UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

THE ROLE OF NON TIMBER FOREST PRODUCTS TO RURAL LIVELIHOODS IN THE ASUTIFI NORTH DISTRICT OF THE BRONG AHAFO REGION, GHANA

PETER CLAVER YABEPONE

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BY:

PETER CLAVER YABEPONE (BA. Integrated Development Studies)

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DISSERTATION SUBMITTED TO THE DEPARTMENT OF AFRICAN AND GENERAL STUDIES, FACULTY OF INTEGRATED DEVELOPMENT STUDIES, UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE, IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY DEGREE

IN DEVELOPMENT STUDIES

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DEDICATION

I dedicate this work to my lovely family; most especially my mother Elizabeth Deri, my wife Caroline and Sister Juliet for the inspiration and moral support through the study.

DECLARATION

I Peter Claver Yabepone**,** author of this study do here by declare that the work presented in this entitled: 'THE ROLE OF NON TIMBER FOREST PRODUCTS TO RURAL LIVELIHOODS IN THE ASUTIFI NORTH DISTRICT OF THE BRONG AHAFO REGION, GHANA', Was done entirely by me in the MPhil in Development Studies, University for Development Studies, Tamale. This work has never been presented in whole or in part for any other degree of the university or elsewhere. Due recognition has been given to cited works.

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Peter Claver Yabepone DATE

(STUDENT)

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Naa Dr. Ernest Kunfaa DATE

(SUPERVISOR)

ABSTRACT

The study sought to assess 'The role of Non- Timber Forest Products to rural livelihoods in the Asutifi North district of the Brong Ahafo Region, Ghana. The two broad types of data, the secondary and primary data were used in the study. Questionnaires, Observation and In-depth Interview were used to collect the data. It was found out that; gathering, processing and marketing of NTFPs are major livelihood activities engaged by most residents in the District, contributing to household security. Further findings revealed that the contribution of NTFPs to annual income is low mostly within the bracket of 1-30 GHC, implying that income generated is used to fill a cash fall and not investment into improving household income security. It was also established that indigenous beliefs and practices were modes of NTFPs management systems in the past 20 years ago. Other findings suggest that traditional authorities are least involved in the initiation and acceptance stages of policies and programme in relation to modern management system. Also, NTFPs gathering, processing and marketing depends not only on the availability of resources but also on the ease of access to markets, trade networks and skills acquired. It is also evident that the development of NTFPs and the implementation of sound management are severely restricted due to lack of regular documentation and record keeping of all NTFPs in the district. It was recommended that; there should be the integration of traditional management system into modern management in the management of NTFPs; Capacity building of residents to enhance the extraction of NTFPs. Other recommendations include; Effective policy formulation and management system and the need to enhance participation in NTFPs businesses.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AFP	Alternative Forest Product
CBNRM	Community based natural resource management
CBUD	Centre for Biodiversity Utilization and Development
DFID	Department for International Development
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization of the United Nations
FBPA	Forest Based Poverty Alleviation
FC	Forestry Commission (Ghana)
FD	Forestry Department (Ghana)
FORIG	Forestry Research Institute of Ghana
FR	Forest Reserve
FSD	Forest Services Division (Ghana)
FMU's	Forest Management Units
FRMP	Forest Resource Management Project
GOs	Government Organizations
GSBA	Globally Significant Biodiversity Area
HFZ	High Forest Zone
ITTO	International Tropical Timber Organization
LUS	Lesser Used Species
MDGs	Millennium Development Goals
MoFA	Ministry of Food and Agriculture
MFP	Minor Forest Products / Miscellaneous Forest Products

MTDP	Medium Term Development Plan
NGOs	Non-Governmental Organizations
NTFPs	Non-timber Forest Products
NTFR	Non-timber Forest Resource
NTRV	Non-timber Forest Resources and Values
NWFB	Non-Wood Forest Benefits
NWFPs	Non-Wood Forest Products
NWGB	Non-Wood Goods and Benefits
NWGS	Non-Wood Goods and Services
RRA	Rapid Rural Appraisal
PRA	Participatory Rural Appraisal
RA	Rural Appraisal
RMSC	Resource Management Support Centre
SFP	Special Forest Products
SPSS	Statistical Package for Service Solution
TROF	Tree Resources Outside Forest
UN	United Nation
UNDP	United Nation Development Programme
WHO	World Health Organisation

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

In Ghana, the livelihoods of many rural and urban folk depend on the collection and trade of NTFPs. According to Falconer (1992), they are particularly important to communities that live close to forests in Ghana and shows that these products give a wide array of support to the livelihoods of these communities – filling income gaps during times of economic hardship and not only as sources of food and medicine, but also for handicrafts, as construction materials and materials for making farm implements. The study began the investigation in the introductory chapter under the following headings; Background to the study, research problem, research questions, research objectives, hypothesis, relevant of the research, delimitation of the study, limitation and organization of the research.

1.2 BACKGROUND TO THE STUDY

Non-timber forest products (NTFPs) constitute an important source of livelihood for millions of people across the world (CIFOR, 2004).Three-quarters of the world's poor live in rural areas (DFID, 1999). Much of these areas coincide geographically with tropical rain forests and dry Savannah

vegetations where the poor depend to a large extent on these resources for their livelihoods. Their lives are therefore said to be intrinsically integrated with these resources (Thomas, J.,G. King and S. Kayetta 2005). In India alone it is estimated that over 50 million people are dependent on tropical forests provide ample goods and services; these mainly include timber and Non-Timber Forest Products (NTFPs).

NTFPs are an indispensable part of the livelihood strategy of communities living in and near forests. Forest-based activities in developing countries, which are mostly in NTFPs area, provide an equivalent of 17 million full-time jobs in the formal sector and another 30 million in the informal sector, as well as 13-35% of all rural non-farm employment (Duong, 2008).

In less developed 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. Poverty in the developing world is more a rural than an urban phenomenon, and in the poorest developing countries, 65-80% of the population still live in rural areas (Adhikari, 2004). 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, fruit, fuel wood, fodder and fibers (Chambers, 2002). Forests contribute to the livelihood and household food security of forest dwellers through the provision, both of direct food and of income, which may be used to purchase food (Falconer, 1992). In addition, forests

support agricultural production through their effect on soil productivity and the supply of fodder for livestock (Angelsen and Wunder, 2003). Forests and forest products are therefore key resources for poor people.

Traditionally, NTFPs play an important role worldwide. In many areas, animal and plant resources derived from forests remain central to sustainable livelihoods. The FAO estimated that (80%) of the population of the "developing" world use NTFPs to meet some of their health and nutritional needs (FAO, 1995).The importance of NTFPs in supporting livelihood of forest dependent communities has been widely promoted due to the recognition that NTFPs can contribute to improve the livelihoods of forest dependent communities (FAO, 2006) household food security and nutrition (Shackleton & Sheona, 2004); generate additional employment and income (Angelsen and Wunder, 2003); and offer opportunities for NTFP-based enterprises (Shackleton & Sheona, 2004). Moreover, NTFPs are more accessible to the poor (Aramde, 2006); contribute to foreign exchange earnings (Andel, 2006); and support biodiversity and other conservation objectives (FAO, 1995; Arnold and Ruiz Pérez, 2001). Furthermore, NTFPs can be harvested with relatively little impact on the forest environment (Farm Africa, 2008).

Forest areas play a very important role for human beings in terms of economy, society and environment. Rural people, especially people living in or near forests, depend on forest products as sources of food, fodder, medicines, and construction materials as a source of income. According to CIFOR' research,

"More than 240 million people around the world live in forested regions" (CIFOR, 2004).

In relation to poverty alleviation both subsistence and commercial NTFP utilization is important because the poorest segments of the local community normally generate a larger part of their overall needs from NTFPs than wealthier population groups (Arnold and Perez 2001).The poverty profile of Ghana is largely rural and agricultural with 54% of those living in poverty being subsistence farmers. According to Adepoju (2007) poverty is directly associated with access to resources (or lack thereof), which in turn affects both baseline vulnerability and households' ability to cope. Gender is also another important dimension of poverty in southern Ghana especially in rural areas. In many rural areas gender is an aspect of social differentiation, with women (and female-headed households) generally being poorer. Women bear a disproportionate share of being poor, they are obliged to spend a greater deal of their time not only working in families' enterprise, but also nurturing and rearing children and performing other house hold tasks, such as cooking and fetching water and fire wood (Hamida, 2004).

1.3 RESEARCH PROBLEM

The importance of NTFPs in terms of their commercialization and their contribution to sustainability of livelihoods and biodiversity has increasingly occupied centre stage in academic research. Their commercialization is said to contribute in diverse ways to the incomes of different categories of rural

communities. It either supplements the incomes of many rural people who use this means to fill income gaps, especially during the lean season of agriculture or bust periods of other non-farm business ventures, or it is their main income source (Barraclough and Ghimire, 2005). In some rural areas, those who are involved in NTFP commercialization as their main source of income are the poor. In others, it is an important economic venture. Some urban dwellers make their livelihoods from the sale of forest related products like chewing sticks, raffia baskets and mats, bamboo furniture, etc. (Wunder, 2005).

NTFP resources play a major and very often critical role in the livelihoods of a high proportion of the world's population (Scoones, 1998). Bonye (2007) ascertained that non-timber forest resources (NTFRs) are in daily use throughout the tropics, commonly providing resources crucial to people where no other social security is provided by the State. It is the socially most marginalized people who are the main actors in NTFPs extraction (Ros-Tonen, 2000). In many parts of the world including Ghana these resources are critical, especially for the rural poor and women, and may provide them with the source of personal income (Falconer, 1997). Despite this, the contribution of NTFPs to rural economies in the Brong Ahafo Region/Asutifi of southern Ghana remains largely undervalued and understudied.

Many people in Ghana depend on the forests for their livelihoods. Unfortunately Ghana suffers from rapid deforestation and biodiversity loss. From 1900 to 1990 Ghana lost 80% of its forest cover and satellite images show that this trend has continued in the last two decades (Olukoya, 2008).

Much of the remaining forests are in the form of protected reserves. Because of such degradation it is no surprise then that sustainable forest management comes as a significant challenge for rural communities in Ghana. Such communities depend on the forests for their livelihoods and they make use of many different types of forest products. Unfortunately, there is not much research on the role of forest resources in the livelihoods of rural communities. Furthermore, identifying and bringing to the fore the role of NTFPs in the Asutifi North District of the Bono Ahafo Region of Ghana and an eye for added value will contribute to wealth creation and improved livelihoods of rural communities.

NTFPs play important role in the Ghanaian economy by way of supporting rural livelihoods In a survey covering a wide range of products and users in the forest zone of southern Ghana, Neumann & Eric (2000) found 10% of rural people and 38% of households sell forest products. In a similar study covering households in villages around the large market Centre of Kumasi, Falconer (1995) found that 68% of the households surveyed were involved in supplying NTFPs to the market.

Against this backdrop, it becomes legitimate to question the future of the commercialization of forest products. It becomes necessary to give critical consideration to the reliability of their commercialization and to assess whether they can withstand the emerging shocks of development, trade liberalization and the continuing insertion of the Ghanaian economy into the global economy.

It is also important to ask if this can be worthwhile, at the same time, being concerned about the sustainability of their resource base. This study explores these issues by focusing on Non- Timber Forest Products as a strategy for enhancing rural livelihoods in the Asutifi North District.

1.4 RESEARCH QUESTIONS

1.4.1 Main Question

- What role does NTFPs play and could play in the livelihoods of rural people in Asutifi North District in Brong Ahafo Region of Ghana?

1.4.2 Specific research Questions

- What are the uses, potential uses and livelihoods options of NTFPs and how do they contribute to the livelihood security of rural communities of the Asutifi North District?
- What management system exists for NTFPs in rural communities in the Asutifi North District?
- What are the current policy implications for the role of NTFPs in rural livelihoods in Asutifi North District?
- How does extraction, processing and marketing of NTFPs contribute to the livelihoods in Asutifi North District?
- What are the NTFPs in the Asutifi North District?

- Do residents have fair Knowledge on NTFPs availability in the District?

1.5 RESEARCH OBJECTIVES

1.5.1 Main Objective

- To explore the capacity of NTFPs for improved livelihoods, income and rural economies in Asutifi North District.

1.5.2 Specific Objectives

- To assess the contribution of NTFPs to rural livelihoods in Asutifi District and what its current and potential economic values are for the local and foreign market.
- To find out the management systems in place for NTFPs in rural communities of Asutifi South District.
- To assess the policy implication for the management, development, utilization, processing and marketing of NTFPs to improve livelihoods and rural incomes in Asutifi North District.
- To examine the extraction, processing and marketing of NTFPs contributions to livelihoods source in the Asutifi North District.
- To ascertain the specific NTFPs communities are using as livelihood source

- To examine the available NTFPS in the Asutifi North District that residents do not have knowledge of.

1.5.3 Hypothesis.

- There is a significant relationship between NTFPs to rural livelihoods in the Asutifi North District and has current and potential economic values for the local and foreign markets
- There is a significant management systems put in place for NTFPs in rural communities in the Asutifi North District.
- There are significant policy direction for the management, development, utilization, processing and marketing of NTFPs for improved livelihoods and rural incomes in the Asutifi North District.

1.6 RELEVANCE OF THE RESEARCH

There is limited knowledge on NTFPs and their contribution to rural economies in Asutifi North District. Most studies on this subject are on extraction of timber products in the forest region but very little on the role of NTFPs in the district. The study will therefore enhance the knowledge of stakeholders (rural communities, traders, policy makers and implementers and development practitioners) in the Asutifi North District of Ghana on NTFPs.

Also, the findings from the study would be used as future references in the field of academia for researchers who would be doing researches that are related to the topic under study.

The study will also identify the uses and potential uses, management systems and also how NTFPs can support rural communities and what can be done to improve upon them.

The implications on NTFPs policy will also be explored by the research. This could provide the basis for proposal on the right policy environment, implementation and monitoring system that will contribute to the development of NTFPs for poverty reduction in the Asutifi North District.

1.7 DELIMITATION OF THE STUDY

The scope of the study geographically, is restricted to the Asutifi North District in the Brong Ahafo Region of Ghana, and this could affect the significance of the findings. This is because the case study is on one part of the country Ghana. In context, the study is limited in examining NTFPs contribution to livelihood.

1.8 LIMITATIONS OF THE STUDY

The study covers only the Asutifi North District, thus it will be difficult to generalise the findings to other Districts in the country. As such, while the

findings from this research may be used to guide future researches, it cannot be applied to other settings. The cluster sampling used lack strict reliability and could therefore affect the result of the findings. Despite the above limitations the District under study will benefit from its findings.

1.9 ORGANISATION OF THE RESEARCH

The rest of the research is organized in four main chapters. Chapter two basically deals with literature review, chapter three also addresses the methodology and design of questionnaire whereas chapter four concerned data analysis and chapter five crown the study with summary of key findings, conclusions and recommendations.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 INTRODUCTION

This section delves into concepts that are relevant to the subject matter. Arguments are made on key concepts that provide the framework as perceived differently by different scholars. Major concepts such as; NTFPs debate, Non-Timber Forest Products, categories of NTFPs, species exploited as NTFPs in the high forest zone of Ghana, significance of NTFPs in the Ghanaian economy, role of NTFPs in forest conservation, NTFP management, NTFPs and sustainable rural livelihood, forestry and forest management policy and socio-economic development, local people and NTFPs are reviewed.

2.2 THE NTFP DEBATE

There was a high degree of optimism from both scholars and international organizations centering on the potential of non-timber forest products having the ability to improve livelihoods as well as increase the value of forests. It was assumed that the commercial extraction of NTFPs from natural forests could simultaneously serve the goals of biodiversity conservation and poverty alleviation (Ros-Tonen and Wiersum 2005).

With regard to tropical forests, NTFPs are a "main source of livelihood of forest-dwelling communities, who rely on these products for their food, medicines and as raw materials for the houses, tools and equipment" (Birhanu, 2004). Some practical advantages of NTFP extraction are that many are available as common property resources, they can be used with little processing and often they require low-cost, traditional technologies (Arsema and argatchew, 2008). The idea then is to open up NTFP extraction to markets and trade, whereby increased income and employment opportunities can lead to improved livelihoods and help bring people out of poverty. Campbell and Luckert, (2002), base this expectation on the "well-documented importance of many NTFPs in rural livelihoods, the emergence of new markets for natural products and the development of new marketing mechanisms, such as green marketing and fair trade." In principle, the commercialization of NTFPs seems like an important step in combating poverty alleviation as well as preserving forests.

Peters (1996) notes some negative impacts from commercially harvesting NTFPs: nutrient loss from harvested material, decreasing rates of seedling establishment, reduced frequency of growth of harvested material and potential loss of local animal populations. Presumably, the challenge of over exploitation becomes exacerbated once a particular NTFP has an increased market demand. In this case there must be supportive measures taken to protect NTFP exploitation. These measures come in the form of governance arrangements, such as permit systems for extraction and licenses for hunting within forest reserves. To Ros-Tonen (2000), forest conservation in terms of

NTFP exploitation must be managed in a highly organized manner. Also Ros-Tonen and K.T Wiersum (2005) note that care must be taken when developing new market opportunities for NTFPs. Unequal income distribution could lead to the creation of new elites, disrupting the structure of communities.

2.3 NON-TIMBER FOREST PRODUCTS

The study of non-timber forest products has been dealt with by people from varied fields of study such as forestry, ethno-biology, economic botany, social development, natural resource economics, conservation biology, protected area management, agro-forestry, marketing, commercial development, ecological anthropology, cultural geography and human ecology. This according to Warner, McCall and Garner (2008) has led to much discussion and no agreement on universally acceptable terminology to describe products of interest. The only terminology which is perceived as having flaws and has nearly deceased from general use in the early 1990's is 'minor forest products' (Cavendish, 2002). Another term is alternative forest product (AFP).

This term keeps timber as the main product and other products as alternatives. Others call them non-timber forest products (NTFPs). Arnold and Ruiz-Perez (2001) defined NTFPs as any non-timber products dependent on a forest environment. Camey, et al, (1999) referred to NTFPs as products with the exception of timber, harvested from a forest ecosystem. NTFPs could also be all tangible animal and plant products other than industrial wood, coming from natural forests, including managed secondary forests and enriched forests

(Ros-Tonen et al., 2005). Others including Carter (2002) prefer the term non-timber forest resources (NTFRs). Some authors use the term special forest products (SFP) to refer to products other than timber harvested from forests (Campbell and Tewari, 1995). Byron and Arnold (1999) argued that what is very often harvested is a raw material and not 'product' and preferred calling them resources instead of products like non-timber forest resources and values (NTRV) are also in use.

There is an overabundance of terminologies in use with single terms having a range of interpretations, none of which are universally recognized. The confusion over the definition and scope of 'NTFP' continues and there is no standard definition. Even the terms 'forest' and 'product' are debatable (FAO 2001). Nevertheless, several attempts have been made by different authors and international institutions to find an "acceptable norm" for defining NTFPs (Chamber, 2002).

FAO (2000) defines Non-Wood Forest Products (NWFP) as goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests. This excludes wood in all its forms. FAO (1993) also felt non-tangible benefits of forests should be included and thus carved the term non-wood forest benefits (NWFB). Benefits here is considered as an advantage, favorable effect, output, profit and includes non-tangible products such as recreation, landscape values, ecological values etc. FAO (1994) called them non-wood forest resources (NWFR) to mean all resources found or originating on forest lands regardless if they are currently recognised as goods,

as products, as providing a service. There are also other terms such as non-wood goods and services (NWGS) and non-wood goods and benefits (NWGB) in use (FAO, 1992). Although these different terminologies exist, the terms NTFP and NWFP seem to be more common in literature. The term NTFP differs from the commonly used NWFP by the FAO by including wood for uses other than for timber while NWFP excludes wood in all forms (FAO, 2006).

2.4 CATEGORIES AND USES OF NTFPS

Forests contribute to all aspects of rural life: providing food, fodder, fuel, medicines, building materials, and materials for all sorts of household items, as well as many more intangible benefits such as cultural symbols, ritual artifacts and locals (Falconer, 1995). There is, however, great variation in the extent to which forest products are used from area to area and even between households within a community. Because of this variation, it is difficult to abstract generalizations about NTFPs use. Indeed, this variation reflects the extent to which NTFPs are an integral part of rural livelihoods. NTFPs can be classified into different categories, based on the purpose of use (for example, as food, fuel, medicine, house hold utensils, farm implements); level of use (self-supporting, commercial); the part of plants harvested (leaf, fruit, stem, roots) and trophy from wild animals (Jeannette, 2000).For this study, the classification of NTFPs is based on categories related to their use and on the recently developed International Economic Botany Data Collection Standard use categories of NTFPs (Andel, 2006) is considered .

2.4.1 Food Products

As Andel (2006) stated, food products include: wild fruits, vegetables, nuts, edible roots, bush meat, edible insects, honey and food additives like spices, flavorings, food colorants, fermentation agents. Many non-timber forest products are harvested each year from forests around the world, mostly for commercial trade in the food products industry. Berries, herbs and mushrooms are among some of the most valuable non-timber forest products being harvested and sold to established markets throughout the world (Barfoot, 2006). Falconer (1992) noted that forest foods continue to contribute significantly to the diet of many rural households while a great variety of goods are gathered from forest and fallow lands, the forests commonly supply tubers, mushrooms and snails. Many different fruits and seeds are eaten as snacks on the farm or in the bush, especially by children.

