ankudey, N. (2002). "Investment opportunities in forest and wildlife resources in the  
ECOWAS sub-region – Ghana's contribution. Paper presented at the 2002 Ghana  
Institute of Professional Foresters' General meeting Held at Akyawkrom. May 2002.
- Asare, A.B. (2000). "Operational Guidelines on Community Forest Committees", ITTO/ FSD  
Collaborative Off-Reserve Forest Management Project. Resource Management Support  
Centre, Kumasi. (Pg 6-8)
- Asare , A.B. (2008). "National Workshop to develop Framework for CREMA establishment and  
management". Resource management Support Centre. Forestry Commission, Kumasi. Pg  
2
- Asare, A.B. (1970). "Collaboration with farmers, landowners and District Assemblies for off-  
reserve forest management". In piloting collaborative forest management systems for off-  
reserve areas in southern Ghana. Foli, E.G Adade and Agyeman V.K(eds) Pg 20-23
- Boateng, K. (1999). "The Forest and Renewable Resource and System". A paper presented at the  
Workshop for Media Personel on forestry and Wildlife reporting at Akyawkrom. Pg 93

- Contreras-Hermosilla, A. (2000). "The Underlying Causes of Forest Decline". Centre for International Forestry Research, Bogor. *CIFOR Occasional Paper No. 30, June 2000*, [www.cifor.cgiar.org](http://www.cifor.cgiar.org) ( accessed: 16/05/02).
- Dankyi, K.D (2005). "Sustainable non-timber forest resource management and household poverty reduction". A case of Asenayo River Forest Reserve in the Nkawie District of Ashanti Region. Un-published Dissertation presented to Department of Planning, KNUST, Kumasi. Pg 16
- Ebregt, A. (2007). "Collaborative forest Management in Nepal, Prospects and Challenges". *Journal of Forest and Livelihood* 6(2) September, 2007. Ministry of Forests and Soil Conservation. Kathmandu, Nepal. Pg 1-22
- Environmental Protection Agency, (2005). "Environmental and social assessment of the Worobong South Forest Reserve, Fanteakwa District, Eastern Region". Ministry of Lands and Forestry. P.O.Box M 326 Accra, Ghana. pg 8
- Falconer, J. and Arnold, J. E. M. (1991). "Household Food Security and Forestry: An Analysis of Socio-economic Issues". Community Forestry Note 1, Forests, Trees and People Programme, FAO, Rome. Pg 147.
- FAO (2005). "Participatory Forest Management Module 2. Organizational Change for Participatory forest management, A Field Manual". Forestry Policy and Institutions Branch, Forestry Department. FAO. Pg 2.
- FAO (1997). "The challenges of sustainable Forest Management-What future has the World's Forests?" The keynote opening speech at the first technical session of the Eleventh World Forestry Congress, 14 October 1997, Antalya, Turkey. Pg 103-117

FAO Forestry Profile (2005:9), “Domestication and Commercialization of non-timber forest products in agroforestry systems”. *Non-Wood Food Products 9*. FAO, Rome

Fairhead J, and Leach M (1998). “Reframing Deforestation: Global Analysis and Local Realities. Cases from West Africa”. London: Routledge. Pg 68

Fobih, D. (2005). “Keynote Address delivered by Minister of Lands and Forestry at Workshop on Alternative livelihoods and Sustainable Forest Management. Akyawkrom. [www.Ghanaweb.com](http://www.Ghanaweb.com) (accessed, 8/10/10)

Forestry Commission (2005). “Annual Plantation Reports”. Accra, Ghana. Pg 8

Forestry Commission (1994). “Forest and Wildlife Policy”. Accra, Ghana.

Forestry Commission, Unpublished: “Annual Report 2010”. Pg12

Forestry Commission (2006). “National Forest Plantation Development Program, the modified Taungya system and private developers 2005 Annual Report”. Accra, Ghana. Pg 4

Forest Management Support Centre (1999). “Guideline on Community Boundary Maintenance Contracts in Forest Reserves”. Forest Services Division, Forestry Commission. Kumasi Pg 9

Ghana Statistical Service, ( 2000.) “Poverty trends in Ghana in the 1990s” .Accra pg 78

Ghana Statistical Service, ( 2010). “ Population and Housing census provisional results.” <http://www.ghana.gov.gh>. (accessed 05/11/2011)

Government of Ghana, (2002-2006). “Ghana Poverty Reduction Strategy”. NDPC, Accra. Pg 76

Harthshon, G.S (1995). “Annual Review of Ecology and Systematic”. Vol 26, World Wildlife Fund, 1250 4<sup>th</sup> Street NW, Washington DC. Pg 155-175

Inkoom, D.K.B (1999). “Management of non- reserve forest in Ghana a case study of Mpohor Wasa East District”. SPRING Research Series No 24, University of Dortmund

International Fund for Agricultural Development ( 2001) “Enabling Poor Rural People to overcome Poverty in Ghana” Quintily Publishers, Italy. Pg: 11

International Union for the Conservation of Nature (IUCN), (2006). “Communities and Forest Management with Recommendations to the Intergovernmental Panel on Forests”. Washington D.C, USA Pg 12

