

**NON-WOODY FOREST PRODUCTS AND LIVELIHOODS  
IN NORTHERN GHANA**

**A THESIS SUBMITTED TO GRADUATE SCHOOL,  
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DEGREE OF MASTER OF PHILOSOPHY IN DEVELOPMENT STUDIES.**

**BY:**

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## DEDICATION

I dedicate this piece of work to my mother Celine Deri, children and late father Chemogo Yabepone Deri




## DECLARATION

I **Cyril Yabepone**, author of this study do here by declare that the work presented in this thesis entitled:

**‘NON-WOODY FOREST PRODUCTS AND LIVELIHOODS IN NORTHERN 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.

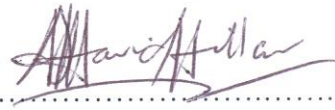
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## ABSTRACT

The Savannah Ecosystems experiences short duration (May-Sept) rainy season which restricts most incomes to that period. Alternative livelihoods activities that allow for a spread of incomes all year-round in other to fill in the income and food insecurity gaps that occur during the off season would seek to address this shortfall. the role of NWFPs to rural livelihood enhancement and wealth creation seem to be least recognized and given attention in northern Ghana.

To address the research problem, various methods (qualitative and quantitative) in data collection and analyses were used. These included Case Studies, Focus Group Discussions, Observations, In-depth interviews and Questionnaires among others. The main findings were that; first, gathering, processing and marketing of NWFPs is a key rural livelihood activity engaged in by farmers in the district contributing to the household security. Second, the contribution of NWFPs to annual income is found to be low mostly within the bracket of 1-20GH¢, suggesting that, income generated from NWFPs is used to fill a cash shortfall, not to make improvements in household security. Third, reliance placed on NWFPs gathering, processing and marketing depends not only on the availability of resources but also on the ease of access to markets, the existence of trade networks and skills acquired. Fourth, it was established that, indigenous beliefs and practices were the modes of NWFPs management 15 years ago. Sixth, communities and traditional authorities are least involved in the initiation and acceptance stages of policies and programmes in relation to NRM in the district.

The recommendations are that: 1, the development of inventory of NWFPs as a prelude to its enhancement as a livelihood asset in northern Ghana and secondly the need for value addition to NWFPs extracted. 2, Institutional Capacity should be strengthened by improving coordination between agencies responsible for NWFPs development and improving the knowledge and skills of farmers/resources users and other stakeholders. 3, the need to integrate contemporal and traditional management systems into natural resource and NWFPs related management systems. 4, ensure policy formulation/ reform



and implementation in favour of NWFPs development in the savannah ecosystem as a means of addressing the issue of NWFPs as an alternative livelihood resource.



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## CHAPTER ONE

### INTRODUCTION

#### 1.1. INTRODUCTION

The non-woody Forest products (NWFPs) which is otherwise known as non-timber forest products (NTFPs) in other ecosystems of the world are a collection of biological resources of nature derived from both natural and managed forests and other wooded areas (Peters, 1996). Interest in NWFPs has grown with increasing awareness of tropical forest deforestation and increasing recognition of the need to add value to forest resources, in order to compete with other land uses. Others have highlighted their existing importance in world trade (De Beer and McDermott, 2000). Since the 1970s, non-timber forest products (NTFPs) have emerged to take their place among the many aspects of forest use that guide natural resource decision- makers. In the early 1990s, NTFPs were mooted as a potential alternative to deforestation and land conservation activities (Falconer, 2001).

However, NWFPs continue to be regarded by many foresters as marginal goods incapable of competing with timber as an economically viable alternative use of tropical and sub-tropical forests. The aim of NWFPs policy initiatives address much more than economic issues. Through the holistic management of NWFPs, 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, 1996; Wollenberg and Ingles, 1998).

The co-relationship between poverty, endowment with natural resources and their geographical distribution has been recognised (IFAD, 2001; FAO, 2000; and World Bank 2004). The poverty profile of Ghana is largely rural and agricultural with 54% of those living in poverty being subsistence (crop) farmers. Poverty also has a strong regional bias, linked to the relative natural resource endowment of the main agro ecological zones of the country. Both the incidence and the depth of poverty are greater in rural savannah than in any other part of Ghana, even though pockets of poverty also exist in the forest zone and coastal belt. Gender is also an important dimension of poverty, especially in Northern Ghana, where sharp distinctions exist between the income earning roles of men and women. Women also bear a disproportionate share of the burden of being poor- they are obliged to spend a great deal of time not only working in families enterprises, but also



nurturing and rearing children and performing other house hold tasks, such as cooking and fetching water and fire wood (Kranjac-Berisavljevic, Bayorbor and Obeng, 2002).

Livelihoods comprise 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 and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Chambers and Conway, 2002).

Households both as a production and consumptions units naturally identify viable means of ensuring their existence on a continuous basis. Livelihoods entails ' a portfolio of activities with different members of the family seeking and finding different sources of food, fuel, animal fodder, cash and support in different ways in different times of the year' (Chamber, 1999). All these contribute to the sustainability of the household livelihood system, enabling the household to cope with and recover from stress and shocks.

The availability and management of natural resource including NWFPs are crucial for the sustenance and livelihoods of communities of Northern Ghana as their social, cultural, health status and economic activities are very much dependent on the natural environment.

However, there has been a long history of concern associated with degradation in sub-Sahara Africa of the general mismanagement of natural resources in much of Africa (Leach and Means, 1996)

End users use these resources in different ways with different levels of intensity to ensure their family and personal wellbeing. Also whereas men may more extensively explore the savannah species for medium to large scale uses e.g. housing construction, charcoal burning and for medicinal purposes, women tend to operate on a much smaller scale through their domestic and organizational responsibilities i.e. collection of fuel wood, farming, processing, gathering fruits from fields as well as identifying, collecting and processing medicinal plants to support the health care of families and for the treatment of other community members (Musah, 2002).

In the light of this, the NWFPs are critical as part of the capital assets of rural livelihood systems and its contribution to livelihood security in Northern Ghana cannot be over emphasised.



## 1.2. BACKGROUND

The non-woody forest products (NWFPs) or non-timber forest products (NTFPs) play very important role in the economy of rural people. Asibey (1999) relates how animal hunting and gathering provide income to families. So it is also proven by studies conducted by Kamara and Addey (2000) and Cashman (1998), in Sierra Leone, Nigeria, Senegal and Ghana on the various contributions that NWFP or NTFPs play in the livelihoods of rural communities, economy and culture. This is manifested in the functions that NWFP and NTFPs have in West Africa (Poulsen, 1998):

- food to supplement the diet and meet seasonal shortages
- Drinks
- Food and cash buffers or insurance in emergency hardship periods
- Medicine and dental chewing sticks
- Fuel for all households and enterprise needs
- Marketable products exploitable for cash income (e.g. cola nut)
- Material for house construction: poles, bark, liana, palm roof tiles and other roof leaves, wattle slats
- Materials for agriculture, hunting and fishing equipment; crop stakes; material for crop storage, fencing and boundary markings. The rest are fodder, for shade and inputs for processing enterprises
- Materials for social, religious and healing ceremonies and symbols of cultural and religious identity and importance.

In 1945 the Forestry Department published a forest policy for the northern regions of Ghana and proposals for its implementation (Marshall, 1945). The various functions of forestry in the Northern territories were indirect utility in the conservation of water supplies, prevention of erosion, shelterbelts and direct utility in the supply of fuel wood, poles and possibly the production of a limited amount of sawn timber (Marshall, 1945). Silvicultural research in support of improved forest management was prescribed.

Since then the Forest and Wildlife Policy (1994) has been developed as the principal 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 resources for maintenance of environmental quality and perpetual flow of optimum benefits 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 the forest resources. Though there have been some achievements in the development of essential infrastructure, institutions and systems, there have been weak coordination among stakeholders on the issues of natural resource management. The policy considers NTFPs as incentives and assistance or as value additions to forest users thus down playing on the development of N.T.EWALWEPs\_as\_xesource for poverty reduction. However, it is known that as in many African capital to majority of the populations in Northern Ghana (EPA, 2000) despite the fact that it has been understudied with little attention paid to it.

### **1.3. RESEARCH PROBLEM**

Non-woody forest products (NWFPs) or Non-timber forest products (NTFPs) are biological resources derived from both natural and managed forests and other wooded areas (Peters., 1996) in the Northern and Southern parts of Ghana respectively. NWFPs are an important tool in addressing poverty issues for marginalized, forest dependant communities, by contributing to livelihood outcomes, including food security, health and well being, and income (Falconer, 1997). 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 only source of personal income (Rodda, 1993; Falconer, 1997). It is the socially most marginalized people who are the main actors in NWFPs extraction (Ros-Tonen, 1999). Despite this, the contribution of NWFPs, especially from indigenous populations to rural economies in Northern Ghana, remains largely undervalued and understudied.

It is also the view of this study that a lot of attention has been paid to the role of annuals (food crops) to the neglect of perennials in Northern Ghana. One of the major problems with the Savannah Ecosystems is the short duration of the rainy season which restricts most incomes to that period. Hence a strategy that allows for a spread of incomes year-round will be filling in the income and food insecurity gaps that occur during the off season. Therefore identifying and bringing to the fore the role of NWFPs in Northern Ghana and with an eye for added value will contribute to wealth creation and improved livelihoods of rural communities.





The purpose of the study is to investigate how non-woody forest products (NWFPs) impacts on rural livelihoods in Northern Ghana. *This research therefore intends to address the problem of under-development and therefore under-utilisation of Non-Woody Forest Products as a strategy for enhancing rural livelihoods.*

The research therefore, seeks to answer the ensuing questions.

## 1.4. RESEARCH QUESTIONS

### Main question:

- What role does NWFPs play and could play in the rural livelihoods and economies of Northern Ghana?

### Specific Research Questions

- What management systems exist for NWFPs in rural communities in Northern Ghana?
- What are the uses, use potentials and livelihood options and how do they contribute to the livelihood security of rural communities of Northern Ghana?
- How does extraction, processing and marketing of NWFPs contribute to livelihoods in Northern Ghana?
- What are the current policy implications for the role of NWFPs in rural livelihoods and economy in Northern Ghana?

## 1.5. RESEARCH OBJECTIVES

### 1.5.1 Main Objective

- To explore the capacity of NWFPs for improved livelihoods, incomes and rural economies in Northern Ghana

### 1.5.2 Specific Objectives

- To assess the contribution of NWFPs to *rural* livelihoods in NG and what its current and potential economic values are for the local and foreign market.
- To find out the management system in place for NWFPs in rural communities in Northern Ghana
- To assess the policy implication for the management, development, utilization, processing and marketing of NWFPs for improved livelihoods and rural incomes in Northern Ghana



## **1.6. RELEVANCE OF THE RESEARCH**

There is limited knowledge on NWFPs and its contribution to rural economies in Northern Ghana. Most studies on this subject are on the forest regions but very little on savannah where this study is situated. This study will therefore enhance the knowledge of stakeholders (rural communities, traders, policy makers and implementers, and development practitioners) in Northern Ghana on NWFPs. The study will also identify the uses and potential uses, management systems and how NWFPs can support rural economies and what can be done to improve upon it. The implication on NWFPs 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 NWFPs for poverty reduction in Northern Ghana.



## 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 provided the framework as perceived differently by different scholars. Major concepts such as; Non-Timber Forest Products, Timber forest Products, the Role of the Savannah Forest and Savannah Grass land, Livelihood and NWFPs, Forestry and Woodland Management Policies, and the NWFPs/NTFPs Management systems are reviewed.

#### 2.2 Savannah Forest Debate

Forest in Ghana is classified into rain forest and semi deciduous forest. Though scientific narratives consider parts of the vegetation of the north as forest, definition by foresters in Ghana go to suggest that forest means timber which is found in the southern parts of Ghana only (Hall and Swaine, 1981). As a result of the interpretation of forest, the north is classified as not having forest and referred to as savannah woodland. As such forest development and management regimes are rigorously applied to forest in the south as against that of the north. This stance is contrary to the spirit and letter of the 1994 forest and wildlife policy which allow for sustainable management and development of the nation's forest and wildlife with active participation of all stakeholders.

Literature refers to the closest of vegetation to the forest of southern Ghana as the savannah woodland and or savannah forest (Abu-Juam, 2002). These terminologies have been interchangeably used though they do not have the same meaning. Also frequently used in the context is savannah grassland. Savannah forest /savannah woodland differs significantly from savannah grass land. Savannah forest /savannah woodland is composed of short statured trees, usually not forming a closed canopy and often very widely spaced with vigorous grassland (*Andropogon, spp.*) and fire resistant shrubs whiles savannah grassland is the vigorous grassland found within the savannah woodland. (Hall and Swaine, 2003).

Studies further reveal that the floristic composition of sacred groves in Northern Ghana has been seen as relics of the old forest that once covered much of the savannah. This view was espoused by French researchers writing about Burkina Faso and Guinea in the colonial era (Aubreville, 1939;



Adam, 1948). If this were the case, then sacred groves are very precious as embattled relics of a vanished ecosystem.

The Northern Savannah lies within the Guinea Savannah and the Sudan Savannah ecological zones. As in many areas in Africa (e.g. Burkina Fasso) with similar ecological systems, savannah woodlands provide valuable environmental services and provide critical refuge for native biodiversity, and protection for soil and water resources against degradation. The northern savannah zone of Ghana supports about 20 percent of the national population and supply about 70 percent of Ghana's total demand for firewood and charcoal estimated at about 16 million cubic metres. The northern savannah zone also provides medicinal plants, roofing grasses, fencing poles, and fruits (e.g. shea-nut, an increasingly important export commodity). According to the World Health Organisation (2002), more than 4 billion people rely on traditional plant-based systems of medicine for their primary health care. Egypt is the most important medicinal plant exporting country in Africa, and the fifth biggest exporter of medicinal plants in the world. Unlike in Burkina Fasso, unregulated exploitation of the ecosystem to satisfy socio-economic needs has resulted in some loss of biodiversity and severe resource depletion. The survival of an increasing number of medicinal plant species is being threatened. Nevertheless, the savannah woodland provides valuable human and environmental services (Arvidsson, 2004).

### **2.3 The Non-Woody/Timber Forest Products**

Early Man's interaction with and dependence on the forests was, for many years, almost exclusively centred on Non-timber Forest Products (Francois, 2001).

Somewhere down the course of history, timber and timber products assumed such major importance in human affairs that they appeared to be the only significant out-put of the forests. They dominated in national and international trade statistics, were promoted rigorously in all sorts of media, adapted readily to the changing tastes of urban consumption, and generally basked in an exaggerated measure of self importance (FAO, 2002). For most rural populations, however, this prominence is ill founded. For those who come face to face, with the harrowing experiences of ill health, hunger and other forms of deprivation, the reality is the enormous contribution Non-wood Forest Products (NWFPs), in all their varied forms, make to all aspects of their lives (Francois, 2001).