In a study in the Asante-Akim district of Ghana, Ebregt (1995) noted that 28 forest food plants were commonly gathered and consumed. The majority were eaten in the "bush" as snacks (e.g. fruit of Lecaniodiscuscupanloides,Myrianthusarboreus, Napoleonaealeonensis and Dacryodesklaineana), or added to soups and sauces for flavoring (e. g. the ground stem of Albiziazygia, the leaves of Bombaxbuonopozense, and the fruits of Ficuscapensis and Tetrapleuratetraptera). He also noted that some plants were used in unique ways; for example, the stem of the liana, Byttneriacatalpifiblia was found to provide a source of drinking water. In

another study in a forest community called Ayirebi in Ghana, De Vries (1991) estimated that 9% of their food is obtained by hunting and gathering.

2.4.2 Medicinal Value

It includes medicinal plants, bark, resin and seeds (Andel, 2006). Forests supply medicines for the vast majority of urban and rural people and medicines are consistently ranked as one of the most-valued forest products by local people. Falconer (1997) state that all people use plant medicines and the majority of them (80%) rely on wild plants as their main medicinal source. Even among urban households plant medicines are widely used, especially as first aid. Although there are many different healing practices and beliefs, common to most are the use of plants. Knowledge is not confined to specialist healers; common plant treatments are known and used by the majority of people. Women play a critical role in this regard as it is usually they who administer first aid to their children. Many forest plants have been used for their medicinal value for many years. In Sub-Saharan Africa, for example, health care is largely a forest-based service. Barfoot (2006) indicated that there are many reports that caution the extraction of non-timber forest products from the forest, especially of medicinal plants. It has been noted that plants used for medicinal purposes are harvested more than any other product from the natural world. China, for example, is home to approximately 24,000 native species, with more than 10,000 of these being used medicinally. It is also estimated that 50,000 species of plants are used medicinally throughout the world.

2.4.3 Fuel (Energy supply)

Andel (2006) also noted that fuel includes fuel wood (firewood, charcoal), petroleum substitutes, and lighting resins. All rural households rely on fuel wood to meet all their energy needs. But, most fuel wood is collected from farms and bush fallow, rather than the forest. The supply of fuel wood is not a problem in any of the study villages. Although in some cases, where the fuel wood is used in a processing enterprise such as palm oil production or preparation of cooked foods for sale, fuel wood collection may be difficult and claim that readily available are scarce (Falconer, 1992).

2.4.4 Animal Fodder

Most of the households collect fodder for their livestock even though they are often free ranging for part of the day (Falconer, 1992). Forests play a significant role in feeding domestic and wild Animals through the provision of fodder trees and fodder shrubs (Ward, 2009). The importance of fodder trees has received recognition by the wider scientific communities in recent years, as the number of livestock increased proportionally with the increment of human population in most of tropical countries (Wardell, 2002). Then it is assumed that fodder plants are important components of animal feed particularly as suppliers of proteins and supplement feed in dry seasons (FAO, 1992).

2.4.5 Household utensils and agricultural equipment

This encompasses forest products such as fibers, baskets, furniture, bow and arrow, dye, paint, varnish glue (Andel, 2006). NTFP also features commonly in the material culture, providing household, agricultural and marketing equipment. other essential household items include mortars, furniture and sleeping mats, wood for hoe and other tool handles ,farm implements, poles for crop storage containers and crop dryers, canes for baskets, crop drying mats, fish traps and other fishing equipment. Most items are made within the household rather than being purchased and every household uses items made from NTFPs in daily life (Falconer, 1992). All these categories of NTFPs are found in the study area forest.

2.4.6 Honey product

Beekeeping is as old as human history itself (Farm Africa, 2008).Beekeeping is an ancient tradition in Ghana and is practiced by the wider rural community. Studies suggested that Ghana has favorable climate for an extended flowering season that supports the involvement of farmers in beekeeping activities (WHO, 2002). Historically, Ethiopia has been an important honey and beeswax producing country, which is dominated by local consumption. Annual honey consumption nearly equals annual production, currently estimated at 43,000 tones. As stated by Cirele (1996) Ethiopia is the leading honey producer in Africa and one of the ten largest honey and beeswax producing countries in the world. Moreover, Clarke, Cavendisch and Coote

(1996) indicated that beekeeping has significant role in forest conservation and development.

Chihongo, (1992) reported that both honey and brood (bee larvae) are important sources of food for many people in Africa. For example, that a mixture of honey and sorghum is an emergency food in parts of southern Tanzania because it can be stored for a longer time.

In some parts of Africa, honey is of particular importance as an ingredient for honey beer, which is used in the exchange economy in many places. For example, Clay (1992) reported that honey beer is often regarded as a 'local currency' among smallholder farmers in north-westem Zambia, where it is used for the payment of services like field cultivation, as well as sufficient value to be traded for cattle. Clarke (2004) also mentions the importance of honey beer for the Barabaig of Tanzania in paying for services and in traditional ceremonies.

2.4.7 Construction Materials

This includes forest products like palm leaves or grass for roof thatch, bamboo, wood (sticks and Poles) (Andel, 2006) .Building materials such as cement and aluminum roofing sheets are available, but the majority of rural households cannot afford these, relying instead on the forest for their building materials. Falconer (1997) explained that in most cases, rural houses are mud and wattle, utilizing sapling-size trees as standing poles and raphia (leaf petioles) or

bamboo to produce a lattice. While specific species are sought after for particular needs, a great variety of different materials are used, even within one community.

2.5 SPECIES EXPLOITED AS NTFPS IN THE HIGH FOREST ZONE OF GHANA

NTFPs are in general diverse so are the species exploited. According to Falconer (1992) products of the different species commonly exploited, traded and also for subsistence include the following: Food (snails, bush meat, mushrooms, fruit and seeds), Spices (*Piper guineensis, Xylopia*spp*, and Tetrapleuratetraptera*), Chewing sticks (*Garcinia kola*), Sponge (*Momordica*spp), Cola nuts, Charcoal, Medicines (*Alstoniaboonei, Rauwolfiavomitoria*), Household goods (sponges, mortars, pestles, utensils, wooden trays, grinders, mats and baskets), Food-wrapping leaves (Marantaceae) and Tool handles.

Falconer (1992) has tabulated some of the species and their products used commonly as household items and agricultural equipment in the forest zone of southern Ghana. Although the species exploited as NTFPs are diverse, they might be distributed differently in forest reserves and off-reserves. This study would only consider NTFP species obtained from study area.

2.6 SIGNIFICANCE OF NTFPS IN THE GHANAIAN ECONOMY

NTFPs play important role in the Ghanaian economy by way of supporting rural livelihoods in Ghana. In a survey covering a wide range of products and users in the forest zone of southern Ghana, WHO (2002) found 10% of rural people and 38% of households sell forest products. In a similar study covering households in villages around the large market centre of Kumasi, Falconer (1995) found that 68% of the households surveyed were involved in supplying NTFPs to the market. WHO (2001) also asserted that the collection and sale of wild meat realizes an income similar to that received by government employees.

Many rural communities in Ghana use NTFPs to support their livelihoods. Medicinal plants are used by people in Ghana to cure various diseases (WHO, 1997). Rural people especially depend very much on traditional medicinal sources for their health. Falconer (1992) has tabulated different medicinal plants and animal products used to cure various diseases. Trade and use of medicinal plant products have of late assumed a wider dimension with more plant medicinal products being traded on the local market. As noted by World Bank (2002) most of these medicinal plant products are still not understood, both in respect of their efficacy and chemical structure. To scientifically establish the efficacy of plant medicinal products and to include them in the main stream medicine for health delivery, a centre for scientific research into plants medicine was established in 1975 in Ghana.

NTFPs provide employment for some people in Ghana. People are engaged in making carvings, baskets and cane furniture for both local and export market. These activities are mostly done in the cities or in towns closer to the cities. For instance in Anhwia, towns near Kumasi, about 2000 people are estimated to be engaged in wood carving (World Bank, 2001).World Bank, (2010) ascertained that the retrenchment of workers from the formal sector as part of the World Bank's Structural Adjustment Programme led to more people resorting to the informal sector of the Ghanaian economy, such as woodcarving and other activities that may involve the use of forest resources. Falconer (1995) reported that a great many people of Nkwanta and surrounding communities depend on NTFP trade especially basket weaving for income generation. Employment and income activities from NTFPs may play some significant role in the Ghanaian economy especially where there are limited jobs in the formal sector.

2.7 MARKETING OF NTFPS

Many hundreds of millions of people across the developing world trade in a diverse range of non-timber forest products (NTFPs) everyday, which are marketed primarily in local and regional domestic markets (Scherr, S.J., White,A. and Kaimowitz, D. 2004). Building materials, fuel wood, charcoal, indigenous foodstuffs, medicines, craft items (from wood, grass, reeds, and vines), farm and household implements, furniture, and other more specialized products such as resins, honey, oils and alcoholic beverages are examples of some of products that may be found for sale in the vast majority of rural

markets and in nearby towns and cities (Shackleton et al., 2007). Local markets can provide a guaranteed way of reaching some of the poorest people, and play a crucial role in strengthening livelihoods and improving income opportunities. Consumers of locally marketed forest products may include local people, poor urban residents or outsiders (Shackleton, 2005). The production of NTFPs for local markets can be a part time, seasonal, occasional or full-time year round activity, with this varying across products, locations and individual households (Chikamai and Kagombe, 2002).

However; the NTFP trade is often constrained by conditions that typify underdeveloped areas, including isolation, limited local buying power, inadequate infrastructure, poor exposure and access to markets, weak political power, high transportation costs, communication problems, and inadequate education and levels of organization amongst producers and traders (Twumasi, 2001).Moreover, Neumann and Hirsch,(2000) indicated that the reason for the relatively low income for the collectors from NTFPs sale is attributed to lack of access to credit, transportation, information on price fluctuation and storage facilities. These conditions create more opportunity to intermediaries to place themselves as almost unavoidable links in the marketing chain.

2.8 ROLE OF NTFPs IN PROMOTING FOREST CONSERVATION

NTFPs have also been trusted to contribute to the conservation of biological diversity via sustainable harvest techniques or agro-forestry arrangements. The interest in NTFPs has grown with increasing awareness of tropical forest

deforestation and rising acknowledgment of the need to add value to forest resources, in order to compete with other land uses (Martinez, 2004). The origin of NTFPs conservation role emanates from the assumption that: NTFPs, much more than timber, can contribute in important ways to the livelihoods and welfare of populations living in and adjacent to forests; providing them with food, medicines, other material inputs, and a source of employment and income, particularly in hard times, and the exploitation of NTFPs is less ecologically destructive than timber harvesting and therefore provides a more sound basis for sustainable forest management. Increased commercial harvest of NTFPs should add to the perceived value of the tropical forest, at both the local and national levels, thereby increasing the incentive to retain the forest resource, rather than conversion of the land for use for agriculture or livestock (Arnold and Ruiz Perez, 1998). Through the holistic management of NTFPs, an attempt is made to maintain and sustain the resource and its users; contribute to sustainable development; conserve forests and biodiversity, and to promote non-traditional enterprises to improve local economies and diversify the economic base of the rural poor (Falconer,1997).

Many who approach NTFPs sector as conservation tool begin with a set of basic assumptions. It is assumed that natural forest will have greater long-term benefits if left standing; that local people will tend to manage their forest resources more sustainable if they directly benefit from doing so (Clarke, 2004). The logical conclusion is that if poverty can be alleviated through harvesting forest products, then there will be greater incentive to conserve those forests (Neumann and Hirsch, 2000).

The exploitation of NTFPs is viewed as more compatible with biodiversity conservation than timber extraction or agriculture. When standing forest is needed to supply particular plant products such as aerial roots or rattan, commercial extraction can contribute to forest conservation, as harvesters often deliberately protect useful trees from logging. If people make money by selling wild plant products, they will not need to cut down trees to make a living. But, when prices for NTFPs drop and harvesting is no longer economically viable, or if extractors are expelled from customary collection sites, people may shift to more destructive activities such logging, cash-crop agriculture or cattle ranching (Andel, 2006). Nonetheless, still as compared to alternative land use system, forest and home gardens managed for NTFPs production also retain a large amount of plant and animal biodiversity (Taddese and Feyera, 2008).

2.8.1 Degradation of the forest land

Forest reserves represent the nation's permanent forest estate from which the bulk of the nation’s timber and NTFPs are produced. Overall, it is the reserved forests that have engaged the attention of Ghanaian foresters for sustained yield management. As stated above, in spite of the initial slow progress in forest reservation, about 1.6m ha of the high forest had been properly constituted as reserves by 1939. To date, about 214 forest reserves covering about I. 8m ha of the high forest have been demarcated, surveyed and duly constituted under the forest ordinance (Shanker et al, 2004).

The forest reserves were initially established in all major hills and watersheds and were explicitly defined to meet local needs for forest products, to maintain a suitable local climate for agriculture and to safeguard water supplies (Shilligton, 2002). However, as reservation progressed, it became necessary (for management purposes) to demarcate the reserved forest into Production, Protection and Research areas, referred to as 'working circles'. Currently, of the 1.8m ha of reserved high forest, 1.37m ha or 76% are low-lying and constitute the Production Working Circle. The Protection Working Circle constitutes 0.40m ha or 23%, while the rest, about 0.02m ha forms the National Parks for wildlife conservation and management (Shackleton, 2006).

In a recent study of Ghana's forest composition and botany, Shylajan and Mythili 2007 found considerable degradation in the HFZ and reported that only about half of the nation's 1.8m ha of forest reserves is in reasonable condition. They noted that about14" of the reserves have no significant forest left and that there is virtually no significant area of forest outside the reserves. Ghana's Forestry Department's estimate is that there is not much intact forest currently left outside the forest reserves, wildlife reserves and traditionally protected areas of Ghana (Owusu, 2007).

The work of Shackleton, (2006) immediate and direct causes of forest decline and degradation in Ghana include; agriculture (shifting cultivation), wild life, mining, commercial logging, deforestation, wood gathering, charcoal production and urban growth (Shackleton and Sheona, 2004).Beyond the immediate causes are complexes of interacting social, economic, cultural and

political factors, which aggravate most of the immediate causes and make the solution of the deforestation problem more difficult. These factors include: uncertain forest property rights, population growth, technological deficit and macro-economic policies and socio-economic factors (Ruiz-Pérez and Arnold, 1995).

2.9 NTFPs MANAGEMENT

NTFPs management is cost effective in traditional systems partly because it is integrated with other land uses and labour activities (Panayotou and Glover, 1994). The traditional management system also revealed a wide range of intensity both within and among forest communities. Intensity varies along multiple axes of social, economic, geographic and ecological factors. These include the distance of the NTFPs source from dwelling, proximity to the market, the commercial value of the NTFPs, the nature of ownership and access right and the natural productivity of a particular forest area (Pierce, Shanley, & Laird, 2002). In addition to the complexity of the possible combination of these factors, the overall livelihood strategy of a forest community or household has a great influence on how much labour time is invested in NTFPs management (Reinhard, and Admasu, 1994).

Implementation of state co-management initiatives of NTFPs has often been followed by improved ecological conditions of the forest. Riadh, (2007) establishes the causal linkage between co-management and ecological conditions. In Sub-Saharan Africa in terms of the distribution of social and

economic benefits of commercial NTFP management, those initiative that incorporate pre-existing institutions and organizations appear to have the most positive outcomes (Agyemang, 1993). However, because of the historical neglect of NTFPs in conventional scientific forest management, the information gaps are numerous (Crook & Manor, 1994).

In Ghana, investigations in forest and Wildlife management have shown conclusively that a great many local communities and institutions have been managing their forest resource effectively, creating institutional arrangement to ensure the basic protection of forest and Wildlife and the enforcement of access and use right. NTFPs and sustainable rural livelihood is being reviewed in the ensuing narrative (Millar, 2003).

2.10 NATURAL FOREST RESOURCE MANAGEMENT

Forest resources are of great importance to millions of people, especially those whose livelihoods largely depend on them (MLNR, 2011). These resources play a key role in protecting the environment and are of tremendous importance to the sustainable development. Recognizing the importance of forest resources and the need for appropriate measures to optimize their management and utilisation in Ghana, successive governments formulated policies for developing a national forest estate and a timber industry that guarantee a full range of sustainable benefits for the population (Lindsey, 2008). However, most of the forest policies have failed to address the fundamental challenges of forest management in the country. Their

implementation, with all the associated reforms could not halt the degradation in the forest resource base. Indeed, some forest reserves are well-managed, but others may have been over-harvested and off-reserve forests are often unregulated (MLNR, 2011).

In addition, many managed forest reserves are without management plans. As a result, illegal chainsaw and mining (*galamsey*) operations in forest areas have thrived over the years despite conscious national efforts to curb the situation in collaboration with the security agencies. Wood fuel production especially in the fragile areas of the savannah regions and transition zones has remained unsustainable. Though it has significantly reduced in the North (-64% according to latest reports), wildfires continue to be an annual occurrence in all the ecosystems. The timber industry still operates with obsolete equipment and has installed capacities exceeding the Annual Allowable Cut (AAC). In order to address these challenges in Ghana, a new Forest and Wildlife Policy-2011 has been developed (MLNR, 2011).

Forests are amongst the most biologically-rich terrestrial systems. Together, tropical, temperate and real forests offer diverse sets of habitats for plants, animals and micro-organisms, and harbour the vast majority of the world's terrestrial species. In the past, timber production was regarded as the dominant function of forests. However, in recent years this perception has shifted to a more multi-functional and balanced view. Today, it is understood that forest biodiversity underpins a wide ranges of goods and services for human well-being. Ecologically intact forests store and purify drinking water, they can

mitigate natural disasters such as droughts and floods, they help store carbon and regulate the climate, they provide food and produce rainfall, and they provide a vast array of goods for medicinal, cultural and spiritual purposes. The health of forests and the provision of these and further forest ecosystem services depend on the diversity between species, the genetic diversity within species, and the diversity of forest types (IUCN, 2005).

The Millennium Ecosystem Assessment (MEA), a scientific undertaking involving over 1300 experts working in 95 countries, indicates that a large and increasing number of forest ecosystems, populations and species are threatened globally or being lost due to the loss and degradation of forest habitats, and that this reduction of forest biodiversity will be aggravated by the effects of climate change. Tropical moist forests are home to the largest number of threatened species of any biome. It is assumed that numerous, but not yet scientifically described, species are presently being lost together with their tropical forest habitats (MEA The International Tropical Timber Organization (ITTO) and the International Union for Conservation of Nature (IUCN, 2005) have developed and field-tested "Guidelines for the conservation and sustainable use of biodiversity in tropical timber production forests" among which are*;* Observe national laws/plans and practices, Establish a forest management plan in which biodiversity conservation objectives are clearly and explicitly identified, In preparation of harvesting plans, Plan the allocation of tropical production forests at a landscape scale, Raise public and political awareness on international/national laws and

disseminate biodiversity information and strategies using various media(IUCN, 2005).

2.11 TRADITIONAL MANAGEMENT SYSTEMS OF NATURAL FOREST RESOURCES

Traditional forest management (TFM) is one of the more prolific Community Based Natural Resource Management (CBNRM) strategies throughout the world. This is due to the recognition that forests are one of the most important yet threatened natural resources. Forests provide numerous ecosystem services, products for human consumption, and habitat for myriad species (Lindsey, 2008).

Unfortunately, deforestation has occurred at alarming scales and its effects are both local and global (FAO, 2001. Deforestation rates of tropical rain forests, for example, continue to rise and, rather than being afforested, former forests are converted for other land uses such as agriculture (FAO, 2006). Although forests provide economic and daily resources for humans, it is often more lucrative for people to grow cash crops instead of collecting non-timber forest products (NTFPs) or producing timber that may take years to grow after the first harvest (Lindsey, 2008). TFM is one attempt to reverse deforestation, and, by doing so, preserve ecological services and products that provide local communities with ways to secure livelihoods (Lindsey, 2008).

TFM has also grown in practice because centralized management of natural resources has often negated the rights of indigenous and local communities that once inhabited rural areas. For the most part, forests have been managed under the auspices of national agencies, often with the exclusion or outright removal of local people (World Bank, 2002). Historically, local or indigenous peoples were viewed as threats to native biodiversity, so the removal of local communities, especially in areas slated to become national parks, was often accepted by the urban public (Lindsey, 2008).

The mismanagement of forest resources has also impacted social and economic structures for local Ghanaians. At the time of its independence, Ghana was one of the most developed countries in Africa (MLNR, 2011), but it currently continues to have significant poverty rates (33.4 per cent of total population in 2002), especially in rural areas (World Bank, 2002). Many people in rural areas depend upon surrounding forest resources for their livelihood or as a supplement to income generating agricultural activities and subsistence farming (Andel, 2006). The exclusionary approach to resource management, especially in forest reserves, prohibited local peoples the ability to access resources they rely upon for livelihood, such as fuel wood for cooking or NTFPs (Lindsey, 2008).

In the latter half of the 20th century, Ghana began to restructure its policies and practices in order to address the aforementioned social and environmental issues. In 1985, for example, the country began a process of political decentralization in various areas of its operation, including natural resource

management (Barfoot, 2006). After the 1992 United Nations Earth Summit in Rio De Janeiro, Ghana, like many other countries, began to adopt integrated local-level sustainable development policies with social, economic, and ecological goals (Andel, 2006). An example of this is the 1994 Forest & Wildlife Policy Act, which was created to devolve more power to local communities for resource management and resulted in the creation of Community Forest Councils (CFCs) (Barfoot, 2006). In an effort to reduce deforestation and initiate afforestation projects, the government passed the Timber Resources Management Act (TRMA) in 1997, which essentially aimed to reduce the number of logging firms with access to forests, dispel illegal chain sawing, and require logging firms to pay taxes and restore logged areas (Lindsey, 2008).