International Union for Conservation of Nature (2010). “Sustainable Forest Management, Biodiversity and livelihoods”. ([http:// www.cbd.int /development/doc](http://www.cbd.int/development/doc), accessed 05/02/11)

Kwarkye, Y. (2010). “Basics of Climate Change”. A Paper presented at a Forestry Commission Workshop on climate change at Akyawkrom, Kumasi. 5<sup>th</sup>-8<sup>th</sup> December

Kajembe, GC, and Kessy, J.F. (2000). “Joint forest management in Urumwa Forest reserve, Tabora, Tanzania: a process in making”. Cited in *Forests, Chiefs and Peasants in Africa*. Vol. 34 .( <http://dlc.dlib.indiana.edu/dlc>: accessed 8/2010)

Moses, Eben A, (2003). “Forest management, considering poverty alleviation in West Africa, Particularly Liberia”. Center for Environmental Education and Protection of Liberia, CEEP (Liberia), P.O. Box 20-4364, Monrovia, Liberia (accessed 8:2010).

Mongabay, (2010). “Deforestation in Ghana” (<http://rainforests.mongabay.com/deforestation/2000/Ghana.ht> , accessed 10/12/2010)

Nachmias, F.C and Nachmias, D(1992). “Research methods in the social sciences”. 4<sup>th</sup> Edition.J. W. Arrow smith Ltd. Bristol, U.K

- Ninnoni R., Obiaw E., Asare A.B.(2003). “Manual of Procedures, Wildfire Management Section-G”. Forest Resource Management of Ghana and Resource Management Support Centre. Kumasi, Ghana. Pg 10-11
- Obiaw E. (2010). “Institutional Framework for CFCs towards forest management”. Proceedings from a Refresher Course for CFCs and CBAGs In Eastern , Ashanti and Brong Ahafo Region. Kumasi, 11<sup>th</sup>-13<sup>th</sup> May. Pg 3
- Obiaw E. (2010). “Institutional Framework for CFCs towards forest management”. A paper presented at a Refresher Course for CFCs and CBAGs In Eastern , Ashanti and Brong Ahafo Region. Kumasi, 11<sup>th</sup>-13<sup>th</sup> May
- Owusu, J.G.K, Abeney, E.A, Frimpong, E.A (1999). “Workshop for media personnel on forestry and wildlife reporting”. Akyawkrom, 24<sup>th</sup>-25<sup>th</sup> August. Pg 2-31
- Poffenberger, M. (1996). “Communities and forest management”. A report of the IUCN Working group on community involvement in Forest management. CLB Printing Co. Washington D.C , U.S.A. Pg 18
- Reyes, H.E ( 2001). “Participatory Forest Management for District development. A case Study of Assin Fosu District”. (Unpublished MSc. Dissertation), Department of Planning, KNUST, Kumasi. Pg 5-15
- Rhein, M (2002). “Supporting pro poor change in the forest and land sector through civil society strengthening”. FSDP II, Concept note on Civil Society Strengthening. Forestry Commission Ghana, Pg 8
- Sampson, S.A (2004). “Ecotourism Resource Development: A potential for poverty reduction in the East Akim District of Ghana”. An un-published thesis presented to the Department of Planning, KNUST, Kumasi. Pg 21



Seidu, M. (2011). "Forests, Promoting sustainable forestry through forest certification. (<http://www.wwf.org> , accessed 02/6/2012)

Shahbaz, B. ( 2007). "Impact of participatory forest management on financial assets of rural communities in Northwest Pakistan". Ecological Economics, University Press, India. Pg 63

Suleri, A.Q.( 2002). "Regional study on forest policy and institutional reform" (<http://www.stimson.org> , accessed :8/3/2011)

Todaro M, and Smith S. (2009). "Economic Development". Tenth Edition. Pearson Education, Edinburgh, England. Pg 238.

The Collaborative Forest Management Unit, (1999). "Planning for Collaborative Forest Management in forest Reserves Guidelines". Forestry Services Division of the Forestry Commission, Kumasi. Pg 7

World Bank, (2009). "Implementation. Completion and Results. Report of the Ghana Rural Financial Services Project" (RFSP).Washington, DC. ([www.wikipedia.com](http://www.wikipedia.com) , accessed: 3/8/2010)

## APPENDICES

### APPENDIX A

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF PLANNING.

#### QUESTIONNAIRE - FORESTRY COMMISSION STAFF

Name.....Age..... Position.....

1. How long has the Region been involved in Collaborative Forest Resource Management (CFRM) activities?
  - a. Below 5years   b.5-10years   c. Above 10years
2. What aspects of CFRM are being practiced in this Region?
  - a. Boundary Clearing contracts with communities
  - b. Social Responsibility Agreement
  - c. Community Forest Committee
  - d. Forest forums
  - e. Modified Taungya system
  - f. Green fire break planting
  - g. Community nursery establishment
  - h. Eco-tourism development
  - i. Dedicated forests.
3. What is the relevance of this to forest management?
4. How many people are involved in this/ these projects?
  - ( a) Less than 100   (b).200-300   ( c.)400-500
5. Who selects the people for these projects?
  - (a)Forestry commission (b.) community (c.) individual options (d) Political
6. What is the level of involvement of the people in the choice of project and selection process?
  - (a )Not involved at all   (b)Informed about project   (c)Involved in choice of project and who to be employed.