Recent increase in interest in NWFPs has been a consequence of a number of shifts in developmental focus. With the evolution in thinking about the importance of rural development



and poverty alleviation has come growing interest in how non- timber forest products contribute to households' food and livelihood security. The non-timber forest product activities have begun to attract particular attention as being often one of the major income generating components of the non-farm part of the rural economy (FAO, 2002). Concerns that development activities be consistent with environment integrity and not prejudice the future potential of forest and land resources, have highlighted arguments that managing them for NWFPs might be less environmental damaging than alternative uses of the forest.

The concept NWFPs is inexact and cumbersome since it is defined not by what it is not. Considering however the rural communities in Africa, one can wonder if it is not more appropriate to define the NWFPs by calling attention to the functions they play in rural households and agro-forestry and community forestry production systems and therefore sustaining rural life. These functions include food production and food security, forest medicines, house construction materials, agricultural production equipment, income generating by gathering, processing and trading extractive products such as gum, oils, leaves, fruits, etc.

In the light of this, Wicken (2003) defined NTFPs as any and every natural resource from the forest except timber. It is only that way that it will be possible to really ascertain the significance of the non-wood forest resources for rural communities and therefore, determine what priority should be given to the different products and services which play an important role in the very subsistent life of people. What makes the NTFPs different from the timber, and important as a conservation strategy, is the assumption that the forest will remain standing and more or less biologically intact under sustained NTFP harvesting. The savannah forest has played a key role in the provision of NWFPs in enhancing the livelihoods of the rural folks. The next issue under review is the role of the savannah forest as a major source of NWFPs.

## **2.4 The Role of the Savannah Forest and Savannah Grassland**

Savannah bush meat, including various indigenous rodents, antelopes, among others are an important source of animal protein (providing about 12 percent of the rural communities' protein consumption) and revenue for local impoverished communities (Edwards, 2000). The savannah woodlands also have beneficial effects on the local climate and constitute a natural barrier to the desiccating harmattan winds from the Sahara, helping to maintain a favourable microclimate for agricultural production, and protecting major rivers and water bodies vital for the rest of Ghana (Barborak, 2006).



The main economic activities within the Northern savannah zone are the production of annual crops (cereals, legumes, and root crops), cotton and livestock. At the beginning of the last century, woodlands were estimated to cover about 9.4 million hectares of the northern savannah zone, supplying mainly wood fuel and a small amount of building poles for local use. While the northern savannahs are home to about one third of wildlife species in Ghana, annual bushfires affect 50 percent of the savannahs, destroying species of flora and fauna and reducing biodiversity (Becker, 2003). The extraction, processing and trading of NWFPs is often the only employment available for the population in remote areas. According to the WHO (2001) 80% of the people living in developing countries use wild plants to meet some of their health and nutritional needs. Hence, life would be virtually impossible for most people living in rural areas in developing countries without the availability of thatch for roofs, medicinal plants and natural fibres to construct baskets among others.

The shea nuts and butter had also retained its status of traditional export commodity in most of the countries located in the Sudan-Guinean belt in West Africa (WHO, 2001). In Burkina Faso, 70,000 metric tonnes of shea butter and nuts were traded in 1999/2000 earning 4.9 billion CFA Fr., (175 million US Dollars) representing 1.16% of the GDP and 11.5% of the total export earnings of the country that financial year (Baker, 2002).

In Central African Republic, surveys revealed that 197 traders are registered as only bushmeat traders; the total sale of bushmeat amounts to 730 metric tonnes per year. It has also been found that the national average consumption of bushmeat in the whole country reaches 25 kg. per person per year. The contribution of bushmeat to the GDP of Central African Republic is 37 billion CFA Fr which represent a little more than 10% (Balick et. al, 2005). This also corroborates similar studies conducted in Ghana which shows some reliable figures on the intake of wild animal protein in the country.

Medicinal products from the savannah forests are among the locally traded products with low value in monetary terms, but play a fundamental role in the rural production systems by providing almost the entire health care to the people. It is therefore easy to have an indication of the real value of these medicinal products by estimating the opportunity cost. If, for instance, the whole population of Ghana would have to rely on modern medicine, it will be necessary to multiply the national bill for drug supply by 90, as almost 90% of the population, rural as well as urban, relies on traditional medical treatments, mainly based on natural products from the forests.



The ideal situation would be for mankind to harvest all these goods and enjoy the benefits of these services on a sustained basis. It will be of course difficult to attain this, the solution will be therefore to find diverse appropriate combinations to harvest NWFPs, but at the same time, cater for the needs to preserve the Earth's diversity so as not to degrade them.

## **2.5 Degradation of the Savannah Wood Land**

The savannah zones are also under tremendous pressure from growing human and livestock Populations, agricultural expansion, inappropriate farming practices, woodland degradation, bush fires and, introduction of new crop varieties that are replacing indigenous varieties (Appasamy, 2003). Land degradation associated with loss of vegetation and inappropriate farming practices is a serious problem and was identified in the Ghana National Environmental Action plan (NEAP) as one of the major environmental issues in Ghana. The key issues in natural resource management in Ghana are land and forest degradation and loss of flora and fauna biodiversity. These result from unsustainable harvesting levels in both the high forest (timber extraction) and savannah zones (poles/wood fuel and medicinal plants) and unsustainable land use practices especially crop fanning and livestock grazing (Appasamy, 2003).

About 30% to 40% of the total land area of Ghana experiences some form of land degradation. The main problems experienced are deforestation, overgrazing, water pollution, inadequate supplies of potable water, poaching, habitat destruction, and soil erosion (specifically: sheet erosion through surface runoff, rill erosion in permanent and shifting micro-channels and gully erosion in permanent channels). In Ghana, land degradation and deforestation, are on-going processes in all parts of the country at various scales and intensities. It is estimated that between 1931 and 1938, the area of closed forest in Ghana was reduced by 64% from 47,000 km<sup>2</sup> to 172001(1112 and open woodland declined by 37% from 111,000km<sup>2</sup> to 69,800km<sup>2</sup> (Mann, 1990). The threat of desertification is however more prevalent in the Guinea and Sudan savannah zones of the Northern, Upper-East and Upper-West regions where the aridity index is 0.6. Around 80,000 km<sup>2</sup> in Upper East and parts of Northern region are considered prone to desertification processes. Current maps of human induced land degradation highlight particularly severe degradation in the far north-east of Ghana, in Upper East Region (Environmental Protection Agency, 2000).

The pervasive use of fire for land clearing in the farming systems of the desertification prone areas and uncontrolled late annual bush fires destroy forests, woodland and crops over extensive land areas. The litter which contributes organic matter to the soil is burnt and the land is laid bare and





predisposed to water and wind erosion contributing to loss of nutrients and acidic conditions due to leaching. This limits the range of crops that can be grown. The annual bush fires have contributed to the slow regeneration of the vegetative cover of marginal lands and other un-cropped lands and to the development of unpalatable forage which is not useful to the large numbers of livestock. Biodiversity is also lost and the whole habitat which supports wildlife and large numbers of ecologically interdependent species are destroyed. Hence, NWFP management is the next concept to be discussed.

## **2.6 NWFPs/NTFPs Management**

NWFPs/NTFP management is cost effective in traditional systems partly because it is integrated with other land uses and labour activities (Padoch and de Jong, 1989). The literature on traditional management systems reveals 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 NTFP source from dwellings, proximity to the market, the commercial value of the NTFP, the nature of ownership and access rights and the natural productivity of a particular forest area (Bishop and Scoones, 1994). In addition to the complexity of the possible combinations 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 NTFP management. That is, NTFP management practices can be integrated into other land use activities such as fanning and hunting. What often makes traditional management practices cost effective is the fact that they are carried out in conjunction with other activities (Anderson and Ions, 1992).

Implementation of state co-management initiatives of NTFPs has often been followed by improved ecological conditions of the forests. Ghatak (1995) establishes the causal linkages between co management and ecological conditions. Most of the studies reviewed nonetheless suggest that participation and benefit sharing with local forest communities has resulted in more careful management with a subsequent increase in forest cover and increasing biodiversity. The socio-economic effects are less predictable, with many co-management initiatives neglecting the interests of large portions of forest communities. In Sub-Saharan Africa in terms of the distribution of social and economic benefits of commercial NTFP management, those initiatives that incorporate pre-existing institutions and organizations appear to have the most positive outcomes (Agyemang (1994). However because of the historical neglect of NTFPs in conventional scientific forest management, the information gaps are numerous (Siebert, 1995).





In Ghana, investigations (Millar, 2003; Wardell, 2002; Gausset, 2003) in forest and wildlife management have shown conclusively that a great many local communities and institutions have been managing their forest resources effectively, creating institutional arrangements to ensure the basic protection of forests and wildlife and the enforcement of access and use rights. Many of these local management systems which evolved over time have proved more effective than management by the Forest and wildlife Departments which had been plagued by constant budget and inadequate staff.

The contribution of NWFPs to *rural* livelihoods is being reviewed as a concept in the ensuing narrative.

## **2.7 Livelihoods and NWFPs**

There is no doubt that NWFPs or NTFPs play a significant and often critical role in providing subsistence and cash income to a large part of the world's population (Pimentel *et al.* 2005). Studies from tropical regions indicate that it is often the poorest households in rural communities that are most directly dependent on NTFPs (Jodha 1999; Hecht *et al.* 2001; Falconer 2004). The people involved in NTFP extraction and processing are more often than not among the poorest in the tropical regions and, hence, in the world. Browder (1992) noted that extractor households are the poorest non-Amerindian group in the Amazon region. In MaranhAo, Brazil, Hecht *et al.* (2001) found that 86.4% of the babacu collectors and processors were women, 93.2% of whom were landless. Romanoff (1992) investigated rubber-tappers on estates in the Bolivian Amazon and revealed that this group faces relatively more frequent food shortages than other populations, with 22% of the children in the study found to be malnourished. Margoluis (1994) discovered interesting links between poverty, commercial NTFP use and peasant household economics in Central America.

Thus, income generated from NTFPs is used to fill a cash shortfall, not to make improvements in family health and nutrition. Some of the clearest evidence for the relative dependence of the poor on NTFPs comes from work that estimated the composition of income in communities' peripheral to the created Knuckles National Wilderness Area of Sri Lanka (Gunatilake *et al.* 1993).

In Sub-Saharan Africa, studies from Ghana indicate that it is poor women, generally the poorest members of rural society, who are the most reliant on NTFP extraction, sometimes as their only means of livelihood (Falconer 2004; Agyemang 1994). Veld Products Research (a NGO promoting Botswana's natural resources) examined commercialisation of NTFPs in the formal and informal



sectors of that country (Taylor *et al.*, 1996). By and large it is mainly the poor that are involved in the harvesting of NTFPs.

While these studies demonstrate the strong link between poverty and dependence on NTFP use, other researchers have found different relationships and factors influencing NTFP use. Godoy *et al.*, (1995) examined the relationship between income and the use of NTFPs, drawing on worldwide ethnographic literature and on preliminary results of fieldwork among the Sumu Indians of Nicaragua. They proposed that as income rises specialisation increases, the share of household non-foraging income increases, and the value of NTFPs extracted per hectare may rise or fall.

Other factors, like proximity to the resource base and household demographics, have also been found to influence use. In a study of the relative importance of NTFPs in providing cash income for 13 villages in the Iquitos region of the Peruvian Amazon, Padoch (2002) found considerable variation in the type of production among and within villages. Chief determinants of this variation include access to resources and markets, local history of settlement, and specialisation. Within villages, there are considerable differences among households, partly determined by demographics.

Although it is clear that there is a complexity of factors influencing NTFP use, there is overwhelming evidence that the poorest segments of societies around the world are the populations principally engaged in NTFP extraction. Yet if research results indicate a high correlation between levels of poverty and NTFP use, the nature of this relationship remains unclear. Do people engage in NTFP extraction because they are poor or are they poor because they are dependent upon extraction for their livelihoods? There is evidence to support both relationships, most strongly the former.

From the literature, three basic reasons account for why poor people engage in NWFP / NTFP extraction. First, NTFP extraction generally requires very little capital investment. As Falconer (2004) observed in Ghana, women have little or no access to capital and thus rely on NTFPs. Schreckenberg (1996: 228) found in Benin, that for both men and women a major attraction of NTFP gathering activities is that they require no cash investment'. Anderson's (1992) 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 NTFP extraction arises because, in most of the world's regions, forests are geographically remote from the centres of economic and political



power. The significance of this fact is that geographical and economic marginalisation is often mutually reinforcing (Blaikie and Brookfield, 2003). In short, tropical forests tend to be occupied or surrounded by the poorest, most economically marginalised segments of society. Throughout the Americas, indigenous peoples have extensive knowledge of forests and of NTFPs, but have been politically and economically marginalised for several centuries (Alcorn, 1995). Similarly, in South Asia, there is a strong geographic overlap between extensive areas of forest and concentrations of impoverished tribal people.

The poor engage in NTFP extraction in the absence of alternative income sources. In Madhya Pradesh, the problem of seasonal unemployment in rural areas is met by the collection of NTFPs (Prasad and Bhatnagar, 2003). Padoch's (2002) findings from the Peruvian Amazon indicate that lack of access to prime rice cultivation land was one of the factors influencing dependence on NTFP extraction. To use the terminology of economics, the opportunity costs of poor households are low. As Jodha (1999: 1173) concluded from his extensive study of common property resource use in India, 'poor households, with surplus labour and low opportunity cost, readily accept the low pay-off activities possible through common property resources'. Richer households were less engaged in the collection of NTFPs at low producer prices because they had alternative sources of income that were more remunerative.

Literature has it that engaging in NTFP extraction perpetuates poverty — there are two sources of evidence providing support. First is the fact that returns from NTFP extraction are low relative to alternative types of land use (Browder, 1992). Other research shows that, given the opportunity, people involved in NTFP extraction will indeed opt for alternative income-generating activities. Women in Benin would prefer to earn their living in activities less physically demanding than NTFP extraction, even if NTFPs are more readily available (Schreckenberg, 1996: 274).

My position is that not all studies report findings in agreement with an assessment of relatively low remuneration from extraction. Olsen (1997) researched the trade in medicinal and aromatic plants from Nepal to India in the Gorkha District, Nepal found that the average daily income earned from NTFP collection and sales is competitive with other income-generating activities in the area. Likewise, in rural Benin, though NTFP-extraction activities produce low profits, they are in the range of incomes from other sources (Schreckenberg, 1996). The emergence of basket making for tourist and export markets has meant a significant boost in some rural women's incomes in southern Africa, (Terry 1984; Terry and Cunningham 1993). Between 1970 and 1992, income in



Ngamiland, Botswana, rose from £300 per year earned by a handful of women to £60,000 earned by approximately 2,000 (Terry and Cunningham, 1993).