In spite of these efforts, there is little evidence that, overall, devolution of forest management in Ghana has been effective in actually giving more autonomy to local groups. Many of the efforts to decentralize forest management have been nominal, and in large part the government retains control (Adepoju, 2007). The CFCs, for example, have lacked political clout and have no legal backing (Andel, 2006). Ghana's environmental policies have not been institutionalized at the local or regional levels, and are widely influenced by international development paradigms and residual colonial-era thinking that does not always coincide with local circumstances (Adhikari, 2004). Additionally, some authors argue that community-level institutions in Ghana are highly degraded as a result of colonization and post-colonial

policies that favor commercial and individual interests as agued by (Lindsey, 2008).

Many of Ghana's decentralization efforts are also less associated with environmental issues than social or economics ones. The national sustainable development plans are an example of this discrepancy (Adepoju, 2007). Environmental policies, including those related to deforestation, in Ghana are prolific, but essentially exist only on paper because they lack enforcement (Andel, 2006). It is noteworthy that a large majority of chainsaw operators are "locals" who were given little or no access to forest resources, which includes timber and NTFPs, and are seeking means to secure their livelihoods (Lindsey, 2008).

2.12 NTFPS AND SUSTAINABLE RURAL LIVELIHOOD

Millions of people throughout the world make extensive use of biological products from the wild. These items, commonly termed as Non Timber Forest Products (NTFPs), are harvested for both subsistence and commercial use, either regularly or as a fall-back during times of need. They add to peoples' livelihood security, especially for rural dwellers. NTFPs may also have marked cultural significance and value (Shackleton and Sheona, 2004). Estimates done by the WHO (2000) revealed that 80% of the people living in developing countries use wild plants to meet some of their health and nutritional needs. NTFPs are conventionally viewed as the products of the poor unlike that of the timber for the rich. However, evidence indicated that in

developing countries forest products are also an integral component of the livelihood of a sizable proportion of urban households (Byron and Arnold, 1999).

According to Shackleton and Sheona (2004) NTFPs provide livelihood benefits in assisting households to cope in times of adversity manifested as sudden changes in the economic, social or bio-physical environments in which households exist and function. It provides the poor quick cash or auto consumption goods especially in the event of unpredictably shortfalls, such as failure of agricultural crop or disasters (Angelsen and wunder, 2003). Studies by Ruiz Perez and Arnold (1995) indicated that NTFP-based activities can be important in filling seasonal and other food or income gaps can provide a buffer in times of hardship or emergency, is an activity of last resort, or can present an opportunity for improving household income and security.

The risk-management role of forest products is particularly important in the rural regions of developing countries, given that agricultural crops face many types of risk, such as price shocks, seasonal flooding, unpredictable soil quality, pests, crop diseases or illnesses. NTFP can be used directly in consumption or sold to fill cash gaps (World Bank, 2001). Moreover low capital and skills requirements of NTFP extraction as well as open or semi-open access to the resource, provides poor households to easily extract the resource (Chikamai and Kagombe, 2002).

Access to forest resources helps rural households diversify their livelihood base and reduce their exposure to risk. Earnings from forest products are often important as a complement to other income. Very large numbers of households generate some of their income from selling forest products, often when farm production is not enough to provide self-sufficiency year round. Income from forest products is often used to purchase seeds, hire labour for cultivation, or generate working capital for trading activities (Nguyen, 2006.) Safety net allows money to be saved and spent on other livelihood strategies such as agriculture which may in turn contribute to the households' sustainability. So safety net function of NTFP had a benefit for those who use the resources frequently in large quantity and occasionally.

As Falconer (2007) observed in Ghana, women have little or no access to capital and thus rely on NTFPs. Neima (2008) found in Benin, that for both men and women a major attraction of NTFPs gathering activities is that they require no cash investment". Ministry of Land and Forestry (1999) analysis of the economics of rubber tapping points to low capital requirements as the main advantage of extraction. A second reason that people engage in NTFPs extraction arises because, in most of the world's regions, forest are geographically remote from the centre's of economic and political power. The significance of this fact is that geographical and economic marginalization's often mutually reinforced (Mulugeta, Tarekegn & Mats. (2003). In short, tropical forest tends to be occupied or surrounded by the poorest, most economically marginalized segment of society. Throughout the America, indigenous people have extensive knowledge of forest and of NTFPs, but have

been politically and economically marginalized for several centuries (Mitchell, 1999).

2.12.1 The Concept of Sustainable Rural Livelihoods Approach

The concept of 'Sustainable Rural Livelihoods' relates to a wide set of issues and is increasingly central to the debate about rural development, poverty reduction and environmental management (Scoones, 1998). It was first put forward in the report of an Advisory Panel of the World Commission on Environment and Development (Chambers, 2002). In calling for a new analysis, the commission proposed sustainable livelihood security as an integrating concept, and made it central to its report. A household may be enabled to gain sustainable livelihood security in many ways - through ownership of land, livestock or trees; rights to grazing, fishing, hunting or gathering; through stable employment with adequate remuneration; through varied repertoires of activities" (World Bank, 2002).

Thus, the idea of sustainable livelihoods emerged as an approach to maintaining or enhancing resource productivity. The definition of sustainable livelihoods has undergone modifications since it was first introduced. For example, in modifying the WCED Panel definition, Chambers, 2002) put forward the following working definition of sustainable livelihoods:

"A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is

sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term" (Chambers, 2002).

Drawing on Ward (2009), Scoones (1998) also defines sustainable livelihoods as follows:*"A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base" (Scoones, 1998: 5; see also Camey, 1998).*

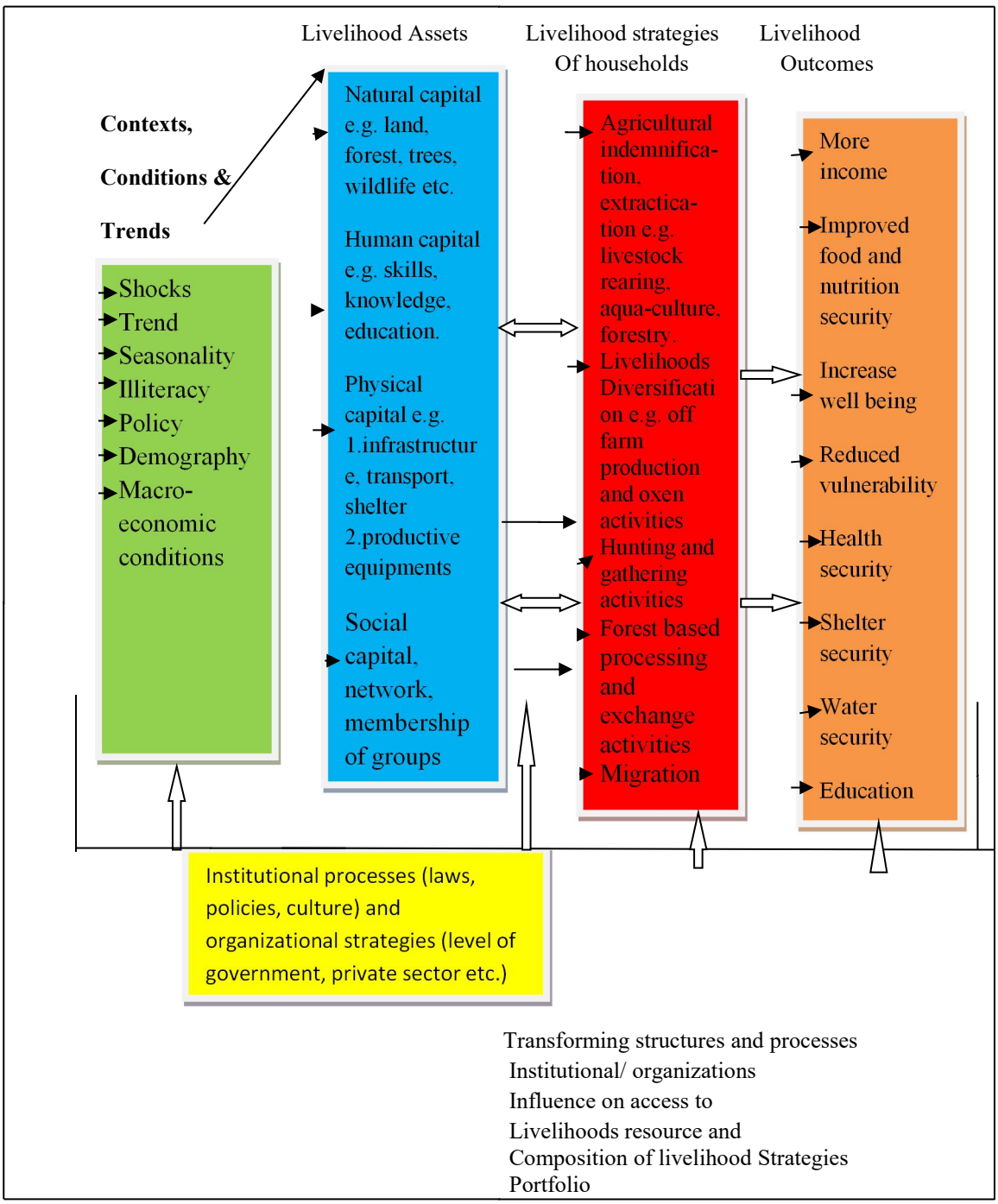
In particular, the asset dimension is critical to an appreciation of the concept. Assets, in this context, are resources and stores (tangible assets), and claims and access (intangible assets), which a person or household commands and can use towards a livelihood (Gardei, 2006). Out of these tangible and intangible assets people construct and contrive a living, using physical labour, skills, knowledge, and creativity.

The sustainable livelihood approach allows a wide range of influences to be brought into a single frame of analysis. Situated in particular contexts and settings (historical, environmental, policy, etc.), particular assets or forms of capital are accessed by households, and used to construct livelihood strategies, which result in livelihood outcomes.

2.12.2 A Framework of Sustainable Rural Livelihoods

The sustainable rural livelihoods framework has a number of basic elements: livelihood assets, livelihood strategies, livelihood outcomes, and institutional processes and organizational structures. The assumption is that people pursue a range of livelihood outcomes (more income, food security, health security, reduced vulnerability, etc.) through different activities, by drawing on a range of assets. However, they are also influenced by the types of vulnerability, including shocks (such as drought), overall trends (in, for instance, resource stocks), and seasonal variations (Farrington et al, 1999). Options are also determined by the structures (such as the roles of government or of the private sector) and processes (such as institutional, policy and cultural factors) which people face. In aggregate, these conditions determine rural people's access to assets and livelihood opportunities, and the way in which these can be converted into outcomes (Farrington et al, 1999).

FIGURE 2.1 A FRAMEWORK FOR SUSTAINABLE RURAL LIVELIHOODS



Source: Adopted from Adanteal from Seoones (1998)

Livelihood Assets

The ability to pursue different livelihood strategies is dependent on the basic material and social, tangible and intangible, assets that people have in their possession. The framework identifies five types of capital assets which people can build up and/or draw upon. These are: natural capital - the natural resource stocks (soil, forests, trees, water, air, genetic resources, etc.) and environmental services (hydrological cycle, pollution sinks, etc.) from which resource flows and services useful for livelihoods are derived; human capital - the skills, knowledge, ability to labour and good health and physical capability important for the successful pursuit of different livelihood strategies; financial capital - the capital base (cash, credit/debt, savings, remittances, etc.) which are essential for the pursuit of any livelihood strategy; physical capital - other economic assets including basic infrastructure such as transport and shelter, production equipment and technologies which are also essential in livelihood strategies; and social capital - the social resources (networks, social claims, social relations, affiliations, associations, etc.) upon which people draw when pursuing different livelihood strategies requiring co-ordinated actions (Scoones, 1998; Farrington et al., 1999).

Livelihood strategies and outcomes

In a rural context, households may construct four main categories of livelihood strategies: livelihood intensification, extensification, diversification and migration (Scoones, 1998; Camey, 1998). 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 fanning, 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 (Farrington et al., 1999).

Transforming structures and processes

Within the sustainable livelihood framework, certain social structures (the roles of government, private sector, and other organizations) and processes (laws, policies, institutions, culture, etc.) mediate the complex and highly differentiated process of achieving a sustainable livelihood. These structures and processes influence rural peoples' access to resources and livelihood strategies, and the way in which these can be converted into outcomes (Farrington et al., 1999). Institutional arrangements, understood in the very broad sense as 'regulations', including the rules and norms, which govern individual and group behaviour, play a critical role in sustainable livelihoods (Millar, 2004).

In the same vein, Getachew, Sjaastad & Vedeld (2007) reported that informal institutions are of great importance in determining how people gain access to the resources needed for a reasonable livelihood. To their view, the large extended household is the central institution through which people gain

security, pool resources, and share risk (Godoy & Contreras, 2001). The further revealed that customary institutions are also important for managing day to day access to farmland, water and gazing in Mali (Hegde & Enters, 2000). Sustainability is a key quality of successful livelihoods. Sustainability means both the ability of the livelihood system to deal with and recover from shocks and stresses, by means of coping (short term, reversible responses) or by adaptation (a longer term change in livelihood strategy), and also the ability of the livelihood system and the natural resources on which it depends to maintain or enhance productivity over time.

2.12.3 Rural Livelihood Diversity in Developing Countries

Rural people in developing countries, notably in sub-Saharan Africa, do not gain a full living simply from farming or herding. They normally practice 'livelihood diversification', undertaking a wide variety of activities to boost security and raise living standards (Ellis, 1999).Rural livelihood diversification is thus 'the processes by which rural households construct a diverse portfolio of activities and social support capabilities for survival and in order to improve their standard of living' (Ellis, 1999: 2).

Rural livelihoods thus encompass several activities. These can include cultivation, herding, hunting, gathering, reciprocal or wage labour, trading and hawking, artisanal work such as weaving and carving, processing, fetching and carrying and the like. These activities variously provide food, cash, and other goods to satisfy a wide variety of human needs. Some of these outputs

are consumed immediately; others go into short or long-term stores, to be consumed later or to be invested in other assets (Kasanga, 1994).

Meams and Dulamdary, (2000) also report that livelihood diversification is an important household strategy in Zaradougou, Mali. They note that, although cotton and cercal production are the major source of income for most households in the region, other livelihood activities are also important. These include coffee and cocoa plantations, gathering activities (e. g. Shea nut and honey collection), the harvesting and selling of firewood, small stock rearing and poultry keeping. Cultivation of fruits and dry-season vegetables are also important sources of income for several households in the region (Martinez and Beneficiario, 2004).

2.13 FORESTRY AND FOREST MANAGEMENT POLICIES

In Senegal, the earliest forest laws on forestry legislation dated from the 1900s and tended to focus on conservation and repressive measures. They were enforced until independence in 1960. The system was based on the protection of areas of classified forest, the surveillance of protected species and reforestation by government department under state supervision. This was very centralized system for the management of government lands based on forestry code which define the legal framework for the exploitation of resource (Ward, 2009). Strategies of intervention and forest code were made focusing promotion and integrated development of rural forestry. In 1981, a

PDDF (Plan Directeur de Developpement Forestier) was implemented with the aimed of conserving forest resources.

Studies of natural resources policy, report how forest policy had until the 1990s marginalized local forest dwellers in favor of the interests of the timber industry (Michon and Deforesta, 1997) Policies that affect the management of natural resources in the forest margins of Ghana constitute a sub-set of both environmental policies, as well as natural resources policies in general. What can be called the first "Forest policy" of Ghana was adopted in 1948. The policy provided for the creation of permanent forest estates for the welfare of people, protection of headwaters agriculture crops, as well as for public education and research.

The current forest and wildlife policy of 1994 is the principle document from which all the forest management related legislation, strategies and programmes in Ghana are derived. The policy is aimed at "conservation and sustainable development of the nation's forest and wildlife resource for maintenance of environmental quality and perpetual flow of optimum benefit to all segments of society" (forest and wildlife policy, 1994: 8). The main objective of the policy is the involvement of all stakeholders for efficient management of forest resource. It consists of five key objectives and associated strategies, summarized as follows: Management and enhancement of Ghana's permanent estate of forest and wildlife resources; Promotion of viable and efficient forest-based industries, particularly in secondary and tertiary processing; Promotion of public awareness and involvement of rural

people in forestry and wildlife conservation; Promotion of research-based and technology-led forestry and wildlife management, utilization and development; and Development of effective capability at national, regional and district levels for sustainable management of forest and wildlife resources (MLF, 1999).

The guiding principles of the 1994 Policy are based on national convictions and global concerns. The Policy embodies Ghana's! aspiration to become "a middle-income country with an agenda that emphasises a nation-wide self-reliance, secured within a cultural ethos of Ghanaian values, and buoyed by a decentralized and constitutional democracy, an open and liberal market economy and equitable economic development by the year 2020" (Ghana's Vision 2020 (MLF, 1999).

Major emphasis on forest resources in general, the current forest and wildlife policy of Ghana (1994) is devoid of specific mention of NTFPs. The policy emphasizes the management of the forest for value-addition, processing of timber and other lumber for the external markets. Policies for regulating or de-regulating as stated in the forest and wildlife policy are intended or skewed toward timber products. The policy is also silent on the management of NTFPs and how the development of the community based integrated resource management in the southern zone would be done.

2.14 CONCLUSIONS

The chapter focused on the theoretical underpinning of the study area. It reviews key aspects; NTFPs debate, Non-Timber Forest Products, categories of NTFPs, species exploited as NTFPs in the high forest zone of Ghana, significance of NTFPs in the Ghanaian economy, role of NTFPs in forest conservation, NTFP management, NTFPs and sustainable rural livelihood, forestry and forest management policy.

Debates of reasons why the poor engage in NTFPs extraction revealed that NTFPs extraction generally requires very little capital investment. It also revealed that other factors are that poor people engage in NTFPs extraction because, in most of the world's regions, forest are geographically remote from the centers of economic and political power and extraction offer the appealing alternative in the absence of other income sources. It revealed further that, a lot of local communities and institutions have been managing their forest resource effectively, creating institutional arrangements to ensure the basic protection of forest and wildlife and the enforcement of access and use rights. Though there have been some achievements in the development of essential infrastructures, institutions and systems, unfortunately, traditional institutions and systems have been inadequately involved in forest and wildlife management resulting in resistance to change due to attitudes, values and practice.

Policies for regulating or de-regulating as stated in the forest and wildlife policy are intended or skewed towards timber and other traditional forest products. The policy is also silent on the management of NTFPs and how the development of the community based integrated resource management in the High forest Zone would be done. This therefore implies that, there is evidence that Ghana has no existing policy and policy direction on NTFPs and the general term of "forest resource" is doing a very big disservice to a very significant resource that is critical for poverty reduction in rural forest areas.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

Methodology is a framework for the research study, and comprises the research methods, procedure and tools for collecting and analyzing data in order to find answers or solution to the research problem (Karma, 1999). For any research project, the researcher must have a detailed plan which will result in accurate and valid data for analysis and interpretation to answer the research questions and objective. The methodology focuses mainly on the research design, population, sample and sampling procedure, the Study Area, instrumentation and data analysis.

3.2 THE STUDY AREA

Asutifi North District is one of the 22 Districts in the Brong Ahafo Region of Ghana. It is located between latitudes 6°40' and 7°15' North and Longitudes 2°15' and 2°45' West. The District capital is Kenyasi, which is about 50km from Sunyani, the regional capital of Brong Ahafo, through Atronie and Ntotroso (GSS, 2012). It shares boundaries with Sunyani Municipal in the North, Tano South District to the North East, Dormaa Municipal to North West, Asunafo North Municipal and Asunafo South District in the South West

and AhafoAno South and North Districts (Ashanti Region) in the South East (GSS, 2012).

The District has a total land surface area of 1500 sq.km. Though it is one of the smallest in the Brong Ahafo Region, with a total of 117 settlements, and four paramouncies (Kenyasi No.1 Kenyasi No.2, Hwidiem and Acherensua), the strategic location of the community coupled with the improvement of alternative livelihood source, suggest further that, NTFPs demand could be on the rise (GSS, 2012).

3.2.1 Population Distribution

Under the 2010 Housing and Population Census, the Asutifi North District registered a population of 52,259 representing 2.7 percent of the region's total population. Males constitute 51.2 percent and females represent 49.8 percent (GSS, 2012). About 67.8 percent of the population lives in rural localities. Thus more than eight (8) out of ten (10) persons in the District live in rural areas (GSS, 2012). The population of the District is youthful (under 15 years) with 49.8 depicting a broad base population pyramid which tapers off with a small number of elderly persons 60 years and above been 6.7 percent. With respect to the dependency class, the district has a total age dependency ratio of the district is 77.8 percent, the age dependency ratio for male is 77.6 percent and female is 71.9 percent (GSS, 2012). The population of the district suggests that, natural resource demand, including forest products which is fast depleting, will surely provide the search for alternative source, including NTFPs.