7. What do the people gain for participating in the management of the forest?  
(a)Income (wages/ salaries) (b)Farm lands (c)Others (specify)
8. How much money is paid to people per annum for their involvement on CFRM activities  
(a)Less GHC 100.00 (b) Between GHC 100-300 (c) more than GHC300
9. What has happened to the standard of living of people involved in CFRM activities  
(a) improvement (b) fallen (c)no significant change (d) others specify
10. Give reasons for the answer given in question 10
11. Suggest ways to improve on situation in 12
12. What are the benefits to the community as a whole?  
(a)Income (b) employment (b) Infrastructure (c) Others (specify)
13. How have the participation of the people affected the resource base?  
(a)Improvement in condition of forest (b) Further degradation (c) No effect
14. Are there plans for scaling up this project  
(a)Yes (give reasons) (b) No (Give reasons)
15. Who provides the financial resources for the project  
(a)Government (b) Private Entities (c) Development Partners (d) others specify
16. What is the duration of the projects  
(a) Less than 1year (b)2 -5years (c) more than 5years
17. What happens to the people involved when the project phases out?  
(a)Given different options (b)Unemployed (c)Others(specify)
18. What are the challenges in the implementation of these initiatives  
(a)Financial (b) lack of Co-operation of forestry Officials (c)Political interference  
(d)Others(specify)
19. Make some recommendations for these challenges

## APPENDIX B

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF PLANNING

QUESTIONNAIRE- HOUSEHOLDS

Community.....

Name..... Occupation.....

Age..... Sex (M) (F)

1. What are some of the direct benefit you derive from the forest resource?  
(a) Farmland (b) fuelwood (c) food and game (d) others (specify)
2. What are some of the socio-cultural importance of the forest to your community  
(a) Source of herbal medicines (b) Burial grounds (c) Spiritual centres
3. Have you observed any changes with respect to the above stated functions ( eg.Extinction of medicinal plants, encroachment of sacred grooves, cutting down of symbolic trees and animals)  
(a) Yes (b) No
4. What are the problems encountered when you want to have these products?  
(a) Access to the resource (b) opposition from FC (c) others (specify)
5. Looking at the current state of the forest resource, is there a future for the forest if the dependency continuous?  
(a) Yes (b) No
6. Have you been involved in any collaborative forest management activities  
(a) Yes (b) No
7. If yes which aspect of it are you involved in?
  - a. Boundary Clearing contracts with communities
  - b. Social Responsibility Agreement
  - c. Community Forest Committees
  - d. Forest forums

- e. Modified Taungya system
- f. Green fire break planting
- g. Eco-tourism development
- h. Dedicated forests.
- i. Community Nursery establishment
- j. Fire volunteer squad(FVS)

8. Why did you choose that option?

(a)Only option available (b) Higher wages/benefits (c) others (specify)

9. How does the stated options address your resource needs.

10. How did you get on board?

(a)Selected by Forestry Commission (b) political affiliation (c) Community selection

11. How long have you been doing this?

(a)Less than 5years (b) 5-10years (c) Over 10years

12. Have you been given any training on your expected roles and functions (a) Yes (b) No

13. What benefits do you gain from it

(a)Wages (b) farmlands (c) Other Incentives (specify)

14. What is your household size.

(a) 1-3 (b) 4-6 (c)7-9 (d)more than 10

15. What are your regular sources of income apart from CFRM activities?

(a) Agriculture (b) non-farm employment (c) others specify.

16. How much additional income do you gain from CFRM activities annually

(a)Less than GHC 100.0 (b)GHC 100- 500 (c)More than GHC 500

17. What percentage/proportion of your household income is from participating in CFRM activities?

a) Less than 30% (b) 30-50% (c) 60-80% (d) over 80%

18. What other opportunities has it offered you apart from financial advantages?



19. What has happened to the standard of living of people in this community as a result of this intervention?

(a)Improved (b) Fallen (c) no improvement

20. Give reasons for this answer.

(a) people can adequately feed their households (b) people can build houses (c)Can access health care (d) others.

21. What have you contributed to forest resource base through your involvement in the project?

(a)Increased forest cover (b) reduction in size of degraded area (c) reduction in incidence of wildfires

22. Is the project sustainable

(a)Yes (b) No

23. Give reasons for the answer. (a) Project oriented and time bound (b) Donor initiative that are imposed on us (c) non involvement of beneficiaries in the design of the programmes.

24. What are some of the constraints in the activity(ies) undertaken

( a) Financial constraints (b)Political interference (c)Sustainability

25. How do you resolve your grievances?

(a)Through community leaders (b) officials of FC (c) no provision made

26. How is the commitment level of the Sector Ministry to this project

(a)Unconcerned (b) low level of Commitment (c) Very committed

27. What is your recommendation for the Commission for future initiatives?