Research literature on the evolution of the rural non-farm economy (Haggblade and Liedholm, 1991) indicates that, where population is growing faster than per capita incomes, lack of alternative sources of income results in a high proportion of those engaged in processing and trading entering labour-intensive, low-return activities that can contribute very little to livelihood enhancement. However, where incomes are rising, more productive and remunerative activities serving growing and diversifying rural and urban markets can emerge. There are some indications that this may be one reason explaining differences between stagnant and income-enhancing NTFP activities (FAO 2000; Arnold et al., 1994).

More recent literature focusing on rural households' non-agricultural activities from the perspective of coping strategies presents a more sombre picture. The early studies are restricted to drought-prone areas, where the likelihood of harvest failure makes the rural population far more active in non-agricultural activities like trade and handicrafts. The economic analysis centres on household efforts to preclude shortfalls in basic needs provisioning by seeking a number of income-earning activities which avoid year-round reliance on agriculture and offset the risk of production failure in any one activity (Campbell, 2002; Bruijn and van Dijk, 1994).

The new 'sustainable rural livelihoods' (SRL) approach is a response to the complexity of rural livelihoods and their growing non-agricultural character. While there are several definitions of 'sustainable livelihoods', Carswell (1997: 173) is often cited as defining it as: "... *the capabilities, assets and activities required as a means to a living. A livelihood is sustainable if it can cope with, and recover from, stresses and shocks, maintain or enhance its capabilities and assets and provide net benefits to other livelihoods locally and more widely, both now and in the future, without undermining the natural resource base*".

Furthermore, some analysts see income diversification as a trend that weakens rather than strengthens rural productivity. Berkvens (1997) records how diversification detracts from Zimbabwean households' achievement of higher agricultural productivity by the diversion of labour and capital from farming. At a more abstract level, Collier and Gunning (1997) argue that income diversification sacrifices the gains of specialization in favour of spreading risks over multiple income-generating activities.



The structure of relationships between collectors, middlemen, traders and wholesalers can be highly complex, involving various elements of exploitation, risk, cooperation, collusion and resistance (Padoch, 2002; Peluso, 1992; Coles-Ritchie, 1996; Edwards, 2000). The character of these relationships can shift through time, from locality to locality, and at different points along the marketing chain.

Much of the research that focuses on marketing networks reveals dynamism in the relationships between producers and intermediaries further downline. States have often intervened in the trade in NTFPs for a variety of other reasons as well, such as to control forest use, protect the role of the state as a producer, and to control prices of particular consumer products, such as wood fuels through policies (Deweese and Scherr, 1996). The next discussions turn on forestry and wood land management policies.

## 2.8 Forestry and Woodland 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 departments under state supervision. This was very centralized system for the management of government lands based on forestry code which defined the legal framework for the exploitation of resources (Mamadou, 2002). Hence, 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 aim of conserving forest resources. The PDDF was however, moderately successful because national efforts to manage natural resources were not sufficiently well integrated at sub-regional level. The plan however, lack focus and did not place emphasis on the involvement of communities and traditional institutions at all levels in ensuring the conservations of forest resources.

Before 1967 most of Indonesia's natural forests were in effect controlled and managed by forest dwellers. Decentralization of government forestry institutions in 1957 had granted forest management authority to provinces. The basic Agrarian Law of 1960, recognizing customary property in so far as it did not conflict with national interest. In 1967, the government **adopted** the basic forestry law, which placed all of Indonesia forests under central government authority. A



new Forestry Law (Law 41/1999) was passed in 1999 to replace the basic forestry law (1967). The new law however, does not mention the transfer of forestry authority to regions, implying that it remains with the Ministry of Forestry. Hence, in 2000, the government finally passed the much awaited regulation. Though expected to clarify laws ambiguities, it failed to explicitly clarify responsibilities. Hence, communities did not see much value in forestry; therefore support could not be counted on for forest protection.

It was generally thought that the situation of forestry and wildlife in the different African countries was a function of the colonial system and that this would alter with independence — recent studies suggest little has changed (Wardell, 2002; Fairhead and Leach, 1994). Many of West Africa's high forest areas were reserved during the colonial period for commercial or environmental reasons. Today these are seen as important sites for the conservation of biodiversity, wildlife, climate and soil-concerns which satisfy global and regional environmental agendas, but which are not necessarily shared by local populations who have other needs to use land and resources within reserves.

The earliest recorded forest policy for the northern savannah of Ghana was developed in the 1930s following a series of inspection tours undertaken between 1908 and 1935. Based on the reports the Forestry Department began to see the primary purpose of savannah forestry as to guarantee a supply of forest products to local people. The Upper East Region was the priority region due to the population pressure (Thompson, 1910).

It was believed that large timber could not be produced in the Northern Territories. The greater part of the area was then under-populated and there was ample small timber and fuel wood to supply domestic needs (Moor, 1935). The need for reservation of fragile environments and prevention of soil erosion, particularly in hilly areas and along riverbanks was noted. Protection of forests for maintenance of biodiversity was not recognized. Climatic protection reserves, as in the high forest-zone- were judged to be unnecessary at that time (ibid).

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 the people, protection of headwaters and other water supplies, fragile ecosystems, slopes, maintenance of favourable conditions for agricultural crops, as well as for public education and research.





During the colonial era within the very early Forest Policy of 1948, Non-woody forest products or non-traditional forest products were foreseen as in the supply of firewood, grazing and minor products such as thatch and fruits. The ideal would be to have numerous small reserves, accessible to every settlement, owned by the local people and worked on a simple scheme of management, with their goodwill. In some areas these easily accessible reserves could not be formed without de-possessing agriculturalists, but in most parts they could be formed, though some 'secondary' forest had to be included (Pogucki, 1950). In addition to agriculture, the local inhabitants collect a broad range of Non-woody forest products or non-traditional forest products from the savannah woodlands and gallery forests for subsistence use and/or for sale in local markets.

The current forest and wildlife policy of 1994 is the principal 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 resources for maintenance of environmental quality and perpetual flow of optimum benefits 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 the forest resources.

Though there have been some achievements in the development of essential infrastructure, institutions and systems, there have been weak coordination among stakeholders on the issues of natural resource management e.g. MOFA, EPA, MLFM. Also, traditional institutions and systems have been inadequately involved in forest and wildlife management resulting in resistance to change due to attitudes, values and practice.

Due to the emphasis on forest resources in general, the current Forest and wildlife policy of Ghana (1994) is devoid of specific mention of NWFPs/NTFPs. This Policy did not go as far as to mention the list of NWFP/NTFP uses as was done in the colonial policies. NTFPs are generally and implicitly seen as 'incentives and assistances' or 'as value additions'. It is also clear that the current policy is heavily skewed in favour of the High Forest Zone. 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 towards timber and other traditional forest products. The policy is also silent on the management of NWFPs/NTFPs and how the development of the community based integrated resource management in the savannah zone would be done. Hence the compelling evidence is that Ghana has no existing policy and policy direction on NTFPs/NWFPs



and the general term of '*forest resource*' is doing a disservice to a very significant resource that is critical for poverty reduction in the savannah woodlands area (Millar, 2004).

## 2.9 Conclusions

The chapter focused on the theoretical underpinnings of the study area. It reviewed key aspects; Savannah Forest Debate, The Non-Woody/Timber Forest Products, Role of the Savannah Forest and Savannah Grassland, Degradation of the Savannah WoodLand , NWFPs/NTFPs Management, Livelihoods and NWFPs and Forestry and Woodland Management Policies

Drawing from the discussions, I am tempted to conclude that, the savannah woodland provides valuable human and environmental services and played a key role in the provision of NWFPs in enhancing the livelihoods of rural folks

The literature showed that Land degradation associated with loss of vegetation and biodiversity is due to the tremendous pressure from growing human and livestock populations, agricultural expansion, inappropriate farming practices, woodland degradation, bush fires, and introduction of new crop varieties that are replacing indigenous varieties. Debates of reasons why the poor people engage in NWFP / NTFP extraction revealed that NTFP extraction generally requires very little capital investment. The literature shows that other factors are that poor people engage in NTFP extraction because, in most of the world's regions, forests are geographically remote from the centres of economic and political power and NWFP / NTFP extraction offer the most appealing alternative in the absence of other income sources.

It further revealed that, a great many local communities and institutions have been managing their forest resources effectively, creating institutional arrangements to ensure the basic protection of forests and wildlife and the enforcement of access and use rights. Many of these local management systems which evolved over time have proved more effective than management by the Forest and wildlife Departments, plagued by constant budget and inadequate staffing. Though there have been some achievements in the development of essential infrastructure, institutions and systems, there have been weak coordination among stakeholders on the issues of natural resource management. 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 NWFPs/NTFPs and how the development of the community based integrated resource management in the savannah zone would be done. Hence the compelling evidence is that Ghana has no existing policy and policy direction on NTFPs/NWFPs and the general term of '*forest resource*' is doing a disservice to a very significant resource that is critical for poverty reduction in the savannah woodlands area.

This study is to provide empirical evidence to the Ghanaian situation and establish proof or other wise of the various positions established by literature.



## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

Research methodology is an important component of the study providing the framework upon which the study was conducted. Hence, it is vital that the methodology is sound and guided by the theoretical underpinnings of the study goal and objective, the nature of the research problem, how data would be analysed, interpreted and presented as well as the scope of the study. It is essential to conduct the research thoroughly to efficiently produce accurate and precise data which when analysed will logically produce evidence to collaborate or other wise the research goals and objectives. This section therefore, provides the framework upon which the research goals and objectives was achieved. I intend to give an in-depth explanation of the research approach and process, methods of data collection, sampling procedure, size and methods, background of study area and scope, and data analysis. A detailed outline of the research phases is outlined.

#### 3.2 Qualitative and Quantitative Research Approaches

The study combined qualitative and quantitative approaches in the data collection and analysis as in figure 3.1. This collaborated most methodological commentaries (Strauss and Corbin, 1990; Brannen, 1992; Brown 1996; Twumasi 2001) agreeing that, in so far, two distinct approaches (qualitative and quantitative) can be said to exist. The most important difference between them being the way in which each tradition treats data. The central issue that face social science research is the choice of the appropriate research approach and method to investigate the specific problem (Bacho, 2001). This goes to support the view that social issues are varied phenomenon and difficult to capture for investigation. The reason for this lies in the nature of social phenomenon and the objective of the study. Views on the type of research approach to use are polarized among social science researchers.

Proponents of the quantitative approach contend that human behaviour in the social sciences, just as physical phenomena in the natural sciences, is quantifiable in attributes and subject to generalization that have universal applicability (Bacho, 2001). Hence, it seeks to test the correlation between variables while enumerative inductive social science is concerned with observation and description and, at best generating hypothesis (Silverman, 1993 as cited in Bacho, 2001). A counter attack of the analytic inductive social sciences argue that the quantitative researcher looks through a narrow lens at a specified set of variables while the qualitative



researcher looks through a wider lens, searching for patterns of interrelationships between a previously unspecified set of concepts. They further argue that in a quantitative tradition, the instrument is a predetermined and timely tuned technological tool which allows for much less flexibility, imaginative input and reflexivity. Brown (1996) concludes that, where the research issue is clearly defined and the questions put to requires unambiguous answers, a quantitative approach may be appropriate.

On the other hand, where the research issue is less clear-cut and the questions to respondents likely to result in complex, discursive replies, qualitative methods are appropriate. The question therefore, is whether there are ideal or pure situation of exclusively "qualitative" and "quantitative" data. One might use qualitative data to illustrate or clarify quantitatively derived findings; or, one could quantify demographic findings or, use some form of quantitative data to partially validate one's qualitative analysis (Strauss and Corbin, 1990).

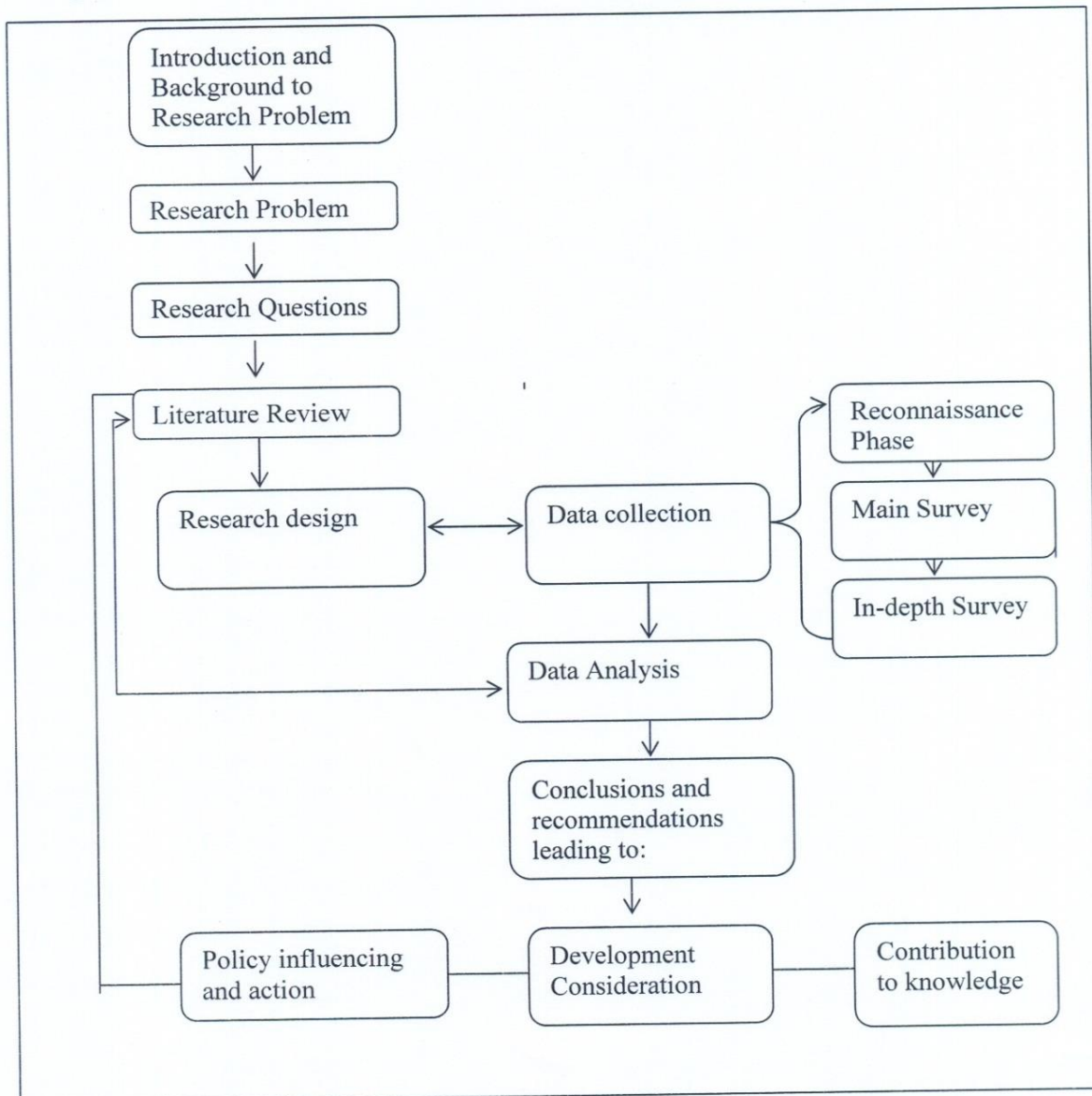
Therefore, in the light of the above arguments, I argue for research situation that could combine the two approaches without ignoring completely the other. Hence, the study combined both the qualitative and the quantitative approaches in the data collection and analysis for fair representation of the study results from the different background of respondents. The next step is a vivid description of the research process.