3.2.2 Topography and Drainage

The Asutifi North District lies within the forest dissected plateau physiographic region with average height of about 700 feet above sea level. The lowest part is about 650ft above sea level found along the river basins whilst the highest point is found within a chain of mountains in the north east reaching a height of 1400 feet above sea level (Asutifi North District, 2014). These mountains form water shed for the many tributaries of the Tano River and other streams. There are out crops of gigantic rocks found over Birimian rocks basement standing about 750 - 900 feet above the broad plateau surface (Asutifi North District, 2014).

The District is drained by Tano River and its many tributaries which include Nsubin, Goa and Ntotro rivers exhibiting a dendentric pattern. These youthful fast flowing rivers have cut up the plateau surface giving rise to the dissected nature of the plateau (Asutifi North District, 2014). It is therefore worthy to note that, the good drainage system and topography of the lands provides an opportunity for alternative livelihood sources as NTFPs.

3.2.3 Geology and Minerals

This physiographic region is underlain by Precambrian rocks of Birimain and Dahomeyan formations (Asutifi North District, 2014). The Birimian formations are known to be the gold bearing rocks. The Birimian rocks also have a high potential for Manganese and Bauxite. Currently gold is being mined in area where these rocks are found by Newmont Ghana Gold Limited one of the biggest mining companies in the world(Asutifi North District, 2014).These areas include Kenyasi No. 1 & 2, Ntotroso, Gyedu-Wamahinso and other smaller communities. However, other exploration activities are on-going in other communities within the District.

Diamond is discovered at Wamahinso. There is also a widespread deposit of sand and clay in the District. The Sand deposits can be found at Kenyasi, Gambia No.2, Hwidiem and Acherensua whilst the clay deposits can be found at Nsunyameye and Dadiesoaba(Asutifi North District, 2014). There are rounded out crops of granite found over the Birimian rocks at Kwadwo Addae Krom, Goa Asutifi, Georgekrom and Konkontreso which have high potential of iron and bauxite (Asutifi North District, 2014). The availability of minerals and geology equally provides an opportunity for alternative livelihood source- as NTFPs.

3.2.4 Climate and Vegetation

The District lies within the wet semi-equatorial zone marked by double rainfall maxima; June and October with a mean annual rainfall between 125cm and 200cm.The first rainy season is from May to July (maximum) and the second rainy season is from September to October (minimum) when the District comes under the influence of the Wet Maritime Air mass (Asutifi North District, 2014). The beginning of the rainy season is marked by heavy thunderstorms which sometimes cause the ripping off of building roofs as experienced at Gambia and other places in 2000 (MTDP, 2000).There is a sharp dry season between the two rainy seasons the main one coming between November and March when the tropical continental Air mass in the country sweeps over the area (Asutifi North District, 2014).

Relative humidity is generally high ranging between 75% to 80% during the two rainy seasons and 70% to 80% during the rest of the year. The District has a moist semi-deciduous forest. Man's activities notably farming, lumbering and occasional bush fires have however disturbed this vegetation. This has changed some areas into a derived wooded Savannah. Such transitional zones could be observed along the roads to Goamu-Koforidua, Kensere and Dadiesoaba. These developments call for immediate measures to protect this sensitive ecological zone. There are however, large areas of forest reserves (Asutifi North District, 2014). These include the following: Biaso Shelter Belt, Bia Tam Forest Reserve, Asukese Forest Reserve, Goa Forest Reserve, Desiri Forest Reserve, These forest reserves together covers a total of about 475.63

square kilometers about 30% of the entire land surface area of the District (Asutifi North District, 2014). It can be therefore concluded that, the good vegetation cover and climate possibly support NTFPs, alternative livelihood source in the District.

3.3 RESEARCH DESIGN

The study was carried out through the evaluative case study method. In spite of the fact that the case study method is criticized for lack of grounds in establishing reliability or generality of findings and being an exploratory tool, the researcher saw the case study method as being relevant to his study and therefore decided to use it. As argued by Yin (1993), the case study method offers an in-depth, longitudinal examination of a single instance or event: a case. It provides a systematic way of looking at events, collecting data, analyzing information, and reporting the results. The case study was used to evaluate a programme or decision and usually, the focus is on a particular community, organization, or set of documents. Hence, since the study sought to evaluate the role of Non- Timber Forest Products (NTFPs) in the Asutifi North District, with focus on residents. It was therefore more appropriate to use the case study method for the research.

3.4 SAMPLING PROCEDURE AND SAMPLE SIZE

In selecting a sample population for the study, the study made use of the stratified sampling technique. The District under study; Asutifi North District

falls under the Kenyasi traditional council with divisional and community traditional authority structures. To ensure fair representativeness, the strata constituted the 5 zonal/area/town councils in the Asutifi North District, which includes: Kenyasi No.1, Kenyasi No. 2, Ntotroso-Gyedu-Wamahinso, Goamu and Gambia Area Councils. In other to effectively obtained the sample communities, simple random sampling was used to select two (2) communities. From each Area Council. Since the population of each community is large and dispersed, systematic sampling was used to select respondents; here one respondent was selected from every other two (2) houses in each community until the total of 10 respondents were obtained from each community. In all, a total of one hundred (100) respondents were sampled for the study (Table 3.1).

More so, Key informants comprising policy makers, service providers and implementers (i.e staff of EPA, FSD, MoFA, DA, and NGOs) were also identified purposively and interviewed on broad areas as follows; NTFPs in the context of resource users in the Asutifi North District, the contribution of NTFPs extraction, processing and marketing to rural livelihoods in the District, the management systems for NTFPs in rural communities and policy implications for the role of NTFPs in rural livelihoods. Participants observation was also adopted to critically appreciate events, and happening with respect to the issues under investigation.

TABLE 3.1 ZONES, SAMPLED COMMUNITIES AND NUMBER OF RESPONDENTS

Zones/ area/town council	Communities	Number of respondents
Kenyasi No.1 Area Council	Obengkrom	10
	Boagyampa	10
Kenyasi No. 2 Area Council	Asempanaye	10
	Kwaakwire	10
Ntotroso-Gyedu-Wamahinso Area Council	Yawmusukrom	10
	Amoamasu	10
Goamu Area Council	Goamu-Koforidua.	10
	Goamu camp	10
Gambia Area Council	Gambia No. 1	10
	Biaso	10

Source: Author's Construct, June 2015

3.5 RESEARCH INSTRUMENTS

Because this is a social research, the study design made use of qualitative and quantitative data gathering methods to ensure systematic empirical investigation of the social phenomena. The objective for using qualitative and quantitative methods was to help in drawing conclusion from observation made from variables. The study adopted questionnaires, Key informant interview and observation as data collection tool;

3.5.1 Questionnaire

The complete sample size was covered at the end of the study with the use of questionnaire. Where the interview is not suitable due to issues of inconvenience with respondents, the questionnaire is quite appropriate for that. The instrument consisted of both open and closed ended items that addressed the research questions for respondents. The questionnaire was administered on residents in order to obtained responses to answering research questions. The tool contained both open and closed ended questions, numbering 47 questions items.

3.5.2 Key Informant Interview

The in-depth interviews were designed for key personalities whom, the study believed would have a good knowledge with respect to the issues under investigation. The interview guide had questions that were strictly based on

the objectives of the study for easy categorization. The basis of the questions primarily involved the careful reviews of the relevant theoretical framework and the objectives of the study. The study precisely interviewed personnel's from the following agencies and institutions; Asutifi North District Assembly, EPA, FSD, NGOs and MoFA.

3.5.3 Observation

The study adopted participant Observation, in order to better appreciate the term of events with respect to the study. Information were obtained through this process, in the form of informal conversations, personal reflection and analysis were formulated and recorded in field notes. Participant observation provided the opportunity to collect additional data beyond what could not have gotten from the interviews. This was obtained occasionally through observing residents activities over the data collection period.

3.5.4 Secondary Source

To Karma (1999) using secondary data, it helps in comparing of another research because the data is already in existence. The secondary data was obtained from relevant documents, reports, articles, theses and dissertations, conference proceeding, reports journals and the internet as well as the following agencies: Asutifi North District Assembly, EPA, FSD, NGOs and Ministry of Food and Agriculture (MoFA).

3.6 ETHICAL CONSIDERATIONS

Ethical considerations were given the necessary priority. Consent was obtained from respondents before administering the questionnaire, as well exploring sensitive issues after good relationship had been established with the respondents. In other to guarantee confidentiality of the data obtained; names and addresses were omitted from the questionnaire because of sensitive issue. On the part of obtaining samples, recruitment was done in such a way that all respondents had being creditably selected.

3.7 DATA ANALYSIS

The view held by Karma (1999) referred to data analysis as the computation of certain measures along with searching for pattern of relationship that exist among data-groups. The data collated therefore was analyzed using the Statistical Product and Service Solutions (SPSS) version 20 and then presented in tables and charts. The charts, histograms and tables therefore provide for responses to question items, frequencies of different responses and percentage of response out of the total respondents. Brief comments were made under each diagram/ table highlighting the unique observations such as those in conformity with the literature or in direct conflict or contradiction with aspects of the literature and /or any established fact.

CHAPTER FOUR

RESULT/ FINDINGS

4.1 INTRODUCTION

This chapter deals with the analysis of the data gathered from respondents on questionnaire administered, as well as through observation and interview on selected institutions. The purpose of data analysis according to Ward (2009), is to improve order on a large amount of information so that conclusion can be made and communicated. In this analysis, data were broken into meaningful statistics using tables and bar chart.

4.2 SOCIO-DEMOGRAPHIC CHARACTERISTICS

The research analyzed the socio-demographic characteristics of the respondents. Relevant aspects of the characteristics that hinge on Management of Non- Timber Forest Products (NTFPs) and livelihood issues are discussed. These include; the age category, gender status and community institutions and level of education and status in the community of the respondents. Details of the analysis are presented below;

4.2.1 Age and Status in the Community

The research revealed that, the aged is a receptor of knowledge, hence, in traditional societies they are often respected and seen as authorities in their various field of endeavor while the younger ones learn from them, as such, they occupy relevant leadership positions in the community either by succession, inheritance or parents' vocation. A cross-tabulated relationship between Age and Statuses in the study was demonstrated. The Table below gives a picture of the situation.

TABLE 4.1 AGE AND STATUS OF RESPODENTS

Age	Status in Community							
	Chief	Clan Head	Queen mother	Diviner	Community Member	Others		
	Number	Number	Number	Number	Number	Number	**Total**	**Percent**
15-25	0	0	0	0	5	0	**5**	**5**
26-35	0	0	0	1	35	2	**38**	**38**
36-45	0	0	0	0	25	1	**26**	**26**
46-55	0	1	2	0	15	1	**19**	**19**
56-65	2	0	1	1	4	2	**10**	**10**
66+	0	0	1	0	1	0	**2**	**2**
Total	**2**	**1**	**4**	**2**	**85**	**6**	**100**	**100**

Source: Field Survey- June, 2015

Table 4.1 shows that, 38% percent of respondents constituting the majority are in the age group 26- 35, while 26% are also in the age category 36- 45. Furthermore, the table also show that 19% of the respondents were aged 46- 55, with 10% belonging to the age group 56- 65. The least age category 66+

was only 2%. The data suggest that, Asutifi North District has a youthful population base since majority of the respondents being community members, diviners, chief's queen mothers and clean heads belong to the active labour force are in the age group 15-45, collectively constituting 69%. It is therefore obvious majority of the youth engages in NTFPs activities and for that matter must be involved in all strategies with respects to policies and management.

4.2.2 Gender and Status in Community

Gender is one of the bases of inequality but cross- cut others such as class and ethnicity (Crook & Manor, 1994). The issue of gender continuous to feature prominently in most third world communities, most institutions in Ghana are gender unfriendly (Hamida, 2004), the right to successions, clan heads, decision making and others are still male dominant. In view of the growing concerns of gender and related issues the research emphasized on gender data, feeding status in community.

TABLE 4.2 GENDER AND STATUS OF RESPONDENTS

Gender	Status in Community						
	Chief	Clan Head	Queen mother	Diviner	Community Member	Others	
	Number	Number	Number	Number	Number	Number	**Total**
Male	2	1	0	2	55	6	**56**
Female	0	0	4	0	40	0	**44**
Total	**2**	**1**	**4**	**2**	**85**	**6**	**100**

Source: Field Survey- June, 2015

From the Table 4.2, 56% of respondents are male and44% are female. It can therefore be concluded that NTFPs activities are widely dominated by Men. The distribution of leadership responsibilities in the community clearly shows male overwhelming dominance; Clan headship, chieftaincy institutions and divinations are all occupied by males. It was also evident that women in any way could influence community process through the office of the Queen mother; an institution in most settings is established to cater for women leadership and responsibility.

The data also indicate that majority of the community members do not assume leadership responsibility. The findings are synonymous to the view held by Apusigah (2004) who argued that important decisions regarding access to critical natural resources (Non- Timber Forest Product) management issue may be taken by few males in a community.

4.2.3 Level of Education and Status of Respondents

Education is widely recognized as a fundamental approach to achieving development. The deficiency in the development paradigm of world communities including third world country is traceable to the quality of human resources. These highlight the emerging concerns that illiteracy as well as inadequate educational infrastructure among others have contributed to the unfortunate story of education. The issue of education was therefore necessary in the study in order to give a vivid description of the community. The data is represented in Table 4.3.

TABLE 4.3 EDUCATIONS AND STATUS OF RESPONDENTS

Level of Education	**Status in Community**						
	Chief	Clan Head	Queen mother	Diviner	Community Member	Others	
	Number	Number	Number	Number	Number	Number	**Total**
Primary	0	0	0	0	10	1	**11**
Middle/JHS	0	0	0	0	10	0	**10**
Vocational/ Technical	0	0	0	0	5	0	**5**
SHS	0	0	0	0	5	0	**5**
Post-secondary	0	0	0	0	2	0	**2**
Polytechnic	0	0	0	0	2	0	**2**
University	0	0	0	0	1	0	**1**
No Formal Education	2	1	4	2	50	5	**64**
Total	**2**	**1**	**4**	**2**	**85**	**6**	**100**

Source: Field Survey, June 2015

It is an established fact that majority of respondents in the District have not received any formal educational training (64%). It was further confirmed that the community leadership rests in the hands of those who have not gotten formal educational exposure. These include: 2 Chiefs, a clan head, 4 Queen mothers and 2 Diviners. Majority of ordinary community members numbering 50 also belong to this category. On the basis of those who received educational training, majority of them received Primary and Middle/JHS, collectively being 21 of the total respondents. Respondents with Technical/ vocational and

secondary training were 5%. Furthermore, 2% cited post-secondary with another 2% indicating polytechnic. The remaining constituting the minority (1%) indicated they received university education. The findings confirms the view of the World Bank (2010) who argue that unless more focus is placed on ensuring equity in resource disbursement and efficiency in resource allocation and programme implementation, a large portion of Ghana's poor will remain out of reach from quality education services, experience sub standard learning outcomes and fail to escape the poverty cycle.

The implications from these findings are that; most residents may not be conversant with modern trends, especially the impacts of their actions such as over exploitation of forest resources, since they have not received formal training. It is therefore prudent to explore indigenous ways of dealing with issues of NTFPs.

4.2.4 Summary and Conclusion

It is refreshing to note that the modal age category of respondents, being 26-35 representing 38% is an indication that the District is endowed with active labour force which if well taped could be utilized to engage in developmental discourse especially in the field of agriculture. It is also evident that community leadership is in the hands of the elderly aged 46+ indicating that the youth constituting the majority are excluded from community decision and other community led interventions processes. This could be traceable to the position of traditional beliefs and norms which qualify the elderly as blessed

with wisdoms or apathy on the part of the youth to assume traditional responsibility which in widely condemned by the introduction of Christianity and Islam with overwhelming youth fellowship. The quality of community decision making could also be compromised based on the exclusion of majority of people whose status as being community members with no or less influence on decision making.

Also further findings revealed that most of the social institutions including chieftaincy, clan head and divinations are strictly the preserve of Male in the District. Though the modern office (Queen mother) is established to cater for women leadership, the growing significance of this office nonetheless is overshadowed by institutions being held by men. The gender concerns in the District undoubtedly, if not checked would continuously relegate women to the background and eventually hamper the country's efforts in achieving the Millennium Development Goal (MDG) on "Empower Women and Ensure Gender Equity" (UN, 2000).

The development of education in the District is not gratifying to note. The findings suggest that majority of the respondents (64%) have not received formal education. This further indicates that the quality of human resource based on recent educational training approach is unfortunate, and could therefore adversely affect the District in embracing modernization approach to civilization and development. The issue of education in the District should serve as a call on government and policy makers and other players in the spheres of education to advance interventions in order to improve upon

educational development in the District. The educational deficits have the tendency to compromise gains / efforts from consolidating the gains made in Achieving Universal Basic Education, a component of the MDG (UN, 2000).

4. 3 LIVELIHOOD SECURITY

Natural resources are a fundamental component of the economic boom that has lifted hundreds of millions of people out of poverty in a number of large, emerging middle-income countries (Ward, 2009). The increased demand for natural resources across the board has created both massive opportunities as well as considerable risks, for resource-exporting developing countries. At one level, it has the potential to generate unprecedented levels of revenues for these countries. But, conversely, this can make countries more vulnerable to the political and economic instability as well as devastating environmental impact (Ward, 2009). This section therefore, analyses NTFPs as part of natural resources that constitute livelihood in the Asutifi North District and how they contribute to household security in the area of health care, education, food security and other investment opportunities.

4.3.1 Sources of Livelihood in the Community

In order to ascertain answers to the livelihood source of respondents in their various communities in the Asutifi North Districts, the study sought to find out the livelihood activities respondents engage in. Table 4.4 further provides details to answering questions on livelihood sources.

TABLE 4.4 SOURCES OF LIVELIHOOD OF RESPONDENTS

Livelihood Source	Frequency of Response	Percent
Farming (crops & livestock)	50	50
Gardening	5	5
Fishing	2	2
Hunting	5	5
Gathering, processing and marketing of NTFPs	30	30
Petty trading	5	5
Charcoal production	3	3
Total	**100**	**100**

Source: Field Survey, June 2015

It is clear from Table 4.4 that majority of respondents engaged in farming as their main source of livelihood (50%). Gathering, processing and marketing of NTFPs was identified as another source of livelihood being 30%. The findings also revealed that Hunting and gardening are conducted by 5% each of respondents. Another 5% engaged in petty trading. The least patronized of livelihood activities was that of fishing, representing 2%.

The experts' interview conducted also revealed that crops production, animal husbandry and gathering are the dominant livelihood sources in the Asutifi North District. The institutional interviews therefore confirmed the findings from the respondents who responded by acknowledging crops, animals and gathering as major livelihood sources.

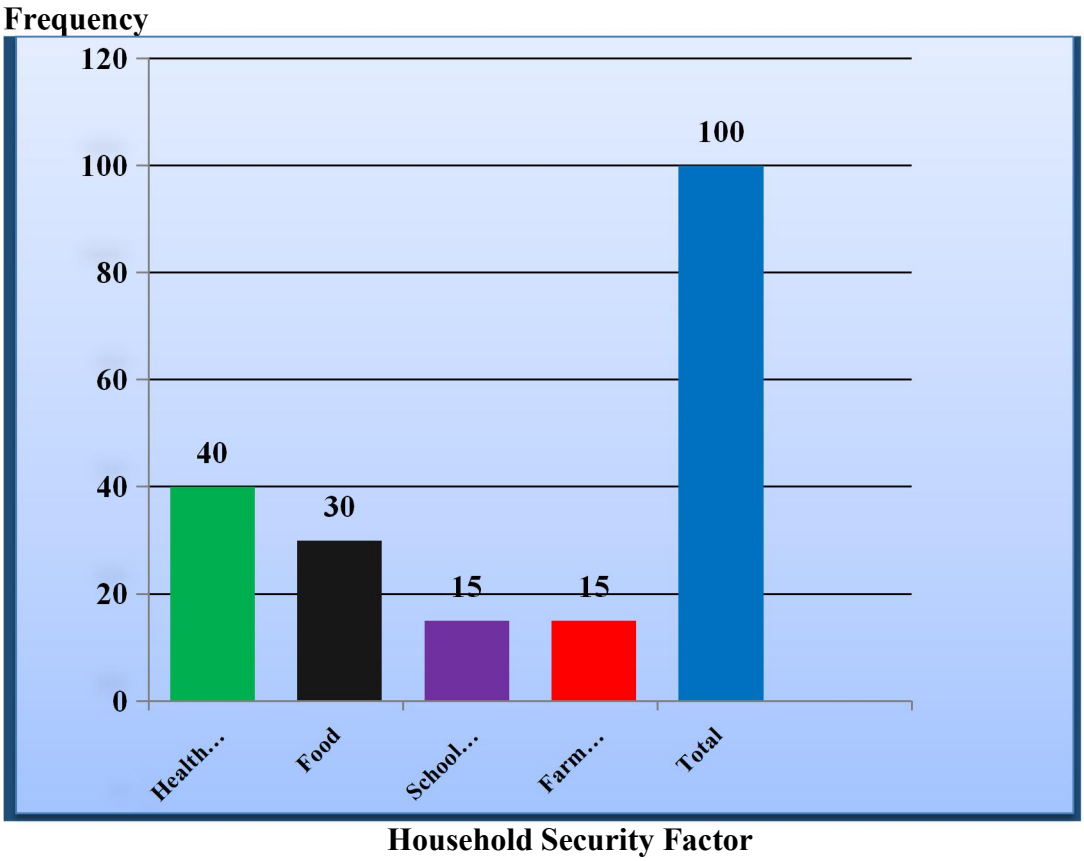
The findings confirm the opinion expressed by Chamber (1999) who contended that members of the family are seeking and finding different sources of livelihood to contribute in supporting the family in diverse ways. The WHO (2002) report supports the findings that agricultural related activities including crops and livestock production has been the mainstay of rural livelihood source.

However, the source of livelihood in the District besides farming and gathering as dominant sources of livelihood include exploitation of NTFPs, comprising medicinal plants, materials for construction of houses, bush meat, wild food and supplementary livestock feeding. It was further revealed that Men explore forest resources for medium and large scale uses for (housing construction, charcoal burning, medicinal purpose and basic farm implements). The gathering of firewood, processing, fruits as well as medicinal plants were also conducted by Women, mostly on small scale.

4.3.2 Contribution of the Livelihood Option to Household Security

Household security factors comprising: health care, food, school fees and farm inputs are catered for by farming and gathering, and others as most significant livelihood sources in the community. Figure 4.1depicts the findings.

FIGURE 4.1 LIVELIHOOD CONTRIBUTIONS TO HOUSEHOLD SECURITY



Source: Field Survey, June 2015

The data show that majority of the respondent placed priority on their health care, 40% of respondents acknowledged this. It was also evident that food as basic commodity to keep the family life was identified as another priority representing 30% of respondents. On payment of school fee, 15% used their livelihood for such, while another 15% used their resources on farm inputs to engage in agricultural activities.

This view is also confirmed by WHO (1997) who pointed out that, the issue of health in the world communities particularly third world countries is better

appreciated than before, with a lot of spending from the public coffers channeled into providing health infrastructure, training of physicians, drugs and sensitization.

4.3.3 Summary and Conclusion

It is an established fact that the Asutifi North District is predominantly agricultural in nature. This is because a considerable number of respondents are associated with crop and livestock production. Gathering and manufacturing was equally identified as a major source of livelihood.

The contribution of livelihood security to household development has been identified to include: the provision of health care, food, school fees and farm inputs. The significance of health is recognized as most respondents priority the health status of their household. It is therefore gratifying to note that Asutifi North District is capable of providing a healthy labour force for the development of the District and the country at large.

4.4 CAPACITY OF NON-TIMBER FOREST PRODUCTS (NTFPS) TO CONTRIBUTE TO IMPROVED LIVELIHOOD AND SOCIAL DEVELOMENT

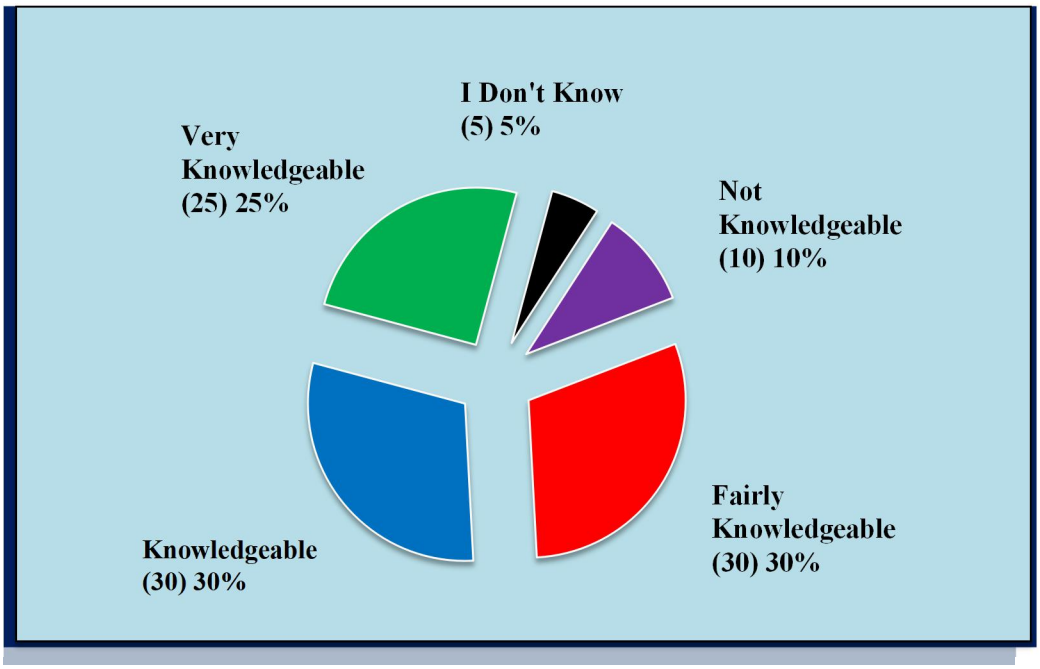
The study sought to also find out the capacity of Non-Timber Forest Products (NTFPs) and how they influence rural livelihood and social development. Analysis has been made around the issue of community knowledge of NTFPs,

an assessment of NTFPs in the community forest and reserves as well as the process of extraction, processing and marketing. The contribution of NTFPs to income and other benefits is also analyzed.

4.4.1 Community Knowledge of NTFPs and Availability of Community Forest Reserve

The consumption of NTFPs as livelihood sources presupposes that some amount of capacity of its uses and utilization are known by extractors, processors, marketers and users alike. To confirm this assertion, the study analyzed data which is shown in figure 4.2.

FIGURE 4.2 RESPONDENTS KNOWLEDGE ON NTFPs



Source: Field Survey, June 2015

It is evident from figure 4.2 that respondents have considerable degree of knowledge about NTFPS. The data indicates 5% of respondents not having an idea about NTFPs with 10% citing they are not knowledgeable about NTFPs. The rest 30% of respondents have fair knowledge about NTFPs with another 30% also indicating they are knowledgeable about NTFPs. In probing further 25% cited they are very knowledgeable about NTFPs. Respondents underscored their understanding of NTFPs by indicating the functions they play in rural households, agro-forestry and community forest production and how they sustain livelihood and life. These functions include food security, forest medicines, housing, musical instrument, income generating by gathering, processing and trading extractives products such as leaves and fruits. It also includes materials for performing rituals and sacrifice.

It was obvious from the study that the communities' forest in the Asutifi North District are known to abound with materials for constructions of houses, medicinal plants, wild fruits, bush meat and supplementary livestock feed. Materials for the construction of musical instruments and the performance of rituals and sacrifice were cited to be the least in the communities' forest. The view of respondents on NTFP was supported by Ros-Tonen and Wiersum (2005) when they emphasized that NTFPs could be all tangible animal and plant products other than industrial wood, coming from natural forests, including managed secondary forests and enriched forests.

4. 4.2 NTFPs Extraction, Processing and Marketing

The extraction and processing of NTFPs constitute a critical aspect of the path way to the development and value addition of NTFPs. The study revealed that, locally, community members developed indigenous ways of extracting and processing various form of NTFPs. Table 4.5 gives a detail account of the various form of NTFPs, mode of extraction and processing of the various types.

TABLE 4.5 EXTRACTION & PROCESSING OF VARIOUS TYPES OF NTFPs

Type of NTFPs	Indigenous method of Extraction & processing	Frequency of response	Percent
Construction Materials	Grass harvested with sickles and weaved with fiber into roofing materials	20	20
Medicinal plants	• Back of trees, roots, leaves are harvested with the use of cutlass and prepared as concoctions	25	25
Energy Materials	• Dry branches of trees are cut off as firewood • Branches of trees are also used to make charcoal through the process of combustion	30	30
Wild Food	• Honey is extracted by using fire to scare bees away, and container is therefore used to collect the honey	15	15
Materials for Rituals & Sacrifice	• Trees such as Baobab/ Nyamedua is used as shrines where they believe the ancestors are found there. Cowries and white cloths are tired to the tree, with period of sacrifice offered. • Some fruits. e.g black barriers are boiled and drank believing that it scares bad spirits away	10	10
Total		**100**	**100**

Source: Field Survey, June 2015

The data suggest that 30% of respondents' dry branches are used as fuel, and charcoal burning as well. The data also show that 25% of respondents used back of tress as medicinal plants. It was also revealed that 20% of respondents used NTFPs as construction materials. Furthermore, 10% of respeondents cited trees such as Baobab/ Nyamedua has been used as materials for rituals & sacrifices. The findings of the study confirmed the view held by Falconer (1992) who noted that, the reliance on NTFPs including gathering, processing and marketing had been supplied to markets.

4.4.3 Contribution of NTFPs to Income and Other Benefits

The contribution of livelihood to individuals and households has been a major course of concern, especially in the developing community. The significance of NTFPs is recently appreciated than before. The income source of most communities in Ghana, particularly in the rural settings has their livelihood diversified with NTFPs constituting a greater proportion. Tables 4.6 provide details on the contribution of NTFPs to individual annual income.

TABLE 4.6 CONTRIBUTIONS OF NTFPs TO INDIVIDUAL ANNUAL INCOME

NTFPs	Annual Income Range						
	1-20 GHC	21-30 GHC	31-40 GHC	41-50 GHC	51-60 GHC	61-70 GHC	Total
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Materials for construction of houses	10	5	2	1	0	0	**18**
Bush Meat	5	2	2	1	0	0	**11**
Wild food	20	2	2	2	0	0	**25**
Materials for rituals/ sacrifice	5	1	0	0	0	0	**6**
Supplementary livestock feed	5	1	0	1	0	0	**7**
Medicinal plants	20	3	3	0	0	0	**26**
Material for construction of musical instrument	5	1	1	0	0	0	**7**
Total	**70**	**15**	**10**	**5**	**0**	**0**	**100**

Source: Field Survey, June 2015

The findings show that 70% of respondents accumulate annual income (1-20GHC) from materials for constructions, bush meat, wild food sacrifice, supplementary feeds, musical instrument and medicinal plants. The data also indicate that 15% of respondents get 21-30 GHC as annual income from NTFPs, whereas 10% accumulate 31- 40 GHC as their income from NTFPs. More so, 5% of respondents obtain 41-50 GHC as annual income from NTFPS. It was revealed further that there was no income obtained by respondents in the income range 51-70GHC as annual accumulation of income. This implies that, NTFPs contributions to households have been minimal. The reason could be largely as a result of insufficient market linkages for NTFPs.

It was established that medicinal plants have been the major source of annual income as indicated by respondents 26%. The study confirmed the view held by Andel, (2006) who stated that rural people used grass and bamboo tree for the construction of their houses. The findings were also synonymous to Falconer (1992) who noted that, tree branches and grass have been used to build houses. The findings also bring to light the work of Andel (2006) who suggested that fuel including firewood and charcoal contribute to residents' annual income. It is refreshing to note that, data from the institutions interview indicates that NTFPs contributes significantly to household income security.

4.4.4 Summary and Conclusion

It was revealed that, respondents have a considerable knowledge about NTFPs. The findings indicate 30% of respondents have fair knowledge about NTFPs with another 30% also indicating they are knowledgeable about NTFPs. In probing further 25% cited they are very knowledgeable about NTFPs. The findings suggest that 30% of respondents in the District used charcoal and fire woods as their source of energy. The least constituting the minority representing 10% indicated trees such as baobab are used as shrine where their ancestors reside. The findings of the study confirmed the view held by Falconer (1992) who noted that, the reliance on NTFPs including gathering, processing and marketing has been supplied to markets for income generation.

4.5 COMMUNITY MANAGEMENT SYSTEM FOR NTFPs

This section discusses the key issue on traditional institutions and organization for NTFPs, on the following themes: perceived NTFPs resource management systems by formal institutions; management systems 20 years ago; how resources were obtained for management; contemporary NTFPs management systems; capacity required for contemporary NTFPs resources management and challenges/problems with contemporary management systems.

4.5.1 Community Traditional Institutions and Organization for NTFPs

In order to ascertain the contribution of traditional institution and organization for NTFPs, the study sought to establish the growing institutions which have over sight responsibility in the management of NTFPs. Table 4.7 presents a clearer views.

TABLE 4.7 COMMUNITY TRADITIONAL INSTITUTIONS FOR NTFPs MANAGEMENT

Institutions	Responsibility	Frequency of Responses	Percent
Chieftaincy	• Administrative : governing the people • Judiciary: Instilling discipline	50	50
Landlord	• Link between the living and the dead • Assuming control as the owner of the land	30	30
Clan Head	• Take care of Clan assets e.g. land/ forest resources	5	5
Queen mother	• Political head of women	5	5
Family/household head	• Leads and take care of family resources	10	10
Total		**100**	**100**

Source: Field Survey, June 2015

The data show that Chieftaincy institution is the single most important institution which assumed among others administrative and judiciary functions such as settlement of disputes in the management of NTFPs in the Asutifi North District, 50% of respondents acknowledged this. The office of the landlord was also cited for contributing significantly in the management of NTFPs. Also, 30% of the respondents cited this view. Moreover, 10% of respondents believed Household/ Family head that are in charge of managing the family affairs including its resources; an institution with a stake in the management of NTFPs. Also, 5% acknowledged the position of Queen mother, with another 5% also citing and Clan Head for playing a part in the management of NTFPs.

The findings of the study brings to light the work of Kasanga, (1994) who noted that the chief assuming the highest position in the hierarchy of traditional institutions plays a pivotal role in the management of NTFPs. Millar, (2003) work on the contribution of the spiritual world in the management of NTFPs was also confirmed by the study which revealed that the Landlord serves as a link between the living and the spiritual world by pacifying the gods to continuous protecting their assets including NTFPs. The study further revealed that the office of the Queen mother as noted by Millar (2004) equally was identified as influencing community process by highlighting the contribution in the management of NTFPs. The significance of Clan head recognized by Kasanga (1994) in the management of community resources was also confirmed in the study as clans head is identified as the person holding family lands for the benefits of the entire clan.

4.5.2 Perceived NTFPs Resource Management System by Formal Institution

The study equally extensively gathered data on the formal institutional approach in the management of NTFPs. The growing importance of formal institution in either taking over or complementing traditional institution necessitates the need to analyzing data on it. Table 4.8 provides a detailed presentation.

TABLE 4.8 PERCEIVED NTFPs RESOURCE MANAGEMENT INSTITUTIONS

Institutions	Extent of Management				Total
	Don't Know (%)	Not Present (%)	Present but do not manage (%)	Present and Manage (%)	
MOFA	02	23	30	45	**100**
EPA	13	57	10	20	**100**
GNFS	12	83	05	00	**100**
DA	10	25	25	40	**100**
NGOs	05	10	05	80	**100**
NADMO	05	60	27	08	**100**
FSD	06	24	10	60	**100**

Source: Field Survey, June 2015

The data presented in Table 4.8 revealed that, there are indeed considerable number of formal institutions who play a leading role in the management of NTFPs. Majority of the respondents (80%) admitted that, there are considerable number of NGOs in the District which take part in the management of NTFPs especially as livelihood source, with only 5% indicating there are no NGOs, while another 5% also noted they have no idea about the presence of NGOs. It was also established FSD is present and functions effectively, (60%). Still on FDS, 6% cited they have no idea about FDS, while 24% acknowledged FDS are not present, with 10% believing FDS is present but does not manage NTFPs. Also, 83% of respondent indicated the GNFS is not present, while 15% indicating they have no idea with respect to GNFS. The DA were also identified for being present and functioning in the communities (40%), while 25% also believed they are indeed present but donot manage NTFPs and not present at all, respectively. The institutions, EPA was widely noted, 57% of respondents for not being present. MOFA was cited by 40% of respondents for being present and managing NTFPs, with 60% confirming that NADMO is not present in their communities. The findings indicated that NGOs, FSD, MOFA and DA are major formal institutions in the management of NTFPs in the Asutifi North District.

4.5.3 Management System 20 Years Ago

There are a number of indigenous ways in the management of NTFPs. These include; norms, beliefs systems, and taboos, among others. Moral sanctions and disciplines have been contributing to the management of NTFPs. The

management of NTFPs equally received institutional prominence. The resilience of these belief systems, totems, taboos, and moral sanctions have stood the test of time in the management of NTFPs. The table below indicates the traditional management systems.

TABLE 4.9 MANAGEMENT SYSTEMS 20 YEARS AGO OF NTFPs

Management Systems	**Category of Respondents (%)**			**Total**
	Grand parents	**Parents**	**Children**	
Moral sanctions and fines	4(67%)	2(33%)	00	**6 (100%)**
Rules and regulations	5(38%)	4(31%)	4(31%)	**13(100%)**
Restricted to traditional protected area	21(46%)	20(43%)	5(11%)	**46(100%)**
Adherence to taboos and totems	16(46%)	13(37%)	6(17%)	**35(100%)**

Source: Field Survey, June 2015

The Table 4.9grandparents, parents and children's views were solicited on the management systems. Responses varied from generation to generations. Out of the 46 respondents who indicated Restricted to traditional protected as management system 20 years ago, 46% are grandparents, 43% parents and 11% children. On Adherence to taboos and totems 46%, 37% and 17% out of the 35 respondents were recorded for grandparents, parents and children's respectively. The table also shows out of 13 respondents 38%, 31% and 31% grandparents, parents and children respectively indicates Rules and regulations. While for moral sanctions and fines as a management system 20 year ago, 67% of respondents were grandparents, 33% parents and none for children.

It is evident from the table that restrictions to traditional protected area and Adherence to taboos and totems were the main modes of managing NTPFs 20 years ago as indicated by the grandparents and parents. The finding also revealed that these management systems are unpopular to children.

The findings is synonymous to view held by Millar (2003) who contended that many local communities and institutions have been managing their forest resource effectively, creating institutional arrangement to ensure the basic protection of forest and Wildlife and the enforcement of access and use rights. The findings also reflect the work of Kasanga (1994) who noted that traditional management systems which are cost effective have contributed in the management of land use and labour activities.

4.5.4 How Resources Were Obtained and Management

Resource remain central in the process of development, this is because; resources play a central role in ensuring processes. Table 4.10 provides a detailed account of how resources were obtained and managed.

TABLE 4.10 HOW RESOURCES WERE OBTAINED FOR NTFPs MANAGEMENT IN 20 YEARS AGO

Resources	Category of Respondents (%)			Total
	Grand parents	Parents	Youth	
Community contribution	23(47%)	15(31%)	11(22%)	**49(100%)**
Fines from offenders	14(48%)	15(52%)	00	**29(100%)**
Support from GOs and NGOs	00	7(64%)	4(36%)	**11(100%)**
Proceeds from sale of community resources	00	4(36%)	7(64%)	**11(100%)**

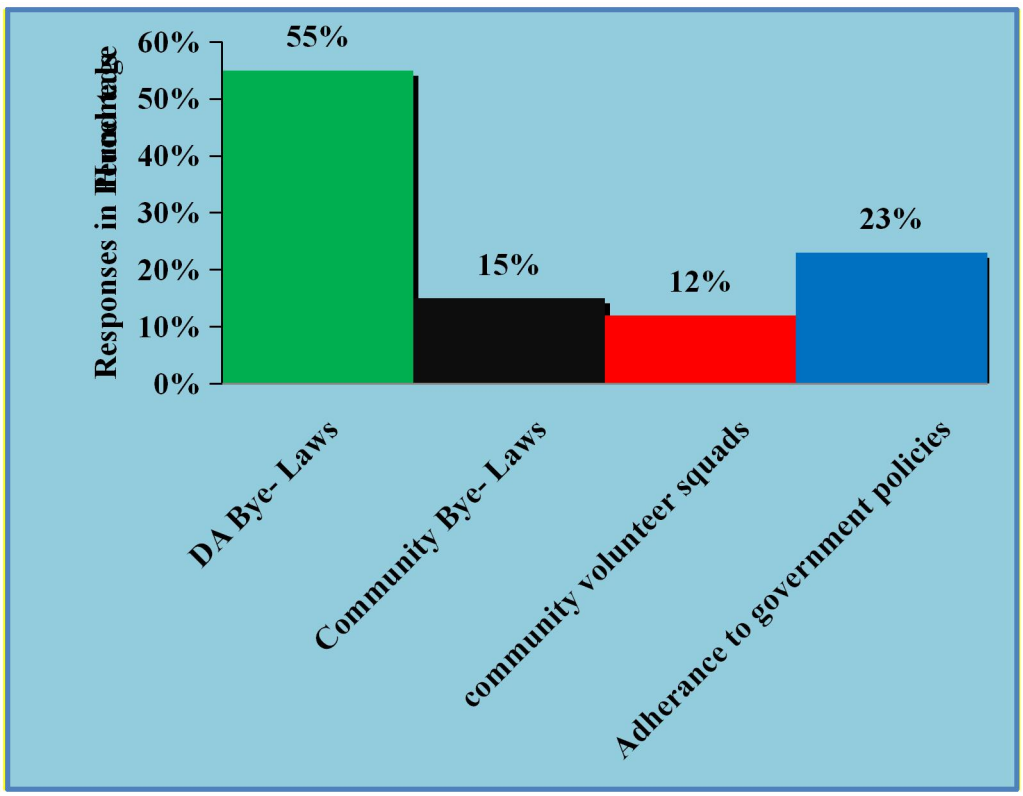
Source: Field Survey, June 2015

From Table 4.10 it is obvious that respondents who indicated Community contribution as the main source of resource for the management of NTFPs 20 year ago, 47% were grandparents,31% parents and 22% children out of the 49 respondents. On the other hand out of the 29 respondents who indicated fines from offenders as a main source of resource for the management of NTFPS 20 years ago, 48% are grandparents, 52% parents and none for children. Also, of the 11 respondents from each category who indicated Proceeds from sale of community resource and Support from GOs and NGOs as source of resource for management of NTFPs with high percentages were recorded for parents (64%) and children (64%) and none for grandparents. The sale of community resource to manage NTFPs was not practice and also support from NGOs has also been a modern concept, this was not known by grandparents explaining why there was no response.