### 3.3 The Research Process

The research framework in figure 3.1 adapted from Bonye (2007) formed the basis through which the study was conducted. It presents the systematic process of the research right from the start to the end.

**Fig. 3.1: The Research Process**



Source: Bonye, (2007)

The research process as illustrated in Figure 3.1 started with the conception of the research problem and the introduction and background to it, on the premise that NWFPs or non-timber forest products play very important role in the economy of rural people (Asibey, 1999) and that a lot of attention has been paid to the role of annuals (food crops) to the neglect of perennials and



other NWFPs in Northern Ghana. One of the major problems with the Savannah Ecosystems is the short duration of the rainy season which restricts most incomes to that period. Hence a strategy that allows for a spread of incomes year-round will be filling in the income and food insecurity gaps that occur during the off season. My view therefore is that identifying and bringing to the fore the role of NWFPs in Northern Ghana and with an eye for added value will contribute to wealth creation and improved livelihoods of rural communities.

Hence, my research questions and objectives were shaped in this regard. Literature was then critically reviewed taking into consideration the research questions and objectives. Literature focused on NWFPs/NTFPs and what it is in the general context of natural resource, its role in the socio- economic and livelihoods of communities. The policy direction for its development in Northern Ghana. This was followed by the research design which informed my choice of study-survey. Subsequently, data collection which is the next step was conducted in three phases: reconnaissance phase, main survey phase and an in-depth survey phase. This then led me to data analysis and recommendation for policy influencing and action, development consideration, and contribution to knowledge on the subject under investigation.

### **3.4 Research Design**

For any investigation, the selection of an appropriate research design is crucial in enabling valid findings to be established. Hence, the research design that was adopted for the study is the Non-experimental Hypothesis Testing and Descriptive Survey Research Design (Yin, 1993; Brown, 1996). Survey research studies both large and small populations to discover the relative incidence, distribution, and interrelations of variables. It relies upon the questioning of a selective group (sample) of a population and analysing data in order to answer a hypothesis or describe set characteristics (Saunders et.al., 1997).

Brown (1996) highlighted some advantages in using this research design as follows:

- The collection of large amount of data is quick and cheap;
- Can be used to obtain retrospective information;
- Generalisation of data to the population is possible;
- It's possible to make comparison of individual and assessment of relationships of variables and;
- Data is also collected from a large cross- section of respondents which would have been unable or difficult to collect by other methods.



Even though the cross-sectional survey is useful in processing large amount of data, it fails to look at how trends may develop. Hence, I proposed to use trend analysis (A generational study) to augment the study in investigating how NWFPs have been extracted and managed over time. In doing so the same set of research questions would be asked to all the different category of respondents (Millar *et.al*, 2004).

It is in the light of the above that I deemed it suitable to adopt the survey approach in this study. Two main survey research instruments were used to collect data (Leech *et.al*, 2005). Questionnaires (Appendix 1 and 2) were administered to formal institutions (EPA, FSD, MOFA, DA and NGOs) and individuals on issues in relation to NWFPs, its management and livelihoods of communities. Field observations were applied in validating some of the data collected (Karma, 1999). This enabled me collect information that otherwise cannot be captured by questionnaires. Details of this is outlined in the method of data collection. As a start, secondary data was reviewed from earlier work done in books, journals, magazines and other sources in relation to the subject matter.

### 3.5 Background of the Study Area

Northern Ghana geographically refers to the three regions of the north: Upper West, Upper East and Northern Regions. Northern Ghana is characterized by an unpredictable climate, erratic rainfall pattern, rapid land degradation, and increasing population pressure. It has an approximate population of 3, 430, 272 (It has a population growth rate of about 3.4). It has only one rainy season that is, April/May to October. Annual rainfalls range from 800 to 1200 mm (Abu-Juam, 2002). The ever increasingly variable rainfall pattern has become unpredictable reflecting in serious agricultural consequences. It declines from south to north. Important crops include millet, sorghum, maize, rice, yam, peanuts and tomatoes. The most common economic trees are the sheanuts, dawadawa, baobab and acacia. The sheanut tree grows wild and it is an important cash crop. Over 70% of Ghana's livestock: cattle, sheep, goats, poultry are raised in this zone.

Poverty is overwhelmingly a rural phenomenon, with 80% of those persons classified as poor residing in the rural areas. The distribution of the population living below the poverty is about 50 percent in Rural Savannah. In fact, the contribution of Rural Savannah to total poverty in Ghana has consistently been increasing from about 33 percent to about 50 percent in 2005/06. Even if poverty in Savannah has been declining in the last seven years its higher share of Ghana's poor is



due to the fact that poverty have been declining even faster in the southern part of the country (Ghana Statistical Service, 2007).

The present vegetation is believed to have been derived from high forest resulting from human activities in the form of bush burning, cultivation, livestock grazing and wood cutting for fuel and building. A few common trees now surviving are fire resistant or fire-hardy characterised by thick barks and have the ability to produce from dominant buds or woodland comprising mainly patches of forest which may also occur along river courses and traditional protected areas (Kasanga, 1992).

Agriculture and natural resource management in Northern Ghana is going through difficult times evidenced by a down ward trend in agricultural productivity and natural resource management. About 90% of the population is engaged in subsistence farming and depend largely on natural resources. The decline in agricultural productivity and increase in poverty has been attributed to misuse of natural resources through the indiscriminate felling of trees reflecting in increased deforestation, bush burning, inappropriate environmental farming practices, pollution and overgrazing which has led to significant climatic change, affecting agricultural productivity adversely. In addition poor resource users who do not have land tenure security and or rights have little or no incentive to invest in sustainable land management. Instead they tend to focus on meeting their short-term economic needs to the detriment of the environment (Millar, 2003).

The study focused in 10 selected communities in the East Mamprusi district.

### **East Mamprusi District**

The East Mamprusi District is one of the districts in Northern Region. Gambaga is its capital. It is located to the north-eastern part of the Region. To the North it shares boundary with Garu Tempane, Bawku West and Talensi Nabdam districts in the Upper East Region and to the East, Bunkprugu Yunyoo district. The Gushiegu and the Saboba-Cherepone Districts border it to the South. The West Mamprusi District is to the west of the district.

The District experiences a single rainfall regime in a year from around April to October after which it comes under the influence of the tropical continental air masses. The mean annual rainfall is about 1000mm to 1150mm (source; East Mamprusi District Assembly, MTDP, 2002-2004).





The White Volta, which enters the region in the northeast is joined by the Red Volta near Gambaga are important drainage features in the district. The District lies in the interior woodland savannah belt and has common grass vegetation with trees like sheanut trees, baobab, and acacia. Grasses grow in tussocks and can reach a height of 3 metres or more. There is a marked change in vegetation depending on the two prevailing climatic conditions. Majority of the people use grass to roof their houses. Animals graze on the grasses during the rainy season. The sheanut tree is of great economic value for women who pick the nut and process for sheabutter (source; East Mamprusi District Assembly, MTDP, 2002-2004).

The population of the District, according to the 2000 Population and Housing Census is 180,877 of this figure 92,332 are female. The average density of population is 59 persons per square kilometre.

The wider environment suffers from continuous bushfires every year. In the dry season herdsmen, hunters and farmers deliberately set bush fires to the Savannah grass to promote new growth of grass for cattle. Unfortunately there are no fire posts or active fire fighting Volunteers in the district.

Agriculture is the District's main economic activity and it provides employment for about 83% of the working population. The bulk of the District's agricultural production depends on small-scale farmers whose holdings vary from a hectare to twenty hectares. Maize, millet, sorghum, beans and groundnuts are produced on large scale. In almost every house, goats, sheep and chicken are reared for domestic use as well as for cash.

Those who live along riverbanks and big streams mostly do fishing in the dry season. Dry season gardening is also practised during the dry season in some communities to produce vegetables such as bean leaves and tomatoes.

The women mostly engage in 'pito' (a local beer) brewing, sheabutter extraction, retail trading activities, pottery works and selling of cooked food. Sheanuts picking and processing fluctuates according to each year's harvest. Majority of rural farmers are poor mainly due to over-dependence on agriculture (food crop production) which is done on small-scale subsistence level yearly. Hard core poverty affects other facets of the people's lives.





Industries in East Mamprusi District are at a basic stage. The sector is dominated by small-scale activities using mostly indigenous technology. These include Processing of shea butter and extraction of groundnut oil, processing of `dawadawa, bicycle Repairs, Blacksmith, 'Pito' Brewing, Vulcanising, Weaving of traditional textiles and baskets Tailors and Dressmakers, Carving, and soap making (source; East Mamprusi District Assembly, MTDP, 2002-2004).

### 3.6 Sampling Method and Sample Size

In research the rationale is to make generalization or to draw inferences based on samples about the parameters of population from which the samples are taken (Yin, 1993). Hence, Miller (1991) concurred that the researcher needs to select only few items from the universe for the study purpose. It is further argued that a study based on a representative sample is often better than one based on a larger sample or on the whole population for there is no need interviewing large number of people saying the same thing. The size of a sample should neither be excessively large, nor too small. It should be optimal. This however, according to Karma, (1999) should be at the discretion of the researcher. While deciding on the size of a sample, the researcher must determine the desired precision and also an acceptable confidence level for the estimates (Saunders et.al., 1997). An optimal sample is one which fulfils the requirements of efficiency, representativeness, reliability and flexibility.

My choice of the sample size was influenced/informed by the following factors:

- The size of the population.
- The specific population parameters of interest.
- The cost of study also influences the size of sample.

In the light of the above, two main sample techniques were adopted and applied for the study. These are Probability sampling and Non-probability sampling (Twumasi, 2001).

Probability sampling, also known as 'random sampling' or 'chance sampling' gives every item in the universe an equal Chance of inclusion in the sample. Examples includes simple random and cluster sampling. The y would consider using these types. This technique is chosen because it ensures "the law of statistical regularity which states that if on an average the sample chosen is a random one, the sample will have the same composition and characteristics as the universe" (Yin, 1993:74).



It is often however, impossible to do strict probability samplings in the field. Other alternatives are appropriate under different circumstances.

The Non-probability sampling such as the "deliberate sampling", "purposive sampling" or "judgement sampling" procedures was used (Bernard, 1988). In this sampling procedure, the researcher purposively choose the particular units of the universe to constitute the sample on the basis that the small mass that they so select out of a huge one will be typical or representative of the whole (Yin,1993). Thus, the judgement of the researcher plays an important part in this sampling technique. The importance of adopting this design is the relative advantage of time and money inherent in the sampling. This is also so when the primary interest of the researcher is in understanding quantitative and rational issues other than quantitative problems pertaining to how, how often or to what degree a particular attribute or characteristic is distributed.

Given this background, information and the need for the identification of the various , formal service providers, policy makers and implementers and traditional institutions for the management of NWFPs and the primary collectors, processors, marketers and users of the products, purposive sampling technique was used to identify them in the sampled communities.

In the light of the above discussions the samples for the study area are as follows:

The District under study, East Mamprusi falls under the Mamprugu traditional council with divisional and community traditional authority system.

**TABLE 3.1: ZONES, SAMPLED COMMUNITIES AND NUMBER OF RESPONDENTS**

<b>Zone/area/town council</b>	<b>Communities in Forest area</b>	<b>Number of respondents</b>	<b>Communities in Non forest area</b>	<b>Number of respondents</b>
Langbensi	Tangbini	10	Wudua	10
Gambaga	Gbangu	10	Namiyela	10
Nalerigu	Dintigi	10	Nagboo	10
Sakogu	Bongni	10	Soasogi	10
Gbintiri	Naagbai	10	Gbandaa	10
<b>5</b>	<b>5</b>	<b>50</b>	<b>5</b>	<b>50</b>

Source: Field Data, 2009

As indicated in Table 3.1 above the study area is further divided into 5 zones or area/Town councils. Ten (10) communities were sampled. 5 in forested area and 5 in non forested area. This offered the opportunity for comparative analysis of the issues under study in both environments. In total one hundred (100) respondents comprising traditional institutions managing NWFPs and



NWFP extractors, processors, marketers and users were interviewed. 9 service providers, policy makers and implementers (as EPA, FSD, MOFA and DA as well as NGOs) were also interviewed. Key informants were identified purposively and interviewed randomly on broad areas as follows:

- NWFPs in the context of resource users in Northern Ghana
- The contribution of NWFP extraction, processing and marketing to livelihoods in Northern Ghana
- The management systems for NWFPs in rural communities in Northern Ghana
- Policy implications for the role of NWFPs in rural livelihoods and economy in Northern Ghana

This however, was combined with Participatory Rural Appraisal tools where the research team and I engaged in discussions with groups (men and women) and individuals in critical arenas (de Vries, 1991). More of such tools will be discussed in the data collection techniques. Information was collected from government agencies operating in the district pertaining to their relationship and involvement with NWFP related stakeholders at the various levels.

### **3.7 Data Collection Approach**

There are two major approaches used in social research in gathering data (Miller, 1991). These are the Primary and Secondary sources. It is, however, important to note that the selection of a particular approach to collect data must be decided upon in the light of one's problem, the purpose of the study, the resources available and the skills of the researcher. In selecting a method for data collection, the socio-economic-demographic characteristics of the study population play an important role. Some population for a number of reasons, may not feel either at ease with a particular method of data collection or comfortable to express opinions in a questionnaire for example. Therefore, in making a decision on the type of data collection method, the researcher must keep in mind the type of people he is dealing with, the nature of the social situation, the mood of the social environment and the psychology of the people (Grady, 1998).

Accordingly, it is necessary for the researcher to use more than one method in data collection. In the light of the above discussion data was collected from primary sources through interviews, observation and questionnaires. While secondary data obtained through documentary sources such as books, journals, magazines, internets and other earlier researches on the subject matter. Details of how these approaches were applied in the research are outlined as follows:



### 3.7.1. Interviews

Karma (1999) defined interview as any person-to- person interaction between two or more individuals with a specific purpose in mind. Interviews are classified into unstructured and structured. The two classifications were used in the study. In using the unstructured interview approach, also known as the in-depth interview, a framework was developed to guide the interview process. The rationale for using this approach was to enable me collectively engage with group of respondents within which questions can be formulated and asked spontaneously as the interview progress. This approach also allowed the respondent to freely express their opinion. This therefore, supports Yin's (1993) view that a good interview is one in which the interviewee takes over the control of the interview situation and talk freely. Hence, this approach is intended to solicit in-depth information on traditional natural resource management practices and the contribution of NWFPs to rural livelihood.

### 3.7.2. Questionnaire

It is a written list of questions, the answers to which are recorded by respondents. The respondents therefore read the questions, interpret what is expected and then write down the answers. The questionnaire approach was adopted and used on both the formal and non-formal institutions including resource users. Saunders et.al, (1997) argued that the choice of using a questionnaire is influenced by a variety of factors as follow:

- Characteristics of the respondents from which you wish to collect data;
- Importance of reaching a particular person as respondent;
- Importance of respondents answers not being contaminated or distorted;
- Size of sample you require for your analysis, taking into account the likely response rate;
- Type of questions you need to ask to collect data and;
- Number of questions you need to ask to collect your data

In the light of the above my choice of using the questionnaire was based on the fact that: the target respondents are literate and scattered over the geographical area. Hence, self-administered questionnaires were used to elicit information from service providers, policy makers and implementers (as EPA, FSD, MOFA and DA as well as NGOs) that are related to savannah woodland resources. On the other hand interviewer-administered questionnaire was conducted on the non-literate respondents. This enabled me ensure that the respondent is the person purposefully sampled for questioning.



### **3.7.3. Observation**

Karma (1999) defined observation as a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place without asking the respondent. He further outline the basic conditions under which it is most appropriate to observe as: learning about interactions, functions and behaviours in a group. This is more so relevant in situations where accurate information cannot be elicited by questioning. This approach was relevant in obtaining data during preliminary visits to obtain information on the geo-physical setting, location of NWFPs, identification of relevant institutions for woody savannah resource management. Observation however, was non-participant as participant observation requires that the researcher live with and participate in the daily activities of the people under investigation over a period of time.

### **3.7.4. Secondary sources**

Stewart and Kamins (1993) as cited in Saunders et.al., (1997) argued that in using secondary data you are at an advantage compared to another researcher using primary data because the data already exists, you can evaluate them prior to use. They further argued that the time you spend evaluating potential secondary data source is time well spent, as rejecting unsuitable data earlier can save much wasted time later. In the light of this, earlier work done that provides the required information on the subject matter was reviewed. Hence, a major source included documentary review. Documents here are used to mean information on magazines, books, journals, and the internet among others on the subject matter that will be elicited. Aside, information was sort from government agencies and non-governmental organizations that are linked to the subject matter

## **3.8 Stages of Data Collection**

The study was conducted in three stages: the reconnaissance survey, main survey and in-depth survey (Millar, 1996). In these phases, special data was collected on the management of natural resources over time by traditional institutions and non-traditional institutions.

The study started with the Reconnaissance Survey. This phase entailed initial visits to familiarise, establish linkages and rapport, and build relationships with the communities. This study also looked for and identified relevant traditional institutions (Chiefs, and non-traditional institutions (EPA, FSD, MOFA and DA as well as NGOs), groups and individuals in NWFPs related activities. Three generational family units in relation to the issues of NWFPs was also identified and notified



for the main survey stage. The various age groups were also clarified here. This phase covered a period of one Month. This then lead to the Main Survey phase.

In the Main Survey phase, the focus was to collect data on how community members have through the collection, extraction, processing, marketing and utilisation of NWFPs improved their livelihoods. It included the management of NWFPs by traditional institutions and how non traditional institutions such as the governmental and non governmental agencies have provided support to communities on NWFPs related activities. This therefore required analysing trends of how NWFP has contributed to the livelihoods of community members over generations. In this way the, "three generational perspective" (Ouden, 1989:170-180 as cited in Millar et.al., 2004), made it possible to study the processes of change taking place. In this regard, family units with three generations: the grandparents, parents and children were interviewed on how NWFPs have contributed to livelihood security and its management spread across the 3 generations. These family units cut across traditional institutions and relevant groups and gender as related to NWFP activities identified in phase one. Other methods such as Appreciative Enquiry (Murrel, 1999) were used.

The Appreciative Enquiry approach (Murrel, 1999), enabled the researcher to focus more on the community's strength, potentials and achievements in relation to the extraction of NWFPs for rural livelihoods along generational lines. This phase took one month.

The last phase, the In-Depth study to deepen the understanding of specific issues that came up in the previous two phases. In this study various supplementary information was collected through the use of Case Studies and discussions. Follow up visits were made to relevant respondents through the use of "tracer surveys" or "pathways analysis" (Springer-Heinze et.al., 2003) to beef up relevant data. This phase lasted for one month.

### **3.9 Data Analysis**

Karma (1999) referred to data analysis as the computation of certain measures along with searching for patterns of relationship that exist among data-groups. In analysing data in general, Yin (1993) also agrees that a number of closely related operations are performed with the purpose of summarising the data collected and organising them in such a manner that they answer the research question.

The data analysis employed both qualitative (descriptive) and quantitative (statistical) approaches to examine key issues at stake.



In the light of the above, qualitative data analysis was made at the same time during the data collection process and after the over all data was collected. This goes to support Yin (1993) view that data analysis should not be a separate step coming after data collection but a continuous and simultaneous process. However, the statistical analysis was done later in the office and inferences cross-checked in the field.

In the data collection process, qualitative field notes captured on daily basis, historical events, conversations, interviews and stories on NWFPs livelihood related issues during group discussions and interactions with specialised groups. This was analysed after the day's work. The rationale was to keep track of important events/ issues that crop up in the day's work and prepare adequately for the next day. It was also to look for consistencies and inconsistencies between knowledgeable informants and in so doing find out why informants agree or disagree on important issues on the subject matter.

In quantitative analysis, simple quantitative operations from questionnaires were tabulated and processed using SPSS. The use of graphs, charts, frequencies , and averages attracted statistical considerations using SPSS (Brown, 1996). The overall data analysis was then a combination of the two approaches (qualitative and quantitative) which reflected the sum total of the daily analysis. Data analysis is lasted for one Month.

### **3.10 Departure from Plans and Lessons Learnt**

#### **3.10.1. Modification**

The initial modification had to do with the choice of communities for the study and factors influencing it. The initial consideration for the choice of communities was those fringing forest areas in the district. However during the reconnaissance survey to communities, members, chiefs and elders including relevant stakeholders such as FSD and MOFA, it came to light that it would be useful to conduct the survey keeping in mind the 5 zonal areas of the district. In addition it was suggested that the survey areas be sampled along the lines of "forested" and "not forested" areas of the district. These inputs by the stakeholders informed the sampling of the 10 communities bringing the research closer to being representative and meeting the objective for setting it up. The Three Generational Approach planned to interview children, parents and grandparents along the same functional groups related to natural resource and NWFPs issues faced some challenges as





family units of the same functional groups had either migrated, died or married out, Grand parent, parent and children from the same compound and part of the management, extraction, processing and trading system of Natural resources including NWFPs in the community were interviewed as a modification to the initial plan.

### **3.10.2. Lessons Learnt**

The following lessons were learnt during the data gathering and analysis stage and are relevant for future research:

- Community participation in the design of the research instruments/tools through a validation process generate tools/instruments that can provide the information required to meet the research objectives
- Triangulation by focus group discussions, case studies and key informants interviews is an answer to efficient and reliable data collection



## CHAPTER FOUR

### FINDINGS AND DISCUSSIONS

#### 4.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS

##### 4.1.1 Introduction

This chapter presents and analyses the socio-demographic characteristics of the respondents. Relevant aspects of the characteristics that hinge on Management of Non-Woody Forest Products (NWFPs) and Livelihoods issues are discussed. These include; the age and status in the community, gender status and community institutions and level of education and status in the community of the respondents. The following presents detailed analyses of the characteristics.

##### 4.1.2 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 fields of endeavours while the younger ones learn from them, as such, they occupy relevant leadership positions in the community either by succession, inheritance or parents vocation. To either reject or accept this notion, 1 cross-tabulated the relationship between Age and Statuses in the study district. Table 4.1 gives a picture of the situation.

**TABLE 4.1: AGE AND STATUS IN THE COMMUNITY**

Age	Status in Community						Total
	Chief	Clan Head	Magazia	Diviner	Community member	Other	
	Number	Number	Number	Number	Number	Number	
15-25	0	0	0	0	6	0	6
26-35	0	0	0	1	13	2	16
36-45	0	0	2	0	25	6	33
46-55	1	1	1	0	25	4	32
56-65	0	0	0	1	9	3	13
<b>Total</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>78</b>	<b>15</b>	<b>100</b>

Source: Field Survey, 2009

Table 4.1 depicts age groups range from 15 to 66+ years and above of respondents of various statuses in the district. From the Table 4.1, 16 respondents out of the total responses were recorded



for age group 26-35. The modal age group for all the statuses in the district was 36-45 representing 33 of the total responses. In this age group the frequencies were 2, 25, and 6, Magazias, Community Members and Others respectively. The others comprised of elders, assembly persons and executive members of community groups. This was followed by age group 46-55 which recorded a total of 32 responses representing 1 for Chief and Elders, 1 for Clan heads, 1 for Magazias, 9 for Community members, 0 for Diviners/soothsayers and 3 for other institutions. The lowest response for all the statuses in the district was within the age group 15-25. In this age group nothing was recorded for all the statuses in the district except 6 respondents for the Community Members. Unfortunately, this age group falls within the younger generation.

I probed further in a follow- up discussion using the Three (3) Generational Survey approach (Ouden, 1989 as cited in Millar et.al., 2004) to find out why the middle age group constituted a higher proportion of the structure of the respondents. Responses of parents and grandparents did not make any significant difference as they attributed the pattern to migration and apathy among the young ones to succeed parents' vocation such as rainmaking, soothsaying and divination from their parents, hence, the aged is compelled hold on it.

The youth on the other hand claimed they are excluded by the elders in decision making processes and also sometimes threatened in their efforts to contest leadership positions such as Chieftaincy with the elderly. An experience was recounted by a Respondent..... *"I know I was haunted by my opponent immediately I declared my intention to also contest for the vacant chieftaincy title in the community. I was bitten by a snake shortly two days after my intention to contest was made known. My efforts were frustrated As a prince and an educated youngman, I thought it was about time to revive our gate which has been shut for a long time"*.

Rainmaking, soothsaying and divination were described as a "call" by the youth and therefore they were quick to say they are not yet called.

#### **4.1.3 Gender Status and Community Institutions**

The findings are that men dominate the rural scene in the leadership and decision making structures and generally exclude women (Apusigah, 2004). A great majority of traditional governance structures in the district did not have women occupying positions such as chiefs, council of elders, clan heads etc as a result, their direct voices in decision making process is greatly constrained but indirectly women have a big influence on the so-called men decision in their own



subtle ways. Old women and first wives are considered as "men" and so are parts of decision makers.

Table 4.2 show data on the number of males and females respondents of the community in leadership and decision making structures. Out of the 100 respondents, 74% and 26% were males and females respectively. These responses were further disaggregated as follows: The total of 1 respondent for Chief and elders was made up of 1 males and 0 females while that of Clan heads (total of 1 respondents) constituted 1 males and 0 females. On the other hand, Community Members recorded 57 for males and 21 for females and 0 for males, 3 for females in the case of the *Magazias*. Diviners and other institutions attracted values between 1 and 14 for males and females as in Table 4.2

**TABLE 4.2: GENDER AND STATUS IN COMMUNITY**

Gender	Status in Community						
	Chief	Clan Head	Magazia	Diviner	Community member	Other	Total
	Number	Number	Number	Number	Number	Number	
Male	1	1	0	1	57	14	74
Female	0	0	3	1	21	1	26
<b>Total</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>78</b>	<b>15</b>	<b>100</b>

Source: Field Data, 2009

From the statistics in Table 4.2 gender and the composition of community institutions in leadership and decision making structures remain a challenge in the district. The data revealed male dominance at the various levels of the community institutions except for the *Magazia* institution which is generally nominated on the basis of their leadership qualities by the women themselves. Essentially, the institution of chieftaincy and *tindanas* in the district is all male affairs as indicated in Table 4.2. This however, contrasts with recent study (UDS/Care International, 2004) in West Mamprusi District which shows that women *tindanas* referred to as *tindapoa* wield the same authority as their male counterparts. Even though lower percentages were recorded for clan/family heads, diviners, rainmakers and other institutions, they were described as a mix of both sexes.

In the light of this, I agree with Apusigah, (2004) argument that important decisions regarding access to critical natural resources (Non-Woody Forest Products) management issues may be taken by the males.



#### 4.1.4 Level of Education and Status in Community

Education is perceived as the key to development, hence it enables the individual to realize his or her full potential so as to contribute to the overall processes of community and national development. The uneducated is often frowned upon in formal sector leadership and decision making structures. This however, may be insignificant in the informal sector leadership and decision making structures. The veracity of this statement can be ascertained as I turn on to Table 4.3 to interpret the relationship between level of education and ones status in the community.

**TABLE 4.3: LEVEL OF EDUCATION AND STATUS IN COMMUNITY**

Level of In Education	Status in Community						Total
	Chief	Clan Head	Magazia	Diviner	member of Community	Other	
	Number	Number	Number	Number	Number	Number	
Primary School	1	0	1	0	8	1	11
Middle/JSS	0	0	0	0	3	1	4
Vocational/Technical	0	0	0	0	1	0	1
Secondary School	0	0	0	1	10	2	13
Post Secondary	0	0	0	0	2	0	2
University	0	0	0	0	2	1	3
No formal Education	0	1	2	1	52	10	66
<b>Total</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>78</b>	<b>15</b>	<b>100</b>

Source: Field Data, 2009

Table 4.3 shows that the level of education and one's status in the community range from primary to university education. Out of the total respondents interviewed on the level of education, 11 respondents received primary education. Of those who received primary education, 1 was recorded for Chiefs, Magazia and others (elders, assembly persons and executive members of community groups). Also, there was zero level of education at the middle/JSS, secondary and post secondary, vocational/technical, as well as university education for the chiefs, clan heads and magazias. In all the institutions, other community members had educated up to university education as indicated by 1 respondent in Table 4.3. A greater proportion of the respondents (52) had none of the levels of education or had not received any formal education.