4.5.5 Contemporary NTFPs Management Systems

The management of NTFPs which was dominated by indigenous approaches in the past 20 years has recently been over shadowed by contemporary management system. This therefore necessitated the study to investigate this view by gathering information for analysis. Figure 4.3 provides an over view of contemporary NTFPs management systems.

FIGURE 4. 3 CONTEMPORARY NTFPs MANAGEMENT SYSTEMS



Source: Field Survey, June 2015

From Fig. 4.3 the data suggest that Bye- Laws made by the DA (ban against tree cutting, obtaining permits before cutting trees, etc.) have featured high (55%) in the list of contemporary management systems. It was also revealed that 23% of respondents share the view that adherence to government policies, including youth in forestation, ban on logging, and so on are integral part of contemporary management system of NTFPs. Further, the findings pointed out that 15% of the respondents cited Bye-Laws made by the community, with the remaining 12% constituting the minority acknowledge community volunteer squads in the management of NTFPs. The findings reaffirmed the argument that, NTFPs policies are concentrated in the hands of state, while

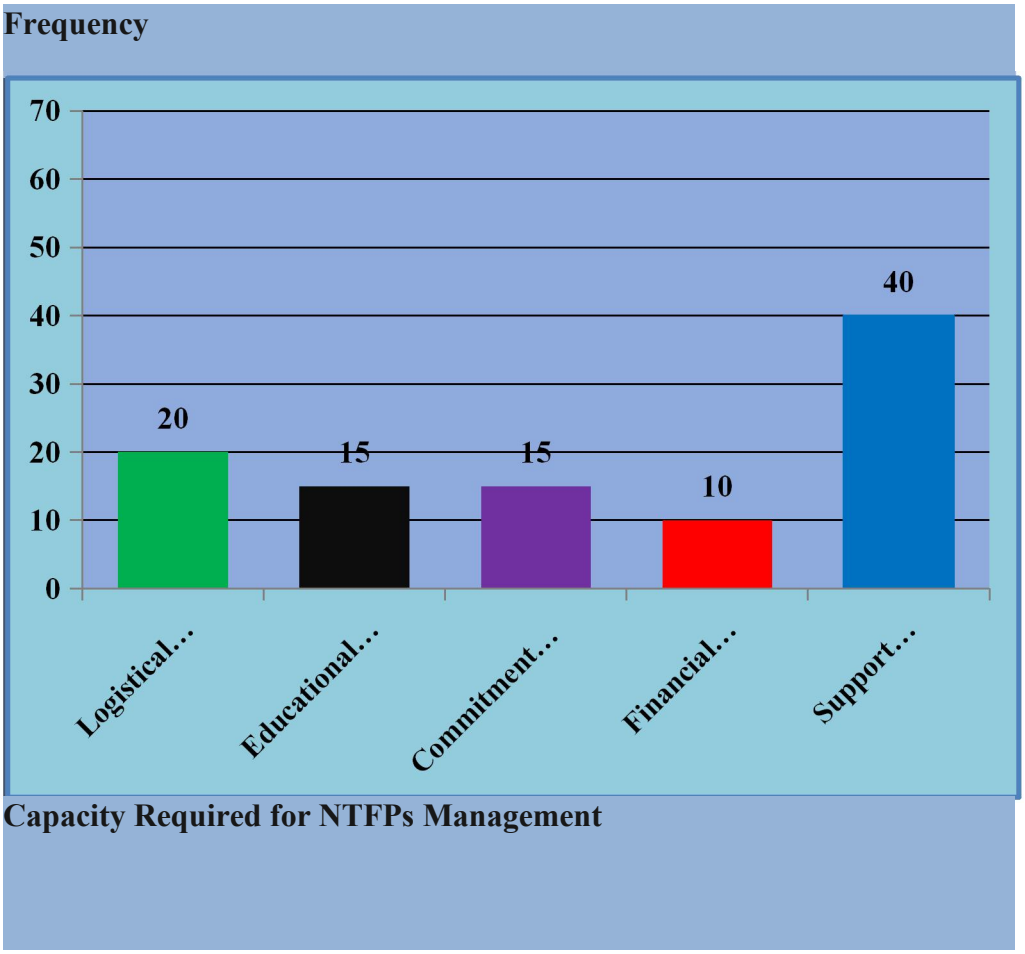
marginalizing rural people who have depended on community resources for generations (Wardell, 2002).

Also, from the institutional interview, it was evident that, the District Assembly assumed greater responsibility in the management of NTFPs by introducing bye laws aimed at protecting forest cover such as wild food including wild life and trees with high medicinal and economic importance.

4.5.6 Capacity Required for Contemporary NTFPs Resource Management

Capacity has been central in the management of NTFPs. It ranges from logistical, financial, quality of human resources as well as training and education. It is based on this background that the study collated data on capacity required for contemporary NTFPs management. Figure 4.4 provides a detailed explanation.

FIGURE 4.4 CAPACITIES REQUIRED FOR CONTEMPORARY NTFPSs MANAGEMENT



Source: Field Survey, June 2015

From the Table above, majority (40%) of respondents indicated support-incentive package would go a long way to building capacity in order to enhanced management system for NTFPs, while 20 believed that, logistical support would ensure effective management of NTFPs. Moreover, 15 of the respondents cited "educational training" that would broaden the horizon of the people to efficiently manage NTFPs, with another 15 arguing that

"commitment by community members" as the best approach to capacity buildings in the management for NTFPs.

The remaining 10 constituting the minority were of the view that "financial support" would enable institutions and other stakeholders to build capacity for NTFPs management. The implications of the findings have been that, a holistic approach will help in guaranteeing effective management systems of NTFPs.

4.5.7 Constraints with Contemporary Management System

There are degrees of variant concerns of challenges with regards to contemporary management systems for NTFPs. The constraining factors in the past 20 years are recently appreciated than before.

TABLE 4.11 CONSTRAINTS WITH CONTEMPORARY MANAGEMENT SYSTEM

Challenges	**Frequency of Responses**	**Percentage**
Increased in population	30	30
Over dependency on NTFPs for livelihoods	35	35
Limited alternative livelihoods opportunities	20	20
Political interference	2	2
Limited knowledge on NTFPs / its management	3	3
Uncoordinated policies and poor enforcement by users, government agencies and traditional council	7	7
Uncooperative youth and community members	3	3
Total	**100**	**100**

Source: Field Survey, June 2015

Table 4.11 depicts the constraining factors associated with contemporary management systems. From the table, 35% cited over dependency on NTFPs as livelihood source as a major challenge associated with the issue of contemporary management. In addition 30% of the respondents indicated increase in population as a challenge to contemporary management system. Further,, 20% of respondents indicated limited alternative livelihood sources opportunities as militating factors in the management of contemporary NTFPs

management systems. The issue of limited knowledge in NTFPs as a challenge in contemporary management of NTFPs was indicated by 3% of respondents. The data show that 7% of respondents cited poor policies coordination and enforcement by users, government agencies and traditional council. Also, 2% of the respondents on their part indicated political interference as constraining factor in the management of NTFPs contemporary. The study is consistent with the work of Falconer (1992) who argues that forest reserves have been converted to agricultural production as a result of increase in population.

From observation, it was evident that, the increasing in population is far defeating initiatives and efforts designed to managing NTFPs. This is because, institutional bottleneck such as human resources deficits, logistical constrains is making increasing difficult for authorities to couple with the challenge population pressure has on NTFPs.

4.5.8 Summary and Conclusion

It is worthy to note that, chieftaincy institution was identified as the most dominant traditional institution in the management of NTFPs,, whereas NGOs also listed on the apex of formal institutions in the management of NTFPs. Further, management systems for the past 20 years show that moral sanctions were identified by grandparents and parents, while children have no idea. This therefore implies that this management system is alien to the youth (children). However, they acknowledged rules and regulations for being the dominant and effective system.

Community contribution, fines from offenders, support from GOs and NGOs and proceeds from the sale of community resources were identified as sources for obtaining resources for NTFPs management systems. It was also ascertained that the formulation of Bye- Laws by DA and adherence to government policies were cited as contemporary management systems. Further findings indicate that support such as incentive package will enhance capacity for the management of NTFPs. Over dependence on NTFPs as livelihood source, population boom and limited alternative livelihood opportunities feature on top of the list of constraining factors to NTFPs management contemporary.

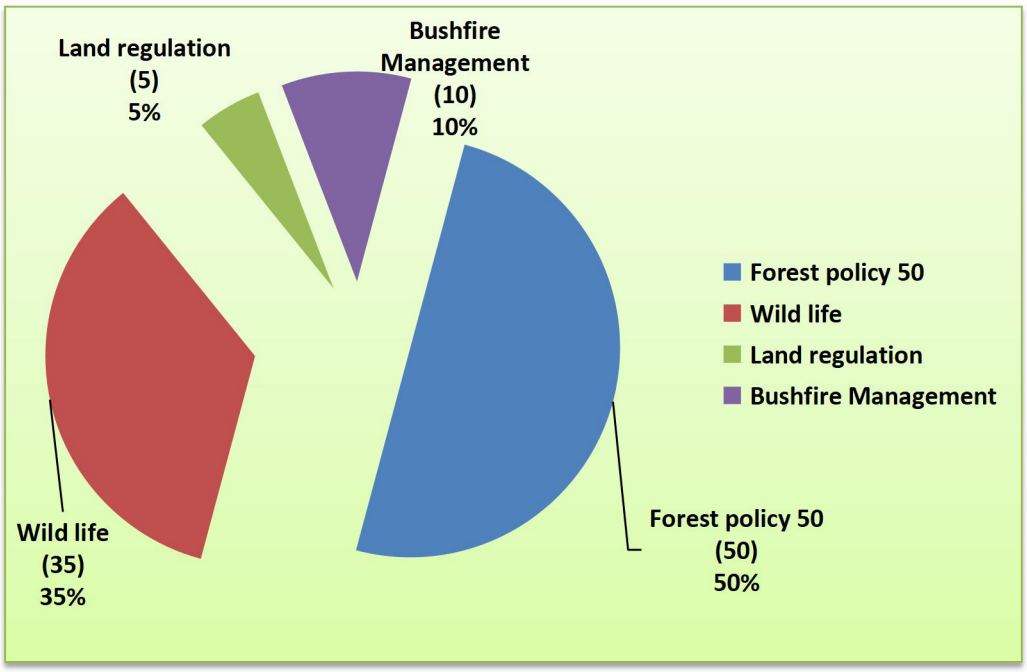
4.6 NON- TIMBER FOREST PRODUCTION MANAGEMENT AND POLICY ISSUES

Policy serves as a guiding principle in the management of NTFPs. It is in view of this emerging relevance of policy in the management approach to NTFPs that, the study saw the need to investigate the policy issue concerns including, institutions responsible for policy initiation, effectiveness of policy, policy constrains, among others.

4.6.1 Knowledge of Government Policies on NTFPs Resources Management

In order to address the policy issues in relation to NTFPs resources management, the study solicited information on the knowledge and awareness of residents in the Asutifi North District. The figure 4.5 provides adequate information on the knowledge of government policies by respondents for the management of NTFPs.

FIGURE 4.5 KNOWLEDGE OF GOVERNMENT POLICIES ON NTFPS RESOURCES MANAGEMENT



Source: Field Survey, June 2015

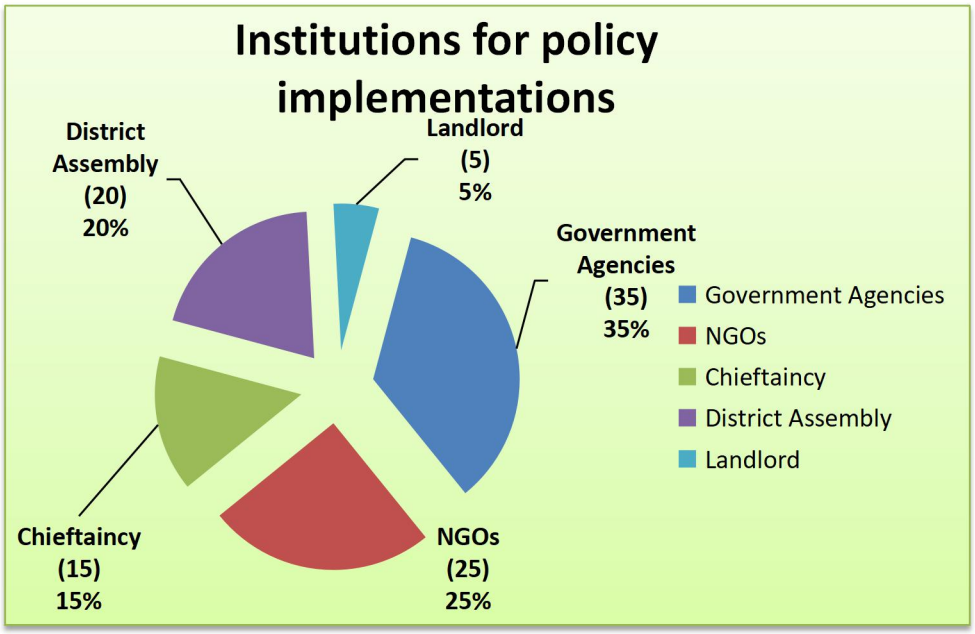
It is obvious from Fig. 4.5 that majority of the respondents have adequate knowledge on government policies by specifically indicating forest policy

(50%) with another 35% respondents citing wildlife policies. Further findings suggest that 10% of respondents indicated Bushfire management and the rest 5% of respondents cited land regulations. The findings therefore confirm the position of Mohammed (2007) that the management of government lands is based on forestry code which defines the legal framework for the exploitation of resource.

4.6.2 Responsible Institution for the Implementation of Policies

There are considerable numbers of institutions in the management of NTFPs. These include community / traditional institution and formal institutions. Institutions have an over sight responsibility in designing policies, programme for NTFPs management (Falconer (19927). The study therefore gathered data on responsible institution for the implementation of policies. Fig. 4.6 gives detail information.

FIGURE 4.6 RESPONSIBLE INSTITUTIONS FOR THE IMPLEMENTATION OF POLICIES



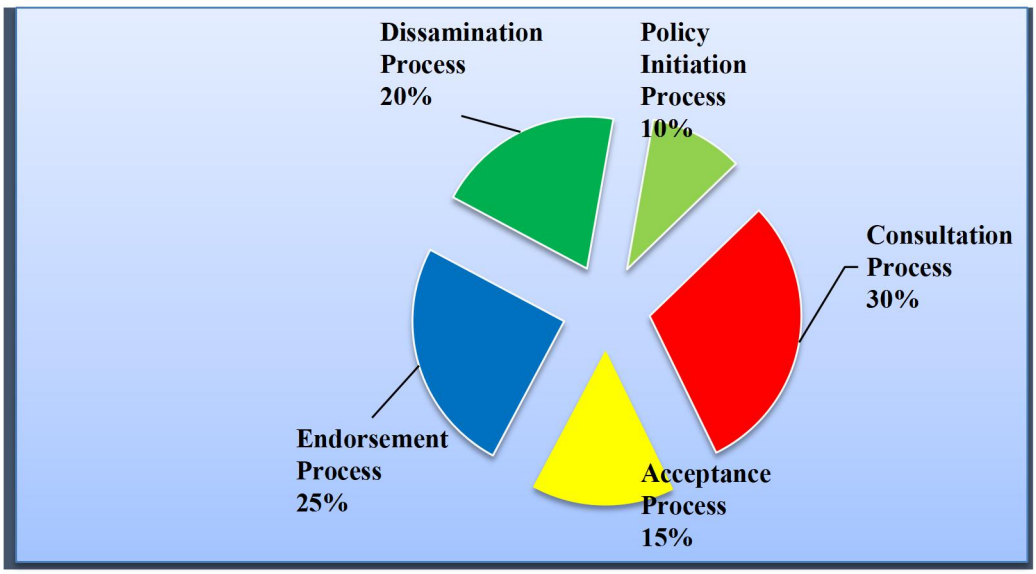
Source: Field Survey, June 2015

Fig 4.6 indicates that, Government agencies including FSD, MOFA play a lead role (35%) in the implementation of NTFP policies, 25% indicated NGOs play a pivotal role in the implementation of policies. Further,, 20% of the respondents noted the District Assembly plays a lead role in implementing policies to the later. The Chieftaincy institution which has lost most of its identity and power, though was identified for equally implementing policies, it is only 15% of the respondents who argue that chiefs assume such responsibilities. The remaining 5% of the respondents cited landlord for implementing policies.

4.6.3 Involvement in the Stages of Policy Formulation

The NTFPs management in the past has been increasingly condemned by some environmentalist for lacking credibility since it does not provide adequate engagement of all stakeholders, bases to guarantee sustainability through ownership (Agyeman, 1993). The neglect to community members in the Management of NTFPs is recently appreciated than before. The formulation of policies is therefore expected to be participatory in order to build consensus and successful implementation. The study therefore took an in-depth study to analyse the stages of involvement of communities in the policy cycle for NTFPs management.

FIGURE 4.7 STAGES OF INVOLVEMENT IN POLICY FORMULATION PROCESSES



Stages of Involvement in Policy Formulation Processes

Source: Field Survey, June 2015

The result shows that, 30% indicated they have been involved in the consultation stage of policy formulation, while 10% indicated they were part of the policy initiation. It further pointed out that 25% were part of the endorsement stage, while 15% noted they were part of the acceptance stage. The remaining 20% cited they were part of the dissemination stage. It is evident from the figure above that, majority of people are not involved in the initiation stage of policies. This could prove catastrophic since, actors could advance policies that may not go down well with the rural or community members.

This scenario brings to light the top-down approach to policy formulation which neglects the beneficiary groups in the initiation stages. The findings indicate that, 10% of respondents acknowledged, they have been part of policy initiation processes. The result from the analysis indicated that policy initiation processes is compromised, while consultation, dissemination and endorsement are prioritized.

4.6.4 Summary and Conclusion

The findings revealed that 50% of community members have adequate knowledge on policies with 35% of the respondents specifically indicating forest and wildlife policies in particular. Findings on institutional oversight for the implementation of policies revealed that government agencies including FSD and MOFA play a leading role in the chart of institutions in terms of implementing NTFPs policies. However, the decrease in the significance of

informal institutions like chieftaincy which were cited for contributing least in terms of the implementation of policies for NTFPs could negatively affect management systems, since sustainability would not be guaranteed at the community level.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This chapter presents a summary of the findings, conclusions drawn from these findings and recommendations made based on the research findings; contribution of None Timber Forest Products (NTFPs) to rural livelihood in the Asutifi North District. The summary, conclusions and recommendations are all in line with the research objectives which are reflected in the findings of the study.

5.2 SUMMARY OF FINDINGS

The first research questions as to do with the uses, potential uses and livelihoods options of NTFPs and how do they contribute to the livelihood security of rural communities of the Asutifi North District. The key findings revealed that NTFPs play an important role in rural livelihoods and economies in the Asutifi North District, processing and marketing of NTFPs is a key rural livelihood activity engaged in by farmers which contributes to household security in terms of provision of family health care, food, education and farming enterprise. However, NTFPs contribution to annual income of natural resource users is low mostly within the bracket of 1-20GHC. It therefore suggest that income generated by NTFPs is used to fill a cash shortfall.

The second research question had to do with what management system exists for NTFPs in rural communities in the Asutifi North District. The key findings revealed that Traditional institutions perform varied roles that are interrelated to natural resource management through the three generational analyse. The major findings showed that, 20 years ago, structural relationship, indigenous beliefs and practices were the modes of management. They are proving less effective today and not integrated into formal management system. These systems are found to be unpopular with children and therefore not adhered to in community NTFPs resource management. The children generation are however conversant with government policies and community by-laws as mode of managing NTFPs resource and have faith in government institutions and service providers and agencies in the management of NTFPs resources.

The third research question had to do with the current policy implications for the role of NTFPs in rural livelihoods in Asutifi North District. The key findings revealed that it was untrue that community institutions lack knowledge of existing government policies on natural resources and management issues, it is also revealed that communities and traditional authorities are less involved at the planning, initiation and acceptance stages of policies and programmes in relation to NTFPs resource management. It is also evident that the development of NTFPs and the implementation of sound management are severely restricted due to lack of regular documentation and record keeping of all NTFPs in the district. The findings revealed that Community institutions have considerable knowledge on government policies and related issues surrounding the management of NTFPs. However,

community members and traditional authorities are least involved in the initiation and acceptance stages of policies and programmes in relation to NTFPs resource management. Traditional institutions and systems lack the necessary capacity and resources for policy implementation, accounting for resistance in policy reforms due to attitudes, values and practices that might not be taking into consideration at the initiation stages of broad based policies such as forest and wildlife management policies. The study also revealed that there is no policy with specific emphasis on NTFPs that could have a strategy among others that allow for a spread of income year- round thereby filling in the income and food insecurity gaps that occur during the off season as a major issue.