On the whole it is obvious that, generally, the level of education among the communities is low (52 respondents out of the 100 interviewed had no formal education). This confirms the high rates of adults who have no formal education in our rural communities. These findings however, support recent call for traditional authorities in our communities to have some level of education so as to effectively champion development actions, hence, do agree with Dankwa (2004) assertion that, contemporary chiefs in Ghana need some level of education for effective community development

#### **4.1.5 Summary and Conclusions**

The findings show that the modal age group within the community institutions is within age group 36-45. Two reasons were attributed to this: the first is attributed to seniority in the traditional leadership system which allows for the elderly in succession as a result of their experiential knowledge in various fields of authority. The second is lack of apathy among the youth (15-25) to succeed parents' vocation due to western education and religion. Aside, the findings also revealed male dominance at the various levels of the composition of the community institutions except for the *Magazia* institution which is generally considered "modern" and nominated by women themselves on the basis of their leadership qualities. A great majority of traditional governance structures in the district did not have women occupying positions such as chiefs, council of elders, clan heads etc as a result, their voices in decision making process is greatly constrained, hence, the clarion call for gender composition in our traditional leadership structures in the decision making processes still remains a challenge in the district.

The level of education among traditional institutions was generally found to be low (5 out of 7 traditional leaders (chief, clan head, *magazia* and diviner) never had formal education) in the district as the level of education and ones status in the district was insignificant in leadership and decision making processes among traditional leaders in the district.

### **4.2 LIVELIHOOD SECURITY**

#### **4.2.1 Introduction**

Majority of people heavily rely on their natural resources for their livelihoods and other performances. As part of the natural resource are the NWFPs. This section therefore, analyses what constitute livelihoods in the East Mamprusi district and how they contribute to household security in the area of health care, Education, food security and other investments opportunities.



#### 4.2.2 Sources of Livelihood/Income in the Community

Table 4.4 show data sources of livelihood activities and the level of engagement of farmers in the various enterprises.

**TABLE 4.4: SOURCES OF LIVELIHOOD/INCOME IN THE COMMUNITY**

Livelihood sources	Frequency of responses	Percent
Farming (Crops & livestock)	99	99
Dry Season Gardening	19	19
Fishing	2	2
Hunting	18	18
Gathering Processing and Marketing of NWFPs	93	93
Petty Trading	27	27

Source: Field data, 2009

The study showed that farmers were engaged in different livelihood activities in combinations of farming (crops & Livestock), dry season gardening, fishing and hunting. The rest are gathering, processing and marketing of NWFP and petty trading. Of the responses of farmers 99% were found to be engaged in farming which is the main stay of rural livelihoods in northern Ghana with gathering, processing and marketing of NWFPs constituting 93%. The least patronize of the livelihood activities were that of fishing (2 %) which could be attributed to the few major river bodies within the East Mamprusi district. Petty trading, hunting and dry season gardening attracted values between 27% and 19%. This picture demonstrates a portfolio of activities with different members of the family seeking and finding different sources of livelihoods to support in different ways in different times of the year' (Chamber, 1999).

However the most prominent source of livelihood from the study apart from farming is gathering, processing and marketing of NWFPs (93 %). The NWFPs comprise of medicinal plants, materials for construction of houses, bush meat, wild food and supplementary livestock feeding. The rest are materials for construction of musical instruments, rituals and sacrifices. The study further revealed in support of the notion that different end users use NWFPs in different ways with different levels of intensity to ensure their family and personal well being. Also whereas men more extensively explore the savannah species for medium to large scale uses e.g. housing construction, charcoal burning and for medicinal purposes, women tend to operate on a much smaller scale through their domestic and organisational responsibilities i.e. Collection of fuel wood, processing, gathering fruits from fields as well as identifying, collecting and processing medicinal plants to support the health care of families and for the treatment of other community members (Musah, 2002).



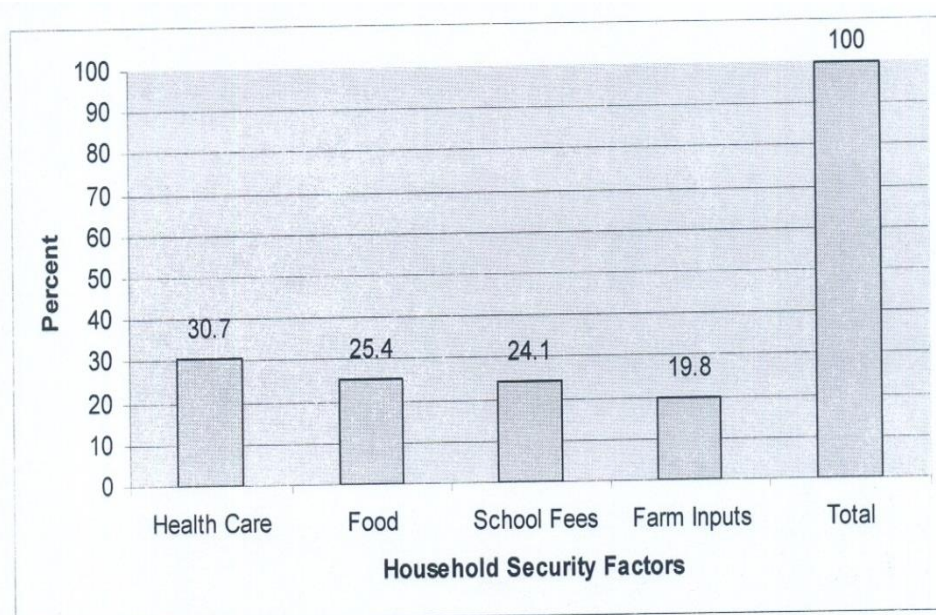


In the light of this, I support the argument of Pimentel *et al.* (2005) that NWFPs or NTFPs play a significant and often critical role in providing subsistence and cash income to a large part of the world's population. None the less the main economic activities within the Northern savannah zone are the production of annual crops (cereals, legumes, and root crops), cotton and livestock (Becker, 2003).

#### 4.2.3 Contribution of the Livelihood Options to Household Security

Household security constitutes the ability of the household to have access to health care, food, school and farm inputs. From the research findings as depicted in figure 4.1 various livelihood options contribute to household security with that of farming and gathering processing and marketing of NWFPs contributing the most to family upkeep and well fare in the area of provision of health Care (30.7%), Food (25.4%), School Fees (24.1%), and farm inputs (19.8%), in order of priority.

**FIGURE 4.1: LIVELIHOOD CONTRIBUTIONS TO HOUSEHOLD SECURITY**



**Source: Field Data, 2009**

The trend shows that respondents place premium on the health care of the family followed by provision of food or ensuring that the family is food secured. This is closely tied to the capacity to pay school fees which is the next option to making food available for the family upkeep. The availability and management of natural resource including NWFPs are crucial for the sustenance and livelihoods of communities of the district as their social, cultural, health status and economic activities are very much dependent on the natural environment. In the light of this, the NWFPs are



critical as part of the capital assets of rural livelihood systems and its contribution to livelihood security in Northern Ghana cannot be over emphasised.

#### **4.2.4 Summary and Conclusions**

On the whole it is obvious that, generally gathering processing and marketing of NWFPs is a key rural livelihood activity engaged in by farmers in the district which contributes to the household security in terms of provision of family health care, food, education and farming enterprise. It is further buttressed by arguments raised by studies conducted in drought-prone areas, where the likelihood of harvest failure makes the rural population far more active in non-agricultural activities like trade and processing of NWFPs. The economic analysis centres on household efforts to preclude shortfalls in basic needs provisioning by seeking a number of income-earning activities which avoid year-round reliance on agriculture and offset the risk of production failure in any one activity

### **4.3 CAPACITY OF NON-WOODY FOREST PRODUCTS (NWFPs) TO CONTRIBUTE TO IMPROVED LIVELIHOODS AND SOCIAL DEVELOPMENT**

#### **4.3.1 Introduction**

This aspect hinges on the capacity of NWFPs and how it influences rural livelihood and social development. Analysis have been made around issues of community knowledge of NWFPs, an assessment of NWFPs in community forest and reserves and its extraction, processing and marketing. The contribution of NWFPs to incomes and other benefits are also analyzed. The analysis is presented in figures and tables as follows.

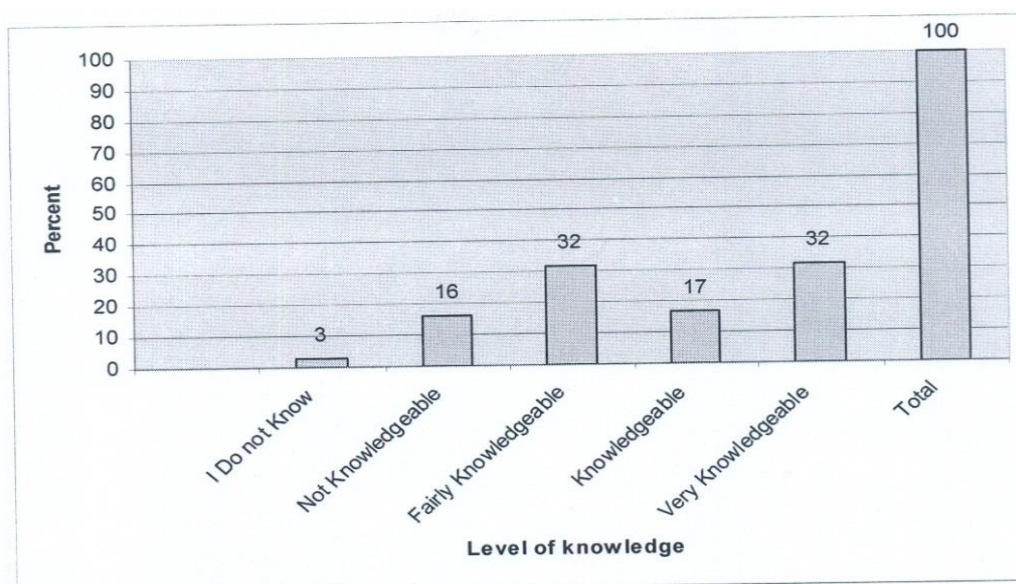
#### **4.3.2 Community Knowledge of NWFPs and Its Relative Availability in Community Forest and Reserves**

Knowledge of basic resource on which people livelihood are dependant on presupposes that some amount of capacity of its uses and utilisation are known by the extractors, processors, marketers and users alike. This assertion can be said of the knowledge systems of the study area as statistics from the research shows in figure 4.2.

Figure 4.2 indicates that of the 100 respondents interviewed, 81% of have knowledge of NWFPs from the level of being fairly knowledgeable to very knowledgeable.



**FIGURE 4.2: COMMUNITY KNOWLEDGE OF NWFPs**



**Source: Field Data, 2009**

16% of respondents are not knowledgeable while 3% have no idea at all of NWFPs. In probing further the respondents underscored their understanding of NWFPs by calling the functions they play in rural households, agro-forestry and community forestry production systems and how it sustains rural life. These functions include food production and food security, forest medicines, house and musical instruments, construction materials, income generating by gathering, processing and trading extractive products such as leaves and fruits. It includes material for performing rituals and sacrifices. From the studies, it came to light that community forests 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 instruments and those for the performance of rituals and sacrifices. However, though there is relative abundance of these resources, it is worth noting that the forest cover of the north is in decline due to poor management practices and over-exploitation of the resources. The knowledge base of communities in northern Ghana of NWFP confirms Wicken (2003) definition as any and every natural resource from the forest except timber.



### 4.3.3 NWFPs Extraction, Processing and Marketing

The extraction and processing of NWFPs forms a critical aspect of the path way to the development and value addition of NWFPs. The study revealed that locally, community members have developed indigenous ways of extracting and processing various forms of NWFPs. Table 4.5 shows the various forms of extraction and processing of different types of NWFPs.

**TABLE 4.5: FORMS OF EXTRACTION AND PROCESSING OF VARIOUS TYPES OF NWFPs**

Type of NWFP	Indigenous method of Extraction and processing
Bush Meat	Animals Killed with Gun or Trapped and killed, then Smoked or skinned before smoking
Medicinal Plants:	Respective plants roots uprooted, leaves harvested washed and boiled in Water; Roots/bark of the tree cut into pieces and burnt into Charcoal or sun dried grind/pound to powder
Construction Materials	Grasses harvested with Sickle and weaved with fiber into roofing materials
Energy Materials	<ul style="list-style-type: none"> <li>○ Dry /dead tree branches gathered and covered with sand and leaves. Fire is set to it from below and allowed to burn for 2-3 days through an incomplete combustion process to produce charcoal</li> <li>○ Dry /dead tree branches gathered and cut into pieces as fire wood</li> </ul>
Wild Food	<ul style="list-style-type: none"> <li>○ Shea nuts picked from tree, parboiled, sun dried, cracked to removed the seed, roasted, milled and processed through a process to extract oil. Waste use as plastering material</li> <li>○ Dawadawa picked from trees, parboiled and processes for consumption/sale. This also applies to local beans</li> <li>○ For honey extraction fire is use to scare the bees away and container used to collect the harvested honey</li> </ul>
Materials For Rituals and Sacrifices	<ul style="list-style-type: none"> <li>○ Trees e.g. Baobab are believed to be an ancestor at certain times of the year, strings of cloth are tied round the trunk of the tree to signify recognition and or to fulfill a promise made</li> <li>○ Some wild fruits e.g. black berries are boiled and drank believing</li> </ul>



that it provides immunity to ailments and attack of bad spirits

Source: Field data, 2009

However the availability of these products is seasonal in nature and most abundant during the raining season within the period of April to September. An in-depth interview discussion revealed that demand is mostly higher than supply for medicinal products in particular. These products are marketed in communities and neighbouring ones and the major markets centres in the district such as Gambaga, Nalerigu and Langbensi and other district and regional markets such as Walewale and Techiman; and Bolgatanga respectively. External market demands of neighbouring communities of Togo and Burkina Faso have been quite high especially for medicinal plant extracts. The relative importance of income-earning opportunities afforded by NWFPs varied considerable from village to village. Overall 96 % of those interviewed traded in NWFPs. The findings from this research collaborates Falconer,(1992), that the reliance placed on NWFPs gathering, processing and marketing depends not only on the availability of resources but also on the ease of access to markets , the existence of trade networks and skills acquired. However in the case of East Mamprusi district the trade networks and skills need to be enhanced to maximize the potential of the processing, preservation and trade in NWFPs. The study further revealed that Participation in NWFPs trade constraints for poor rural households in the district includes Poor linkages with urban markets, Lack of coordination between different actors in product chains, Lack of business planning skills , Other demands on household labour , Limited access to financial capital and Poor access to appropriate labour saving technology.

#### 4.3.4 Contribution of NWFPs to Incomes and other Benefits

For many people in the developing world, especially in rural areas, livelihoods are wrested not from a single occupation to which all their energy is devoted, but from a number of economic activities. NWFPs extraction processing and marketing constitute but one of the diversifying income opportunities for rural communities in northern Ghana. Table 4.6 represents the contribution of the various types of NWFPs to the annual income of community members from the marketing of NWFPs.

**TABLE 4.6: CONTRIBUTION OF NWFPs TO INDIVIDUAL ANNUAL INCOME**

NWFP	Annual Income Range						Total
	1-20GHC	21-30 GHC	31-40 GHC	41-50 GHC	51-60 GHC	61+ GHC	
	(%)	(%)	(%)	(%)	(%)	(%)	
Medicinal plants	8	5	1	2	0	0	16





Materials for Construction of Houses	10	2	1	2	0	0	15
Bush Meat	9	1	1	0	0	0	11
Wild Food	10	1	1	2	0	0	14
Supplementary Livestock Feed	8	4	2	0	0	0	14
Materials for Construction of Musical Instruments	10	1	1	2	0	0	14
Materials for Rituals and Sacrifices	16	0	0	0	0	0	16
<b>Total</b>	<b>71</b>	<b>14</b>	<b>7</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>100</b>

Source: Field data, 2009

A higher proportion (71%) of respondents receive their annual income from the various category of NWFPs in the 1-20GH¢ bracket with the most attribution being materials for rituals and Sacrifices (16%). The least in contribution to annual incomes within the 1-20GH¢ bracket is medicinal plants extracts and supplementary livestock Feed (8%). The annuals income bracket of 21-30GH¢ attracted 14% respondents with that of 31-40GH¢ and 41-50GH¢ attracting 7% and 8 % respectively. None of respondents had annual incomes within the range of 51-60+GH¢

The analysis shows that NWFPs contribution in the district to annual income of natural resource users is low, within the bracket of 1-20GH¢ It therefore goes to suggest that, income generated from NWFPs is used to fill a cash shortfall, not to make improvements in family health and nutrition (Gunatilake *et al.* 1993).

Browder (1992) argues that returns from NWFPs extraction are low relative to alternative types of land use. However not all studies report findings in agreement with an assessment of relatively low remuneration from extraction as Olsen (1997) found that the average daily income earned from NWPPs collection and sales is competitive with other income-generating activities..

I therefore support the notion that despite the low contribution of NWFPs to annual incomes in the district the development of the sector could make a positive difference. Development of the sector could be in terms of the sustainable management of the forest coupled with processing, packaging and marketing to include skills training for natural resource users. Such strategies have the potential of increasing the availability and market value of NWFPs and consequently contribute significantly to the annual income of communities.



The study also revealed that a wide range of NWFPs are commonly used in traditional ceremonies such as marriages, funerals, initiations, birth celebrations and conflict resolution.

#### 4.3.5 Summary and Conclusions

The findings revealed that community members are knowledgeable in NWFPs. 81% of respondents express having fair to high knowledge in NWFPs. The studies also 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 instruments and those for the performance of rituals and sacrifices. However although there is relative abundance of these resources it is worth noting that the forest cover of the north is in the decline due to poor management practices and over exploitation of the resources.

The relative importance of income-earning opportunities afforded by NWFPs varied considerable from village to village. Overall 96 % of those interviewed traded in NWFPs. The findings collaborate that the reliance placed on NWFPs gathering, processing and marketing depends not only on the availability of resources but also on the ease of access to markets, the existence of trade networks and skills acquired. However in the case of East Mamprusi district the trade networks and skills need to be enhanced to maximize the potential of processing and trading in NWFPs.

The analysis also shows that NWFPs contribution to annual income of natural resource users is low mostly within the bracket of 1-20GH¢. It therefore goes to suggest that, income generated from NWFPs is used to fill a cash shortfall, not to make improvements in family health and nutrition.

However not all studies report findings in agreement with an assessment of relatively low remuneration from extraction as other studies found that the average daily income earned from NWFPs collection and sales is competitive with other income-generating activities.

The study also revealed that Participation in NWFPs trade constraints for poor rural households in the district includes poor linkages with urban markets, lack of coordination between different actors in product 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.





## 4.4 COMMUNITY MANAGEMENT SYSTEMS FOR NWFPs

### 4.4.1 Introduction

This section discusses key issues on community traditional institutions and organisations for NWFPs, perceived NWFPs resource management systems by formal institutions, management systems 15 years ago, how resources were obtained for management, contemporary NWFPs management systems, capacity required for contemporary NWFPs resources management and challenges/problems with contemporary management systems.

### 4.4.2 Community Traditional Institutions and Organisations for NWFPs

Group discussions disclosed the structural relationship of community institutions in the management of NWFPs. In the structure, the spiritual world is seen as the driving force that regulates the performance of the other institutions in the management of NWFPs (Millar, 2003). The chief, placed at the highest level of the structure, is the traditional political figure who performs administration and judiciary functions in relation to NWFPs issues and therefore, has limited powers over lands outside his own family holding (Kasanga, 1994). According to Millar, (2003) the power position of the chief is mitigated by several parallel institutions. The spiritual world has a strong link with the earth priest and institutions such as the rain makers, soothsayers, diviners, fetish priest and sorcerers that has a spiritual role to play in NWFPs management issues but a weak link with the chief. The study shows that, earth priests are the descendants of the pioneer settlers and the ultimate authority regarding land and its resources in the district. They are therefore the only ones who are supposed to know and are known to the spirits of the land.

The clan and sectional heads are described in focus group discussions as performing sacrifices, managing sacred grove, allocating household lands to individuals and families and hold land and its resources in trust at the household level. The discussions further revealed that *Magazias* (women leaders) however, do not allocate or hold land in trust for the family but may hold land allocated to the elder son in the case of female headed households or widows. In supporting these findings, Millar (2005) also argued that when the man has all daughters they may have their own land but have to consult the male members of the family for its use. He further argued that, among the Builsas in Northern Ghana, when a woman comes from the *Tindanas* family, she has right to land ownership and can claim land when they are still in their father's home. They however, consult the circular chief on issues they cannot handle at the household levels in relation to NWFPs issues. These arguments however, agree with the findings in the district.



The family/household heads are empowered by the support of their family members. The families/individuals from the land holding groups hold the customary free hold interests in land (Kasanga, 1994). A stranger, not-subject of a clan, tribe or, 'skin', who wishes to acquire land must first seek the permission of a chief to settle in the area. If permission is granted, the stranger may contact any land holder or, most frequently, a family head for land as a gift or on some contractual basis. These same structures, according to respondents are also used for conflict prevention, resolution and management that borders on NWFPs Management issues in the district.

#### 4.4.3 Perceived NWFPs Resource Management Systems by Formal Institutions

Table 4.7 shows respondents perception of how NWFPs are managed in the district. Out of the 100 respondents, majority of respondents in the category of 76%, 55%, 43%, and 35%, acknowledged that NGO, FSD, DA and MOFA respectively are present and manage NWFPs to some extent in communities. Majority of the respondents (76%) are of the view that NGOs are mostly present in the community and effectively involved in the management of NWFPs issues in the district. NGO's mentioned included the Presbyterian Agricultural Station-Langbensi and Partners in Rural Empowerment and Development. Alternatively out of 100 respondents majority in the category of 72%, 56% and 27% are of the view that GNFS, EPA and NADMO respectively are not present in the community and therefore do not manage NWFPs.

**TABLE 4.7: PERCEIVED NWFPs RESOURCE MANAGEMENT SYSTEMS**

Institutions	Extent of management				Total
	Do not know (%)	Not present (%)	Present but do not manage (%)	Present and manage (%)	
FSD	14.0	24.0	7.0	55.0	100
MOFA	12.0	23.0	30.0	35.0	100
EPA	33.0	56.0	11.0	0.0	100
GNFS	25.0	72.0	3.0	0.0	100
NADMO	19.0	51.0	27.0	3.0	100
DA	11.0	28.0	18.0	43.0	100
NGOs	10.0	9.0	5.0	76.0	100

Source: Field data, 2009.

On the other hand, 14%, 12%, 33%, 25%, 19%, 11%, and 10% of respondents had no knowledge of the management activities of the formal institutions in the district in respect of FSD, MOFA, EPA, GNFS, NADMO, DA, and NGOs. It is evident from the responses that, majority of the respondents (76%) indicated that the management of NWFPs are facilitated by the NGOs. These



responses however, contrast with the informal systems of management of NWFPs. Community institutions are expected to be in control in the formulation of bylaws to effectively implement and adequately management NWFPs resources. Recognition and integration of community structures and institutions in the management system could constitute a holistic approach in NWFPs management. In this regard, I agree with fairhead and Leach (2004) argument that the alienation of local resource control to informal structures among others, accounted for NWFPs management failures in most parts of the third world.

#### 4.4.4 Management Systems 15 Years Ago

Various indigenous beliefs and practices have contributed to NWFPs management systems. Community institutions and systems played a key role in ensuring that those who break NWFPs management rules are punished. These collective actions in NWFPs management were expressed through religious beliefs, moral sanctions and a range of sacred and cultural practices. The resilience of these beliefs and practices stood the test of time in NWFPs management through the use of taboos, totems, traditional protected areas, moral sanctions and rules and regulations (Millar, 2004). The following analyses shows how these management systems enhanced NWFPs utilization and management.

Table 4.8 presents respondents views on how NWFPs were managed 15 years ago using the three generational perspective.

**TABLE 4.8: MANAGEMENT SYSTEMS 15 YEARS AGO**

Management Systems	Category of Respondents			Totals
	Grand Parents	Parents	Children	
Restrictions to traditional protected areas	22(48)	18(39)	6(13)	46 (100)
Adherence to taboos and totems.	17(47.2)	12(33.3)	7(19.5)	36(100)
Rules and regulations	4(30.7)	3(23)	6(46.3)	13(100)
Moral sanctions and fines	4(66.7)	2(33.3)	-	6(100)

Source: Field data, 2009

From Table 4.8 grandparents, parents and children's views were solicited on the management systems. Responses on management systems varied from generation to generation. Out of 46 respondents who indicated "restrictions to traditional protected areas" as a management system 15



years ago, 48% were grandparents, 39% parents and 13% children. On adherence to taboos and totems, 47.2%, 33.3% and 19.5% out of 36 respondents were recorded for grandparents, parents and children respectively on the management systems. The Table also shows out of 13 respondents 30.7%, 23% and 46.3% grandparents, parents and children respectively indicated that rules and regulations were the modes of NWFPs management. Whiles for "moral sanctions and fines" as a management system 15 years ago, 66.7% of the respondents were grandparents, 33.3% parents and none for children.

It is evident from Table 4.8 that traditional protected areas, adherence to taboos and totems and moral sanctions were the main modes of managing NWFPs 15 years ago as indicated by grandparents and parents. Experiences recounted during group discussions revealed that in the past, traditional societies adhered to taboos in the management of traditional protected areas and that the taboos restricted access to activities that are destructive to the environment as a result, sacred sites survived over several years and acted as reservoir for biodiversity. These findings also reflect Gorjestani, (2004) view on initial literature reviewed. These systems of management are however, unpopular with children and therefore not adhered to as indicated by low percentages in Table 4.8 Their knowledge on the use of taboos and totems and traditional protected areas in the management of NWFPs was low, they however mentioned government policies and community bye-laws as modes of managing NWFPs resources. They have faith in government institutions, service providers and agencies in the management of NWFPs resources. Nevertheless, they acknowledged that the management and use of NWFPs resources is very much depended on rules and regulations as indicated in the Table 4.8 hence, they play a role to ensure that those who break the rules are apprehended and punished. These regulatory mechanisms accounted for the survival of protected areas over time.

Available literature (Wardell, 2002; Katere, 1997) also points to the fact that early policies in the management of NWFPs were governed by rules, regulations and practices and inherited by the local people under the guidance of the legitimate local authority. This again confirm Gorjestani, (2004) argument that scholars have often use past management systems to question contemporary conservation and NWFPs management which have failed to recognize the important role played by local custodians and the extent to which they are influential in managing NWFPs resources.



#### 4.4.5 How Resources Were Obtained for Management.

Table 4.9 depicts perceptions of respondents on how resources were obtained for the management of NWFPs resources 15 years ago by the three generations. Respondents' views were indicated by grandparents, parents and children.

**TABLE 4.9: HOW RESOURCES WERE OBTAINED FOR NWFPs MANAGEMENT 15 YEARS AGO**

Resources	Category of Respondents			Totals
	Grand Parents	Parents	Children	
Fines from offenders	14(48)	15(52)	-	29(100)
Community contributions	20(40.8)	15(30.6)	14(28.6)	49(100)
Proceeds from sale of community resources	-	7(64)	4(36)	11(100)
Support from GOs and NGOs	-	5(45.4)	6(54.6)	11(100)

Source: Field Data, 2009

Out of 29 respondents who indicated "fines from offenders" as the main source of resources for the management of NWFPs 15 year ago, 48% were grandparents, 52% parents and none for children.. On the other hand out of 49 respondents who are of the view that resources for NWFPs management were obtained from "community contributions", 40.8%, 30.6% and 28.6% were grandparents, parents and children respectively. Nevertheless, of the 11 respondents from each category who indicated "proceeds from sale of community resources" such as land and "support from government and non-governmental organizations" as resources for management of NWFPs high percentages were recorded for parents (64%) and children (54.6%) and none for grandparents. Follow —up visits and discussions in the second phase revealed that, the sale of land in the regime of the grandparents as proceeds for NWFPs management was not practicable as land was for the living, the dead and the yet unborn, therefore land sale for cash was unacceptable but could only be given out for a token-a fowl and some quantity of tobacco for a specified period of time. The issue of NGO and GO support has also been a modern concept, this was not known by grandparents explaining why there was no response to that regard.



#### 4.4.6 Contemporary NWFPs Management Systems

Many have argued that contemporary NWFPs management issues in developing countries are along the dictates of western models while local cultures and institutions are often overlooked (Fairhead and Leach, 2004; Marglin, 1990). Table 4.10 shows how NWFPs are managed currently in the district.

**TABLE 4.10: CONTEMPORARY NWFPs MANAGEMENT SYSTEMS**

Management System	Frequency	Percent
Adherence to government policies	47	47.0
DA Bye-Laws	39	39.0
Community Bye-Laws	10	10.0
Community Volunteer Squads	4	4.0
<b>Total Responses</b>	<b>100</b>	<b>100</b>

Source: Field data, 2009

From the Table 4.10 out of the 100 respondents, 47% and 39% indicated that, adherence to government policies and the use of district assembly bye-laws were the main modes of managing NWFPs resources in the district. Ten percent 10% and 4% are also of the view that NWFPs are managed by the use of community bye-laws and volunteer squads respectively.

It is evident from Table 4.10 that more percentage (47%) of the respondents' show that NWFPs are managed by adhering to government policies on natural resources management in general. This may be due to wider sensitization on recent policies on forest, wildfires among others by government and non-governmental organization in the district.