The fourth research question has to do with how extraction, processing and marketing of NTFPs contribute to the livelihoods in Asutifi North District; The importance of income earning opportunities afforded by NTFPs to rural communities. The findings collaborates that the reliance placed on NTFPs gathering, processing and marketing depends not on the availability of NTFPs but also on the ease access to markets, trade and skills acquired. The study also revealed that participation in NTFPs trade constraints for poor rural households in the District includes poor linkages with urban markets, lack of coordination between different actors in the products chains, lack of business planning skills, other demands on household labour, limited access to financial capital, limited forest resources and poor access to appropriate labour saving technology.

5.3 CONCLUSION

The studies showed that community forest are known to abound relatively in materials for the construction of houses, medicinal plants, wild fruits, bush meat and supplementary livestock feed. The least found in the forest are materials for the construction of musical instrument and those for the performance of rituals and sacrifices. However, though these are relative abundance of these resources, it is worth nothing that the forest cover of the District is in the decline due to poor management practices and over exploitation of the resources. In addition, NTFPs contribution to annual income of natural resource users is low mostly within the bracket of 1- 20 GHC. Income generated from NTFPs is used to fill a cash shortfall, not to make improvement in family health and nutrition.

The study also revealed that participation in NTFPs trade constraints for poor rural households in the District includes poor linkages with urban markets, lack of coordination between different actors in the products chains, lack of business planning skills, other demands on household labour, limited access to financial capital, limited forest resources and poor access to appropriate labour saving technology. It was brought to fore that, century ago, indigenous belief and practices were the modes of NTFPs management, although these believe and practices stood the test of time in NTFPs management they are providing less effective today.

Community members have considerable knowledge on the available NTFPs in the District. Community's have high knowledge on natural resource management related policies and is attributed to activities of MOFA, Ghana National Fire Service, the Forestry Service Division and NGOs in natural resource management in the District.

The involvement of communities and traditional authorities in the formulation of natural resource management policies at the initiation stage, acceptance and evaluation processes was found to be low. They however, indicated challenges they accoutered in the implementation practices, the lack of funds to carry out education on policies, inadequate apprehension of the policy document and social ties as a constrain in implementing community guidelines for managing community NTFPs and natural resources in general.

5.4 RECOMMENDATIONS

1. Integrating traditional management systems into modern management systems of natural forest resource and NTFPs related management systems.

Traditional authorities have over the years managed natural forest resources including NTFPs through the use of religious beliefs, moral sanctions and a range of sacred and cultural practices. These local management systems which evolved over time have proved to be more effective and sustainable than other form of management. Building policies on these existing management systems

would ensure a holistic and sustainable natural resource management. Even though, there have been some efforts by the Ministry of Land and Forestry to initiate the wild life policy from the bottom up, thus involving the traditional authorities and communities in the policy formulation process. The findings from the study suggest that, they are least consulted at the planningor initiation, acceptance and evaluation stages of the policy formulation and implementation. In light of this, it recommended that ingenious management system should be integrated into modern management system.

2. Ensuring regular documentation/records keeping of all forest activities in the District.

The development of NTFPs and the implementation of sound management system is severely restricted due to lack of inventory data on NTFPs, both static and dynamic. The woodland inventory will provide basic information on the growth, productivity and the uses of NTFPs with the active involvement of indigenous communities. Though there were inventory taken of forest product in the 1990s, they were restricted to parts of forest and coastal belt of Ghana (Forestry Commission of Ghana, 1994). However, studies provided limited information required for an effective integrated forest management of natural forest. In view of this, it it recommended that; There should be bio data on NTFPs through mapping, surveying, planting programmes and plans for the sustained harvesting of NTFPs. There is also the need to maintained a continuous inventory of the resource, both in protected areas and outside, so as to monitor trends in population and distribution.

3. Ensure institutional strengthening and capacity building of forest sector industry.

Currently there is no structured approach for delivering support to grass roots level in terms of NR and NTFPs development. This places limitations to community level capacity to extract, process and preserve NTFPs in a sustainable manner. It therefore recommeded that: a well-structured channel to support communities in the extraction, process, preservation and utilization of NTFPs will go a long way to promote and add value to NTFPs development. It is further recommended that, enhancing improved coordination between agencies (Forest Service Departments of MMDAs, Forestry Commission, Traditional Institutions) responsible for NTFPs development. This will improve their capacity and positively contribute to efficient natural resource and NTFPs management.

4. Rebranding/adding value to NTFPs in the processing, preservation package and marketing as a sustainable livelihood option in the Asutifi North District.

The profitability of NTFPs marketing depends on the extent to which value is added to the NTFPs extracted. Government will have to create the conducive environment for the involvement of other players to develop the value chain along the NTFPs as a commodity. It is therefore recommended that appropriate technologies need to be developed/ introduced to rural based industries for the development of NTFPs along extraction, processing and

packaging. It is further recommended that; information flow within communities on local, national and international market linkages. This will increase NTFPs commercialization tendency of been successful in improving social justice, in terms of increasing transparency and equitable gains distribution and strengthening of markets. In addition trade networks need to be enhanced to maximize the potential of NTFPs and increase the economic benefits to natural resource users.

REFERENCES

Agyeman, V. K (1993). Land, Tree and Forest Tenure Systems: Implications for Forestry Development in Ghana. A Report Submitted to the African Development Foundation, USA. Forestry Research Institute, Ghana. 132p.

Adepoju, K . (2007). Economic Valuation of Non-Timber Forest Products (NTFPs), Nigeria.

Adhikari, B. (2004). Analysis Household characteristics and forest dependency: evidence from common property forest management in Nepal Salvatore Di Falco1, Jon Center for Ecology, Law and Policy, Environment Department, University of York, Heslington, York YO10 5DD, UK Ecological Economics Vol. 48 pp. 245– 257.

Andel, (2006). Non-timber forest product and the value of wild plants. The Netherlands.

Angelsen A. and Wunder S., (2003). *Exploring the Forestry-Poverty Link: Key Concepts, Issues and Research Implications*. CIFOR Occasional Paper No. 40. Center for International Forestry Research, Bogor, Indonesia.

Apusigah, A. A. (2004). Empowering Ghanaian Women for Community Development: Revising the two imperatives of the Capital and the Strategies. Ghana Journal for Development Studies. Vol. 1, pp 4-24.

Aramde, F., (2006). Diversity and socioeconomic importance of non-timber forest products of menagesha sub forest area. Central Ethiopia. MSC thesis. Wondo genet College of Forestry.

Arnold, j. and Ruiz Perez, M. (2001). Can non-timber forest products match tropical forest conservation and development objectives? .Ecological Economics (39): 437–447.

Arnold J, E, M & Ruez prez, M. (1998) The role of non-timber forest product in conserving and development. in wollenberg, Eandingles ,A.(eds.) (1998) Incomes from the forest. methods for the development and conservation of forest products for local community, PP.17 42.CIFOR.indonesia.

Arsema & Argatchew (2008). Value Chain Analysis for Bamboo Originating from Shedem Kebele, Bale Zone. Msc thesis, Addis Ababa University, Ethiopia.

Asutifi North District Assembly, (2014). *District Analytical Reporton Population & Housing* (2014).

Barfoot, J. (2006). A Study to Investigate the Potential for Development of Non-Timber Forest Products and Values from the Boreal Forests of Newfoundland and Labrador Memorial University of Newfoundland Botanical Garden.

Barraclough, S. L. & Ghimire, K B. (2005) Forests and Livelihoods: The Social Dynamics of Deforestation in Developing Countries, UNRISD, Macmillan, London, 259p.

Bonye, S. (2007). Harnessing Synergies: The Role of Traditional Institutions in Natural Resource Management in the upper East Region of Ghana; MPhil Thesis.

Brown, P. (1996). An Introduction to Research, Ash gate Limited, England.

Birhanu, D. (2004). Contribution of non-timber forest products to the rural household economy. Gore district, southwestern Ethiopia. Msc.thesis.SLU/WGCF.

Byron, N and M, Arnold, (1999). What futures for peoples of tropical forests? *World development* 27, 5:789-805.

Campbell B.M. & M. K. Luckert. (2002). Towards understanding the role of forests in rural Livelihood. uncovering the hidden harvest: Valuation methods for forest and woodland resources. Earth Scan. London.

Campbell, J.Y & Tewari, D. (1995).Developing and sustaining non timber forest products: some policy issues and concerns with special reference to India. *Journal of sustainable forestry*, (3),53-79.

Camey, D. (1998). Sustainable Rural Livelihoods: "at Contribution Can We Make? DFID, London.

Camey, D., Drinkwater, M., Rusinow, T., Neefjes, K., Wamnali, S. & Singh, N. (1999). Livelihoods Approaches Compared. A brief comparison of the livelihoods approaches of the UK Department for International Development (DFID), CARE, Oxfam and the United Nations Development Programme (UNDP), DFID, London, pp 1-19.

Carter, J. (2002). 'Recent experience in collaborative forest management approaches: a review of key issues., Paper prepared for the World Bank Forest Policy Review (draft), World Bank, Washington D. C.

Collaborative Forest Management Unit (CFMU) (1998). Guidelines for Collaborative Forest Management in Ghana: Collaboration in the Management of Non-timber Forest Resources in the High Forest Zone, FSD, Ghana, p. 1-24.

Chambers, R. (2002). Rural Development: Putting the Last First, Longman Scientific and Technical, Co published in the United State with John Wileyard Sons, Inc, New York.

Chambers, R. (2002). Rural Development: Putting the Last First, Longman S & T, New York.

Chihongo, A. W. (1992). Non-wood products. Pilot country study on non-wood forest products (NWFP) for Tanzania. Paper prepared for the Regional Expert Consultation on Non- Wood Forest Products for English-speaking African Countries, Arusha, Tanzania. Commonwealth Science Council, pp. 57

Cireli, M. T. (1996). Forestry Legislation in Ghana: Interim Report to the Government of Ghana, Republic of Ghana..

Clarke, J., Cavendisch, W. & Coote, C. (1996). Rural Households and Miombo Woodlands: Use, Value and Management. In: Campbell, B. (ed.) The Miombo in Transition: Woodlands and felt are in Africa. CIFOR, Bogor, Indonesia.

Cavendish, W. (2002). Quantitative methods for estimating the economic value of resource use to rural households. incifor, 2004. Forests for people and the environment. CIFOR Annual Report

Chikamai, B.N. & J. Kagombe, (2002). Country report for Kenya. In: *Review and synthesis on the state of knowledge of Boswellia spp. and commercialisation of Frankincense in the drylands of Eastern Africa*. KEFRI, Nairobi.

Clay, J.W. (1992).Some general principles and strategies for developing markets in north America and Europe for non-timber forest products: lesson from cultural survival enterprises, 1989,1990.advanced economic Botany.

Clarke, L. (2004).The state of art of non-timber forest products in West Africa.USAID Technical paper no.122. Washington DC.

Crook, R. & Manor, J. (1994). Enhancing Participation and Institutional Performance: Democratic Decentralization in South Asia and West, London: Overseas Development Administration.

CIFOR, (2004) Forests for people and the environment. CIFOR Annual Report.

Delacote, J., (2008). The Safety-net Use of Non Timber Forest Products .France.

DFID (1999) Sustainable livelihoods guidance sheets, London.

De Vries, P. (1991). A Research journey: On actors, concepts and the text. Long and Long (eds): Battlefields of Knowledge.

Duong, N.H., (2008).The role of non-timber forest products in livelihood strategies and household economics in a remote upland village in the upper river basin , the Phuong. *Journal of science and development*. 88-98.

Ebregt, A. (1995). Report on Tropical Rain forest and Biodiversity Conservation in Ghana. The Dutch Government Ministry of Foreign Affairs Directorate General for International Cooperation, the Netherlands.

Ellis, F. (1999). Rural Livelihood Diversity in Developing Countries: Evidence and Policy Implications. *Natural Resources Perspectives* Vol. 40, pp 1-8.

Falconer, J. (1992). Non timber forest product in southern Ghana. A summary. Series No 2. pp. 23

Falconer, J. (1995). The major significance of 'minor' forest products: The local use and value of forests in the West African humid forest zone .

FAO . (1995): Non- Wood Forest Products in Nutrition. Food and Nutrition Division. In Non- Wood Forest Products for sustainable forestry. Rome.

Falconer, J. (1997). Developing research frames for non-timber forest products: experience from Ghana .pp 143-160

Forestry Commission of Ghana (1994). Forest and Wildlife Policy. Forestry Commission. Accra. pp 1-7

FAO. (2006). Forestry and food security. FAO Forestry Paper 90.Rome: pp. 128.

FAO (2001). Small-scale Forest-based Processing Enterprises. Forestry Paper 79, FAO, Rome.

FAO (2000). Forestry and Food Security. FAO Forestry Paper 90, Forests, Trees and People Programme FAO, Rome.

FAO (1996) Synopsis of the Special Programme on Food Production in Support of Food Security in Low Income Food Deficit Countries (LIFDCs). Rome.

FAO, (1995). Non- Wood Forest Products in Nutrition. Food and Nutrition Division. In None Wood Forest Products for sustainable forestry. Indonesia,

FAO (1994). Non-wood News. An Information Bulletin on Non-wood Forest Products.

FAO (1993). The Challenge of Sustainable Forest Management: at future for the world's forests? Rome, pp.35.

FAO. (1992). legume trees and other fodder trees as protein sources for livestock. Animal production and health paper 102, Rome.

Farrington, J., Carney, D., Ashley, C. and Turton, C. (1999). Sustainable Livelihoods in Practice:

Farm Africa. (2008). A study on private sector linkage for bees products producers in Bale . APM Consult. Addis Ababa.

Gardei, S. (2006). Local valuation of forests in South West Ethiopia. Non timber Forest Products Research and Development Project in SW Ethiopia, Wageningen, Student research Series No. 6. Netherlands.

Getachew, M., Sjaastad, E., Vedeld, P., (2007). Economic dependence of forest resources: A case from Dendi District, Ethiopia. *Forest Policy and Economics*, 9: 916 – 927.

Godoy, R. & Contreras, M. (2001). A comparative study of education and tropical deforestation among lowland Bolivian Amerindians: Forest values, environmental externality, and school subsidies. *Econ. dev. and cultural change.* Vol. 49, pp. 555-574.

Hamida, H. (2004). The State of Women in Public Life in Quainoo, Samuel Ebow (ed) Africa Through Ghanaian Lenses. Vestal International Press: Binghamton, New York.

Hegde, R & Enters, T. (2000). Forest Products and Household Economy: a Case Study from Mudumalai Wildlife Sanctuary, South India. *Environmental Conservation.*Vol. 27(3), pp. 250 –259.

IUCN, (2005). A good practice guide; *Sustainable Forest Management, Biodiversity and Livelihoods.*

Jeannette, V.R. (2000). Non timber forest products (NTFP).Their role in sustainable forest management in the tropics. Theme studies, series1. Forestry and biological diversity support group, Wageningen, the Netherlands.pp.49.

Kasanga, K. (1994). Land Tenure System and Ecological Degradation in Northern Ghana: What Role for Local Authorities? The Royal Institute of Chartered Surveyors, 12 Great George Street, London.

Karma, R. (1999) Research Methods. SAGE Publications. New Delhi, India

Lindsey, W. (2008**).**Community-Based Natural Resource Management*:* Case Studies from Community Forest Management Projects in Ghana, Mexico, and United States America. *International Resource Management* Spring.

Martinez, F and, Beneficiario, C. (2004). Non Timber Forest Products in Colombia: review of constraints for effective commercialization. Australia

Meams, R. and Dulamdary, E. (2000) Sustaining Livelihoods on Mongolia! s Pastoral Commons. International Association for the Study of Common Property (IASCP).Retrieved from http://129.79.82.27/IASCP/Papers/meamsrO511 00.pdf. [17/07/2015].

Michon, G, & Deforesta, H. (1997). Agroforests:Pre-domestication of forest trees or true domestication of forest ecosystem? *Netherlands journal of Agriculture science*Vol. 45,(4) pp. 451-462.

Millar, D. (2004). Policies on Non Timber Forest Products: Where Do We Stand In Ghana? A paper presentation at the international workshop on Non Timber Forest Products organized by TREE AID in Burkina Faso.

Millar, D. (2003). Forest in Northern Ghana: Local Knowledge and Local use of Forest. Sahel- Sudan Environmental Research Initiative. Occasional Paper, No. 15. Copenhagen

Mitchell, B. (1999). Geography and Resource Analysis, 2d ed., John Wiley and sons, New York. Ministry of Lands and Forestry. Implementation Manual for Natural Resources Ministry of Lands and Natural Resources (2011) Natural Resources and Environmental Governance Programme. Technical Assistance. Ghana.

MLF (Ministry of Lands and Forestry) (1999) Implementation Manual for Natural Resources Management Programme - Phase One - 1999 - 2001, MLF, Accra, Ghana, p. 5.

Mohamed, A., (2007). the contribution of Non-timber forest products to rural livelihood in South West Ethiopia. Wageningen. The Netherlands.

Mulugeta, Tarekegn & Mats. (2003). Gum and Resin resources from some *Acacia*, Boswellia, and Commiphora species their economic contributions in Liban, South-East Ethiopia. *Journal of Arid Environments* 55 (2003) 465–482.

Neima, A., (2008). An analysis of socio-economic importance of Non-Timber Forest Products for rural households: Case study from Bale Mountains National Park,

Neumann and Eric, H., (2000). Commercialization of Non-Timber Forest Products: Review and Analysis of Research Center for International Forestry Research CIFOR, Indonesia

Nguyen, T. Q. (2006). Forest Devolution in Dak Lak, Vietnam: Improving Forest Management or Livelihoods of the Poor?

Olukoya, S. (2008). Development-Ghana: Women Ideal Shea Butter Producers. *The Story Underneath*. Retrieved from http://ipsnews.net/news.asp?idnews=42753.

Owusu, J. G. K. (2007) Revision of Ghana's Forest Policy. Forest Commission Symposia Series No. 3, Accra, Ghana, pp. 64-70.

Panayotou, T. and Glover, D. (1994). Economic and financial incentives for

biodiversity. conservation and development. Paper commissioned by IUCN for presentation at the regional conference on biodiversity conservation. Asian Development Bank.

Peters, C.M. (1996). The ecology and management of Non Timber Forest Resources. World Bank. Technical paper 322.the world Bank, Washington DC, USA.

Pierce, A.R. Shanley, P and Laird, S., (2002).*Tapping the Green Market: certification and management of non-timber forest products*. Earth scan, London. Pages 172-182.

Reinhard, F., and Admasu, A. (1994). Honey bee Flora of Ethiopia.Weikersheim, Vol. 3 pp. 1234-4.

Riadh, M. (2007). Assessing the Role of Non-Timber Forest Products in the Livelihoods of Communities Living Inside and Outside of Lawachara National Bangladesh.

Ros –Tonen, M.A.F., (2000). The role of non-timber forest products in sustainable tropical forest management. Holzals Roh-und Werkstoff 58: 96-201.

Ros Tonen and K.F. Wiersum (2005). The scope for improving rural livelihoods through non timber forest products .an evolving research agenda. *Forests, Trees and Livelihood* 1Vol. 5(2):129-148

Ruiz-Pérez and Arnold, (1995). Framing the Issues Relating to Non-Timber

Forest Products Research in a: Current issues in non-timber forest products research, Center for International Forestry Research, *Proceedings of the Workshop Research on NTFPÓ*

Hot Springs, Zimbabwe 28 August - 2 September 1995 Bogor, Indonesia.

Scherr, S.J., White, A. & Kaimowitz, D. (2004). *A new agenda for forest conservation and poverty reduction. Making markets work for low income producers*. Forest Trend sand Centre for International Forestry Research (CIFOR). Forest Trends, Washington, D.C.

Shackleton and Sheona, S. (2004). The importance of non-timber forest products in rural livelihood security and as safety nets: a review of evidence from South Africa Journal of Science .South Africa.

Shackleton, S. E. (2005). the significance of local level trade in natural resource products for livelihoods and poverty alleviation in South Africa. PhD thesis, Rhodes University. pp. 287

Shackleton, S. E. (2006). Household wealth status and natural resource use in the Kat River Valley, South Africa. *Ecological Economics. Vol.* 57, pp. 306 – 317.

Shackleton, S., Shanley, P. and O. Ndoye (2007). Invisible but viable: recognizing local markets for non-timber forest products Indonesia. International Forestry Review Vol. **9** (3), 2007 Cameroon.

Shanker and et al, (2004). Livelihood gains and ecological costs of NTFP dependence: assessing the roles of dependence, ecological knowledge and market structure in three contrasting human and ecological settings in south India Germany.

Shilligton, J. L. (2002) Non Timber Forest Product Gender and household in Nicaragua, a commodity chain analysis. Nicaragua.

Shylajan & G. Mythili (2007). Community Dependence on Non-timber Forest Products: A Household Analysis and its Implication for Forest Conservation. India.

Scoones, I. (1998) Sustainable Rural Livelihoods: A Framework for Analysis. IDS Working Paper 72, Brighton: IDS, pp. 3-22.

Taddese, W & Feyera, S. (2008) Sustainable Management and Promotion of Forest Coffee in Bale, Ethiopia. Addis Ababa.

Thomas, J., G. King & S. Kayetta (2005) 'People, perspectives and reality: Usangu myths and other stories, Tanzania',

Twumasi, P. A. (2001). Social Research in Rural community. Ghana University Press Accra.

UN (2000) Millennium Development Goals (MDGs), UN Fact Sheet, Geneva, Switzerland.

Ward, H. (2009).Resource nationalism and sustainable development: a primer and key issues, International Institute for Environment and Development, London. Retrieved fromhttp://www.iied.org/pubs/pdfs/G02507.pdf

Wardell, D.A. (2002). Historical Review of Development of Forest Policy in the Northern Territories of the Gold Coast Colony 1901-1957. *Sahel-Sudan Environmental Research Initiative*. Copenhagen.

Warner, K., McCall, E. and Garner. S. (2008). The Role of NTFPs in Poverty Alleviation and Biodiversity Conservation Proceedings of the international workshop on the theme, VietNam.

World Bank (2010). Education in Ghana: improving equity, efficiency and accountability of Education service delivery. Washington: World Bank.

World Bank, (2001). A revised forest strategy for the World Bank group. Technical report. World Bank, Washington D.C.

World Bank, (2002). A Source book for poverty reduction strategies: vol1, World Bank, Washington D.C

WHO, (2000). Food Security and Nutrition Survey. USA

WHO, (1997). *Subsistence Development: Five Years after the Earth Summit, Executive Summary.* Geneva: WHO Press

World Health Organisation, (2001) The Major Significance of Minor forest products, community forestry.

World Health Organisation, (2002). Non-Wood Forest Products: The way Ahead FAO Forestry Paper N 97

Wunder, S. (2005) 'Poverty Alleviation and Tropical Forests: What Scopes for Synergies? pp. 107 - 129.

Yin, R.K. (1993) Case Study Research. Design and Methods. Beverly Hill: SAGE.

APPENDICES

APPENDIX 1: UNIVERSITY FOR DEVELOPMENT STUDIES

RESEARCH AND GRADUATE CENTER, UDS,

TAMALE

NATURAL RESOURCE USERS QUESTIONANAIRE

A. INTRODUCTION

The study is aimed at exploring the capacity of Non-Timber Forest Products (NTFPs) for improved livelihoods, incomes and rural economies in Asutifi North District. It will also assess the management system in place for NTFPs in rural communities and how it can be enhanced for sustainable management and marketing towards improved rural incomes. The impact of NTFP policy and its implementation on the livelihood of rural communities and development of Asutifi North District will be examined under this study topic.

The survey is for MPHIL thesis.

Dear respondent, your confidentiality is guaranteed.

A. GENERAL INFORMATION

Name of interviewer…….

Questionnaire No……..

Date of interview……..

District……..

Community……...

Name of interviewee……

B. SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Sex……..

01 = Mal { } 02 = Female { }

2. Age……

01 = 15-25 { }

02 = 26-35 { }

03 = 36-45 { }

04 = 46-55 { }

05 = 56-65 { }

06 = 66+ { }

3. Marital Status……

01 = Married { }

02 = Divorced { }

03 = Single { }

04 = Widow { }

05 = Widower { }

4. Residential status:

01 = Native { }

02 = Migrant/settler { }

5. Status in the Community:

01 = Chief { }

02 = landlord { }

03 = Clan head { }

04 = queen mother { }

05 = Rain Maker { }

06 = Diviner { }

07 = Community Member { }

08 = Others Specify……..

6. Level of Education:

01 = Primary school { }

02 = Middle/JSS { }

03 = Vocational/technical { }

04 = Secondary school { }

05 = Post secondary { }

06 = Polytechnic { }

07 = University { }

08 = Non of the above { }

C. LIVELIHOOD SECURITY

7. What are the sources of livelihood/income in the community?

01 = Farming (crop + livelihood) { }

02 = Gardening { }

03 = Fishing { }

04 = Hunting { }

05 = Gathering, processing and marketing of NTFPs { }

06 = Petty trading { }

07 = Other Specify……...

8. Of the sources of livelihood mentioned in Q7 which of them are you engaged in?

01 = Farming { }

02 = gardening { }

03 = Fishing { }

04 = Hunting { }

05 = Gathering, processing and marketing of NTFPs { }

06 = Petty trading { }

07 = Other Specify……...

9. What is the contribution of the livelihood options mentioned in (Q8) to the household.

Tick where appropriate.

No.	Contributions to households
01=	Ability to pay for health care
02=	Purchase food for the family
03=	Pay children school fees
04=	Purchase farm implement
05=	Others specify

D. CAPACITY OF NON-TIMBER FOREST PRODUCTIONS (NTFPs) FOR IMPROVED LIVELIHOODS AND SOCIAL DEVELOPMENT

10. What is your understanding of NTFP?

……

……

5= Very knowledgeable; 4= Knowledgeable; 3= fairly knowledgeable; 2= Not Knowledgeable; 1= Don't know

Respondents' knowledge of NTFPs should be graded in the form as above.

11. What types of NTFPs exist in your community forest? Tick where applicable.

01 = Medicinal plants { }

02 = Materials for construction of houses (e.g. wood, straw, thatch) { }

03 = Bush meat { }

04 = Wild food { }

05 = Supplementary livestock feeding { }

06 = Materials for construction of musical instruments { }

07 = Materials for rituals and sacrifices { }

08 = Others specify……

12. Do NTFPs contribute to your income?

01 = Yes

02 = No

If yes proceed to answer question 14

13. If no why…….

14. Indicate the contribution of NTFP to your annual income. Tick where appropriate

No.	NTFPs	Amount earned in a year (GHS)
01=	Medicinal Values { }	a. 1- 20 GHS { } b. 21-30 GHS { } c. 31-40 GHS { } d. 41-50 GHS { } e. 51-60 GHS { } f. 61+ GHS { }
02=	Materials for the constructions of houses (thatch, poles, etc) { }	a. 1- 20 GHS { } b. 21-30 GHS { } c. 31-40 GHS { } d. 41-50 GHS { }

		e. 51-60 GHS { } f. 61+ GHS { }
03=	Bush meat { }	a. 1- 20 GHS { } b. 21-30 GHS { } c. 31-40 GHS { } d. 41-50 GHS { } e. 51-60 GHS { } f. 61+ GHS { }
04=	Wild food { }	a. 1- 20 GHS { } b. 21-30 GHS { } c. 31-40 GHS { } d. 41-50 GHS { } e. 51-60 GHS { } f. 61+ GHS { }
05=	Supplementary livestock feed { }	a. 1- 20 GHS { } b. 21-30 GHS { } c. 31-40 GHS { } d. 41-50 GHS { } e. 51-60 GHS { } f. 61+ GHS { }

06=	Materials for the constructions of musical instrument { }	a. 1- 20 GHS { } b. 21-30 GHS { } c. 31-40 GHS { } d. 41-50 GHS { } e. 51-60 GHS { } f. 61+ GHS { }
07=	Others specify { }	a. 1- 20 GHS { } b. 21-30 GHS { } c. 31-40 GHS { } d. 41-50 GHS { } e. 51-60 GHS { } f. 61+ GHS { }

15. Mention the types of NTFPs that you extract and process

01 = Medicinal plants { }

02 = Materials for construction of houses (wood, straw, thatch etc?){ }

03 = Bush meat { }

04 = Wild food { }

05 = Supplementary livestock feeding { }

06 = Materials for construction of musical instruments { }

07 = Materials for rituals and sacrifices { }

08 = Others specify……..

16. How is/are the NTFP you mentioned in Q15 extracted and processed?

……
……

17. Which market centre(s) do you sell the products?

01 = Community market

02 = Sunyani market

03 = kenyasi market

04 = Ntotrosu market

05 = others specify……...

18. What type of the NTFPs do you sell at the above market(s)?

01 = Medicinal plants { }

02 = Materials for construction of houses (wood, straw, thatch etc?){ }

03 = Bush meat { }

04 = Wild food { }

05 = Supplementary livestock feeding { }

06 = Materials for construction of musical instruments { }

07 = Materials for rituals and sacrifices { }

08 = Others specify……

19. How much income do you earn in a market day for the sale of the products mentioned? In Q18? Tick where appropriate

01 = 1-20 GHS { }

02 = 21-30 GHS { }

03 = 31-40 GHS { }

04 = 41-50 GHS { }

05 = 51-60 GHS { }

06 = 61+ GHS { }

20. Do you benefit from NTFP?

01 = Yes{ }

02 = No{ }

21. If yes, in what ways do you benefit?

01……

02……

03……

22. If no why?

01……

02……

03……

E. COMMUNITY MANAGEMENT SYSTEM FOR NTFP

23. Which are the Traditional Institutions and organizations in the community for NTFPS management?

01 = Chief and Elders { }

02 = land lord { }

03 = Queen mother { }

04 = Clan/sectional/family heads { }

05 =Traditional Medical person/Diviner { }

06 = Youth groups { }

07 = Others specify……{ }

Indicate with numbers as follows: 5=Exist and manage NTFPs; 4= Exist but do not NTFPs; 3= Do not exist

24. Specify the type of natural resources each institution manages?

01 = Chief and Elders { }

02 = land lord { }

03 = Queen mother's { }

04 = Clan/sectional/family heads { }

05 =Traditional Medical person / Diviners { }

06 = Youth groups { }

07 = Rain makers { }

08 = Others specify……..{ }

Indicate with numbers as follows:

1= Medicinal; 2= Materials for construction of houses; 3= bush meat;

4= Wild food;

5= Supplementary livestock feeding; 6= Materials for the construction of musical instruments; 7= for rituals and sacrifices;

8= others specify…….....

25. What is the leadership structure for the management of NTFPs in this community? Respondent to describe

……

……

26. Where in the structure do you fit in and why?

……

……..……

27. What relationships exist between you and the other institutions in Q 25 in NTFPs management? Tick in grades as follows:

5= Excellent { }

4= Very good { }

3= Good { }

2= Fair { }

1= Poor { }

28. Give reasons for your choice in Q 27

01=……

02=……

03=……

04=……

29. What other institutions manage NTFPs in this community?

1= FSD { }

2= MOFA { }

3= EPA { }

4= GNFS { }

5= NADMO { }

6= DA { }

7= NGOs { }

8= Others specify……

Indicate with numbers as follows; 5= Present and mange NTFPs; 4= Present but don't manage NTFPs; 3= Not present; 2= Don't know

30. Specify the type of NTFPs each institution/organization manages?

1= FSD { }

2= MOFA { }

3= EPA { }

4= GNFS { }

5= NADMO { }

6= DA { }

7= NGOs { }

8= Others specify……

Indicate with numbers as follows: 1= Medicinal; 2= Materials for construction of houses; 3= bush meat; 4= Wild food; 5= Supplementary livestock feeding; 6= Materials for the construction of musical instruments; 7= for rituals and sacrifices;

8= others specify…….

31. How different is their way of management from the way it is managed by the community institutions?

01=……

02=……

03=……

04=……

05=……

32. In your view how NTFPs were managed 15 years ago?

01 = Restrictions to traditional protected areas { }

02 = Adherence to taboos and totems { }

03 = Rules and regulations { }

04 = Moral sanctions { }

05 = Payment of fees and fines { }

06 = Others specify……

33. How were resources obtained for the management of the NTFPs?

01 = Fines from offenders { }

02 = Community contributions/support { }

03 = Proceeds from sale of community resources { }

04 = Support from GOs and NGOs { }

05 = Others specify……

34. Which of the following way(s) are NTFPs managed currently in this community?

01 = Adherence to government polices { }

02 = Use of District Assembly bye-laws { }

03 = Use of community by-laws { }

04 = Rely on Community Volunteer Squads { }

Grade as follows: 5= Very effective; 4= Effective; 3=Moderately effective; 2= Ineffective; 1=Not applicable

35. What role do you play currently in the management of NTFP(s)?

01 = Pouring of libation to pacify gods when a sacrilege is committed { }

02 = Protection of sacred groves/forest { }

04 = Take custody of animals that stray into the community { }

05 = Assist the chief to resolve natural resources related conflicts { }

06 = Facilitate the making and enforcement of community bye-laws on natural resources { }

07 = Ensure the enforcement of traditional norms, believes, and practices on natural resource management { }

08 = Punish offenders of natural resource related bye-laws { }

09 = others specify……

Indicate the roles above as follows: 5= Very active; 4= Active; 3= Dormant; 2= Not applicable

36. What support or resources do you require for the current management system?

01=……

02=……

03=……

04=……

05=……

37. How would you obtain these resources/support?

01 = Community contribution { }

02 = Support from government { }

03 = Support from NGOs { }

04 = Others specify……

38. How different is the management system 15 years ago from the current management system?

01=……

02=……

03=……

04=……

05=……

39. What are the challenges/problems in the current management system(s)?

01……
……

02……

03……

04……

40. In what way(s) do you think NTFPs could be managed better?

01……

02……

03……

04……

41. What has been the trend of stocks of NTFPs over the past 5 years?

01 = Reduction (……)

02 = Increased (……)

03 = Remained the same (……)

Give examples ……...

42. Give reasons for the trend?

……

……

……

F. NON-TIMBER FOREST PRODUCTION MANAGEMENT AND POLICY ISSUES

43. Are you aware of government policies in place for the management of NTFPs?

01 = Yes { }

02 = No { }

44. If yes, mention them.

1. Bushfire management policies { }

2. Forest policies { }

3. Wildlife policies { }

4. Others specify { }

45. How did you get to know of the policies you have mentioned?

(Tick where applicable)

01 = Government extension agents in the area { }

02 = NGO extension agents in the area { }

03 = Through friends { }

04 = Workshops { }

05 = Radio/Television { }

06 = Community platforms { }

07 = Others specify…….

46. What does the policy mentioned in Q 44 say?

01……

02……

03……

04……

47. In what way do the policies affect your NTFPs activities for livelihood?

1=……

2=……

3=……

4=……

48. Are the policies mentioned in Q44 same or different from what your community by- Laws / guidelines on NTFPs say?

01 = Yes the same { }

02 = No difference { }

49. If no, give reason(s)

01=……

02=……

03=……

04=……

50. Who implements the policies mentioned in Q 44 on NTFPs in this community? (Tick

Where applicable)

01=Government agents { }

02=NGO workers { }

03=Assembly persons { }

04=Chief and Elders { }

05=landlord { }

06=District Assembly { }

07=Others specify…… { }

51. Who ensure that the policies on NFTPs implemented work in this community?

01= Government agents { }

02=NGO workers { }

03=Assembly persons { }

04=Chief and Elders { }

05=landlord { }

06=District Assembly { }

07=Others specify……{ }

52. Were you part of the process of formulating/making the policies you have mentioned in Q 44?

01= Yes { } 02= No { }

53. If yes, at what stage of the formulation process were you involve? Indicate in the processes as follows: 5= Very involved; 4= Not so well involved; 3= Poorly involved;

2= Not involved at all

01= Policy initiation process { }

02= Consultation process { }

03= Acceptance process { }

04= Endorsement process { }

05= Passage process { }

06= Dissemination process { }

07= Others specify { }

54. If no, why were you not part of the formulation process?

01=……

02=……

03=……

04=……

55. What role(s) did you play in the formulation process or processes you have mentioned in Q 53? Roles mentioned should be graded as follows: 5= Very strong role; 4= Strong

role; 3= Fair role; 2=Poor role

01=……

02=……

03=……

56. What were the problems/challenges you faced?

01=……

02=……

03=……

57. In what way(s) do you think you can be better involved in the policy formulation processes?

01=……

02=……

03=……

APPENDIX II: UNIVERSITY FOR DEVELOPMENT STUDIES,

RESEARCH AND GRADUATE CENTER, UDS,

TAMALE

FORMAL INSTITUTIONS QUESTIONNAIRE

INTRODUCTION

The study is aimed at exploring the capacity of Timber Forest Products (NTFPs) for improved livelihoods, incomes and rural economies in Asutifi North District. In line with this the study will explore the impact of NTFP policy (ies) and its implementation on the livelihood of rural communities and the development of Asutifi North District in general.

The survey is for MPHIL thesis.

Dear respondent, your confidentiality is guaranteed.

A. GENERAL INFORMATION

District/Municipality……

Date of interview……..

B. GENERAL BACKGROUND INFORMATION

1. Name of organization/Institution……..
2. Designation of Respondent……..

C. NATURAL RESOURCE MANAGEMENT POLICY ISSUES

3. Aspects of natural resources your organization manages/support in its management.

Tick where applicable.

01=Forest { }

02=Wildlife resources { }

03=Wild fires { }

04=Water resources { }

05=Land resources { }

06=NTFP { }

07=Others

specify……..

4. What is your understanding of NTFP?

……

……

5. What are/is the organizational policies/policy for the management of the resources/ NTFPs mentioned in Q 1?

01=……

02=……

03=……

6. What does/do the policy/policies aim to achieve?

01=……

02=……

03……..

04=……

D. POLICY FORMULATION PROCESSES

7. What was/is the formulation process?

01=……

02=……

03=……

04=……

8. Are communities and traditional institutions part of the policy formulation process?

01=Yes{ }

02=No { }

9. If yes, mention the community traditional institutions/organizations involved?

(Indicate their level of involvement as follows: 5= Well involved; 4= Quite involved; 3= Not involved)

01=Traditional Authority (Chiefs, Elders, Queen mother's) { }

02=Community members { }

03=Youth groups { }

04=Others specify……

10. If no, give reason(s)

01=……

02=……

03=……

11. At what stage where they involved in the formulation processes? Tick where applicable

01=Policy initiation process { }

02=Consultation process { }

03=Acceptance process { }

04=Endorsement process { }

05=Passage process { }

06=Dissemination process { }

07=Others specify { }

12. What role(s) do they play in the formulation process?

01=……

02=……

03=……

04=……

13. How is/are this/these role(s) different from yours?

01=……

02=……

03=……

04=……

14. In what way(s) do you think you can complement each other for effective management of NTFPs?

01=……

02=……

03=……

E. IMPLEMENTATION PROCESSES

15. What are the processes in implementing policies in your organization/district?

01=……

02=……

03=……

16. Are communities/other community institutions playing a role in the implementation process?

01=Yes{ }

02=No{ }

17. If yes, what role do they play or are playing in the implementation process?

01=……

02=……

03=……

04=……

18. If no, why?

01=……

02=……

03=……

04=……

19. Do you support them to perform their roles?

01=Yes{ }

02=No{ }

20. If yes, what kind or type of support do you give them?

01=……

02=……

03=……

04=……

21. If no, give reason(s)

01=……

02=……

03=……

04=……

22. Do you also require support from communities/community institutions for the management of NTFPs you mentioned?

01=Yes{ }02=No{ }

23. If yes, what kind of support do you require from them?

01=……

02=……

03=……

04=……

24. If no, why?

01=……

02=……

03=……

04=……

F. PROGRAMMES AND STRATEGIES FOR NTFPs MANAGEMENT, PROCESSING AND MARKETING

25. What organizational/district programme are in place for NTFPs management.

01=……

02=……

03=……

04=……

05=……

26. What are the overall strategies for NTFPs management, processing and marketing by the organization?

01=……

02=……

03=……

04=……

05=……

27. What are the organization/district strategies for mainstreaming communities/community institutions into NTFPs management, processing and marketing?

01=……

02=……

03=……

04=……

28. What are the problems/Challenges faced in implementing organizational/ District programmes and strategies?

01=……

02=……

03=……

04=……

29. What do you suggest for sustainable management of NTFPs processing and marketing?

01=……

02=……

03=……

APPENDIXIII: GROUP DISCUSSION GUIDE FOR NATURAL RESOURCES USERS, TRADITIONAL INSTITUTIONS AND KEY INFORMATIONS

ISSUES FOR DISCUSSION

1. **LIVELIHOOD SECURITY**

1.1. Sources of livelihood/income in the community

1.2. Contribution of the livelihood options mentioned above to the household Welfare (food, education, health, agricultural production) (assess in monetary Terms/ annum)

2. CAPACITY OF NON-TIMBER FOREST PRODUCTS (NTFPs) FOR IMPROVED LIVELIHOODS AND SOCIAL DEVELOPMENT

2.1. Understanding of NTFP

2.2. Existence and type of NTFPs in community forest

2.3. Contribution of NTFP to individual annual income (assess in monetary terms/ Annum)

2.4. Users of NTFP

2.5. Nature of benefit derived from it

3. EXTRACTION, PROCESSING AND MARKETING OF NTFPs

3.1. How is NTFP extracted and processed

3.2. What NTFPs markets/trades exist (local & foreign?)

3.3. What is the nature of Demand and Supply of NTFPs?

3.4. What are the levels of income from various NTFPs livelihood related activities Mentioned above

3.5. What are the challenges in the extraction, processing and marketing of NTFPs?

3.6. Any suggestions for overcoming the challenges

4. MANAGEMENT OF NTFPs

4.1. NTFPs management system(s) indigenous or otherwise in place

4.2. NTFPs management systems trend (past, present, future)

4.3.Institutions and structures for managing NTFPs

4.4.Existence of rules and regulations governing the management of NTFPs and What are they?

4.5.Trend of NTFP stock (reduction, increased, the same over the past 5 years)

4.6.Reasons for the management of NTFP

4.7.Challenges in the management of NTFP

4.8.Suggestions for better management

5. POLICY IMPLICATION FOR THE MANAGEMENT, DEVELOPMENT, UTILIZATION, PROCESSING AND MARKETING OF NTFPS FOR IMPROVED LIVELIHOODS AND RURAL INCOMES IN ASUTIFI NORTH DISTRICT

5.1.Current policy on forest/NTFPs

5.2.Current policy potential/limitation for development of NTFPs as a livelihood Security strategy for the district

5.3.Levels of involvement of local institutions and structures in the design of NTFP Policies

5.4.Effectiveness of the policy

5.5.Challenges with the policies

5.6.Suggestions for improvement

APPENDIX IV: DISTRICT MAP OF ASUTIFI NORTH DISTRICT