This perception reaffirm the argument that, NWFPs policies are concentrated in the hands of the state while rural dwellers who had depended on the resources for generations are systematically marginalized, even though investigations in NWFPs resources management have shown conclusively that a great many local communities and institutions have been managing their own NWFPs resources effectively and creating institutional arrangements to ensure the basic protection of their NWFPs resources ( Wardell, 2003).

#### 4.4.7 Capacity Required for Contemporary NWFPs Resources Management

Resources required for contemporary NWFPs resources management were indicated by respondents in Table 4.11



**TABLE 4.11: CAPACITY REQUIRED FOR CONTEMPORARY NWEPS MANAGEMENT**

Support/Resource	Frequency of responses	Percentage
Logistical support	31	31
Education/training programmes	27	27
Commitment by community members	23	23
Financial support	74	74
Support (incentive package)	<b>81</b>	<b>81</b>

Source: Field data, 2009

From the Table 4.11 31 % of the respondents indicated logistical support for community NWFPs resource management, 27 % mentioned education/training programmes on resource management policies, 23 % showed commitment by community members, 74 % indicated financial assistance to traditional institutions while 81 % indicated incentive packages for community volunteer squads in NWFPs resources management as a way of motivating them to give off their best.

From the Table above, majority (81 %) of the respondents indicated their desire to be supported by way of incentives to enable them manage NWFPs in the district effectively. Available literature demonstrates that community institutions have been able to establish and maintain organisational structures and enforce mutually agreed rules on the use of NWFPs (Marsh, 2002; North, 1990). I also agree with Runge (1996) and Ostrom (1990) argument that where community organizations and institutions are given the opportunity and the necessary resources to develop their own management systems they would be in a better position to do so. Hence, they need to be supported where they are effective and promote them where they no longer exist in their efforts to manage NWFPs resources.

#### **4.4.8 Challenges/Problems with Contemporary Management Systems**

Even though trends in development acknowledge the virtues and capabilities of communities and their institutions in sustainable NWFPs Management, community institutions are still significantly faced with challenges as far as NWFPs management issues are concern.





**TABLE 4.12: CHALLENGES/PROBLEMS WITH CONTEMPORARY MANAGEMENT SYSTEM**

Challenges	Frequency of responses	Percentage
Over Dependency on NWFPs for Livelihoods	68	68
Limited alternative Livelihoods Opportunities	57	57
Increase In Population	56	56
Uncoordinated Policies and poor enforcement by Users, Government Agencies and Mamprugu traditional council	50	50
Uncooperative Youth and community members	22	22
Political Interference	2	2
Limited Knowledge on NWFPs/its Management	29	29

Source: Field data, 2009

Table 4.12 depicts challenges/ problems faced by communities and their institutions in contemporary NWFPs management. The major challenge by communities in NWFPs resources management was over dependency on NWFPs for livelihoods as indicated by 68% of the responses representing 68 respondents. This was followed by 57% of the respondents who indicated limited alternative livelihoods opportunities as a challenge. Other responses recorded 56% and 50% for increased in population, uncoordinated policies and poorly enforced by users, government agencies and Mamprugu traditional council respectively and uncooperative youth and community members (22%), political interference(2%) and limited knowledge on NWFPs and its management(29%) as a challenges to NWFPs management.

#### 4.4.9 Summary and Conclusions

In using the three generational perspectives, ground parents and parents established that, 15 years ago, indigenous beliefs and practices were the modes of NWFPs management. Although these believe and practices stood the test of time in NWFPs management, they are proving less effective today. These systems of management are however found to be unpopular with children and therefore are not respected or adhered to in community NWFPs resources management. The children generation are however conversant with government policies and community bye-laws as modes of managing NWFPs resources. They have faith in government institutions, service providers and agencies in the management of NWFPs 1 resources.

The major challenge by communities and traditional authorities in NWFPs management are; over dependency on NWFPs for livelihoods, limited alternative livelihoods opportunities



increase in population, limited knowledge on NWFPs/its management, uncooperative youth and community members, political interference and uncoordinated policies and poor enforcement by users, government agencies and Mamprusi traditional council. It was therefore suggested that it should be managed through; holistic policies, sustainable production and marketing chain for NWFPs (policy makers, extractors/processors/marketers and users), empowerment and training of farmers, traditional authority and women leaders on natural resource management, protection and planting of trees, institutional strengthening of FVS/groups in every community, review of policies and taboos and the involvement of relevant government agencies

## **4.5 NON-WOODY FOREST PRODUCT MANAGEMENT AND POLICY ISSUES**

### **4.5.1 Introduction**

This aspect addresses issues on knowledge of government policies on NWFPs management, institutions responsible for the implementation and their involvement in government policy formulation, their effectiveness and the role of community institutions in the policy formulation processes. I concluded by looking at the challenges communities and their institutions faced in the policy formulation process and the suggestions for better management of NWFP resources.

### **4.5.2 Knowledge of Government Policies on NWFPs Resources Management**

The general perception is that communities either lack knowledge or are ignorant about existing government policies and programmes for NWFPs management (Gausset, 2003). This perception has led formal discourses and raised questions on the way NWFPs resources management policies are formulated in Africa. Most official pronouncements often indicate that communities and traditional institutions lack knowledge on existing government policies on NWFPs management issues. Unfortunately this perception was found untrue in the study district. Table 4.13 depicts respondents' views on knowledge of existing government policies on natural resources management.

**TABLE 4.13: KNOWLEDGE OF GOVERNMENT POLICIES FOR NWFPs MANAGEMENT**

<b>Knowledge of Policies</b>	<b>Frequency of Responses</b>	<b>Percentage</b>
Forest Policy	80	80
Wildlife	48	48
Others	47	47

Source: Field data, 2009



From the table 4.13 out of 175 multiple responses analysis on respondents expressed views on their knowledge on existing policies on NWFPs management, 80% were knowledgeable on the existence of forest policies, 48% and 47% for wildlife and other policies such as Wildfire management respectively.

It is obvious from the table that majority of the responses (80 %) have knowledge on forest management policies while the least responses (47 %) have knowledge on the existence of other policies on NWFPs management. This may be attributed to the activities of the National Fire Service, the Forestry Services Division and NGOs in natural resources and NWFPs resource related management in the district. These stakeholders offered various training and capacity building programmes and activities ranging from sensitization on wildfire management policies, training of fire volunteer squads among others. Also, following the formulation of a new national wildfire management policy, their knowledge on the policy was enhanced at the dissemination stage of the policy formulation process. When probed further to find out why their knowledge on other policies were rather low (including agricultural policies) even though it constitute the main stay of the local economy. A respondent in the community in justifying the low knowledge on other policies said:

*"We have, for example an agricultural agent assigned to us in this community to advice us on our farming systems and also educate us on policy issues on the sector, but us I speak now, we have never seen him for the past two years, how then can we know of the policies you are asking us in that sector?. We have no knowledge about them".*

#### 4.5.3 Responsible Institutions for the Implementation of Policies

Contemporary development management recommends a blend of stakeholders in the implementation of government policies and programmes in NWFPs resources management (WMP, 2004). Hitherto, policies and programmes were implemented by formal institutions in natural and NWFPs related resource management. To either accept or reject the veracity of this assertion, the following responses on Table 4.14 would attest to that.

**TABLE 4.14: INSTITUTIONS RESPONSIBLE FOR THE IMPLEMENTATION OF NWFPs POLICIES**

Implementer	Frequency	Percent
Government Agents	35	35
NGO workers	19	19



Assembly Persons	10	10
Chiefs and Elders	14	14
District Assembly	22	22
Total	100	100.0

Source: Field data, 2009

Table 4.14 captures respondents' views on the responsible institutions for the implementation of natural and NWFPs related resources management policies in the district. Responses from the Table 4.14 indicates that stakeholders such as Government agents, NGO workers and Assembly persons, representing 35 % (35), 19 % (19) and 10 % (10) respectively implement natural and NWFPs related resource management policies in the district. Other respondents indicated Chiefs and elders and the District Assembly also representing 14 % (14) and 22 % (22) as the main stakeholders who implement natural resource management policies

A look at the Figures above indicates that, government agents in Natural resources management constitute the highest percentage (35%) as perceived by respondents as the main implementers of Natural resource related policies and programmes in the district. This supports Ostrom (1992) arguments that governments in Africa, and other parts of the world, have, until recently, assumed the direct control and management of natural and NWFPs related resources. In furtherance of this, AZTREC (1997) argued that, the colonial state located responsibility for natural and NWFPs related resources in state agencies in order to wrestle control from local peoples and to retain the benefits for itself. This trend continued in much the same vein today. State agencies as indicated above in the figure have appropriated responsibility for natural and NWFPs related resource management from local communities and have turned appropriated practice into policing and income generating activities.

The general argument therefore is that, governments have failed to successfully manage NWFPs resources in Africa hence, the suitability of governments' direct control of what should properly be collectively managed for the livelihood sustainability of the poor is increasingly being questioned. I therefore agree with Fairhead and Leach (2004: 13) that "the alienation of local resource control to state structures ..." among other factors, accounted for resource management failures in most parts of the third world.

In recent decades, the number of social actors (formal institutions) interested in managing NWFPs resources has increased as a result of widespread socio-political changes, including governments'



decentralisation processes, the privatization of previously state-controlled initiatives, the emergence of new democratic institutions, and the proliferation of NGOs, and associations. Many such "new actors" perceive social problems and opportunities and believe that they can adequately respond to those if they are allowed to participate in management decisions and actions. Devolution of resource management to local stakeholders (informal institutions) is part of the wider movement to empower citizens to determine the directions and goals of development through legislations and policing.

#### 4.5.4 Involvement in the Stages of Policy Formulation

NWFPs resources management policies of the past have been increasingly denounced and condemned by communities because of their disregard for and lack of involvement of traditional institutions in the planning, implementation, monitoring and evaluation. Recent development concerns attempts to address the plight of rural communities with respect to the management of NWFPs resources. Some of these attempts by government are reflected in recent policy reforms and action programmes that attempt to bring onboard the element of community participation in the formulation of Natural resources management policies with some emphasis on NWFPs.

Table 4.15 presents respondents views on their involvement in initiation, consultation, acceptance, dissemination etc of natural resources management and related policies.

**TABLE 4.15: STAGES OF INVOLVEMENT IN POLICY FORMULATION PROCESSES**

Stage of involvement	Frequency	Percentage
Initiation Process	13	13
Consultation Process	27	27
Acceptance Process	13	13
Endorsement Process	27	27
Dissemination Process	20	20
Total	100	100

Source: Field data, 2009

The results show that, out of 100 respondents, 13% indicated that they are only involved in initiation process of the formulation, 27% on the other hand indicated their involvement at the consultation stage while 13% and 27%, 20% said they are involved in the acceptance, endorsement and dissemination processes respectively. It is evident from the Figure above that community institutions and structures are least involved in the initiation and acceptance processes of policies



in relation to natural resources management in the district. Focus group discussions further revealed that they played effective role only in the implementation and dissemination stages of the policies. This took the form of community sensitization. They however, indicated challenges they encounter in the implementation and dissemination as the integration of modern and traditional apprehension of the policy document and social ties as a constrain in implementing community guidelines for managing community natural resources management including NWFPs. This therefore suggest that community institutions and systems into natural resources management which includes NWFPs resources are inadequately involved and 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 planning stages.

#### **4.5.5 Summary and Conclusions**

The perception that community institutions lack knowledge of existing government policies on natural resource and NWFPs related management issues was found to be untrue in the study district. Out of responses received from 100 respondents whose views were solicited on the knowledge of existing policies on natural resource and NWFPs resources management, 80% were responses indicating knowledge on the existence of natural resource management related to policies on forest, 48 % on wildlife whiles 47 % on other policies such as bushfire management. Respondents' high knowledge on natural resource management related policies is attributed to the activities of MOFA, Ghana National Fire Service, the Forestry Services Division and NGOs in natural resource management in the district. The study also show that, government agents in natural resources management constitute the highest percentage (35%) as perceived by respondents as the main implementers of the policies and programmes in the district. State agencies as indicated above in the figure have appropriated responsibility for natural resource and NWFPs resource management from local communities and have turned appropriated practice into policing and income generating activities.

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. Drawing from the statistics above, it is evident that communities and traditional authorities are least involved in the initiation and acceptance stages of policies and programmes in relation to NWFPs related resources management in the district.



They however, indicated challenges they encountered in the implementation and dissemination as the integration of modern and traditional management practices, the lack of funds to carry out education on the policies, inadequate apprehension of the policy document and social ties as a constrain in implementing community guidelines for managing community NWFPs and natural resources in general. This therefore suggest that communities and traditional institutions and systems into natural resource and NWFPs related resources management 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 forest and wildlife and Wildfire management policies.





## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Summary and Conclusions

First, the findings show that the modal age group within the community institutions is elderly within age group 36-45. Two reasons were attributed to this: the first is attributed to seniority in the traditional leadership system which allows for the elderly in succession as a result of their experiential knowledge in various fields of authority. The second is lack of apathy among the youth (15-25) to succeed parents' vocation due to western education and religion. Aside, the findings also revealed male dominance at the various levels of the composition of the community institutions except for the *Magazia* institution which is generally considered "modern" and nominated by women themselves on the basis of their leadership qualities. A great majority of traditional governance structures in the district did not have women occupying positions such as chiefs, council of elders, clan heads etc as a result, their voices in decision making process is greatly constrained, hence, the clarion call for gender composition in our traditional leadership structures in the decision making processes still remains a challenge in the district.

The level of education among traditional institutions was generally found to be low (5 out of 7 traditional leaders (chief, clan head, *magazia* and diviner) never had formal education) in the district as the level of education and ones status in the district was insignificant in leadership and decision making processes among traditional leaders in the district.

Second, on the whole it is obvious that, gathering, processing and marketing of NWFPs is a key rural livelihood activity engaged in by farmers in the district which contributes to the household security in terms of provision of family health care, food, education and farming enterprise.

Third, community members are knowledgeable in NWFPs. 81% of respondents express having fair to high knowledge in NWFPs. The studies also 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 instruments and those for the performance of rituals and sacrifices. However though there is relative abundance of these resources it is worth noting that the forest cover of the north is in the decline due to poor management practices and over exploitation of the resources. The relative importance of income-earning opportunities afforded by NWFPs varied



considerable from village to village. Of responses on sources of livelihood income of those interviewed, overall 93 % traded in NWFPs placing second to farming. The findings collaborates that the reliance placed on NWFPs gathering, processing and marketing depends not only on the availability of resources but also on the ease of access to markets, the existence of trade networks and skills acquired. However in the case of East Mamprusi district the trade networks and skills need to be enhanced to maximize the potential of processing and trading in NWFPs.

Fourth, NWFPs contribution to annual income of natural resource users is low mostly within the bracket of 1-20GH¢. It therefore goes to suggest that, income generated from NWFPs is used to fill a cash shortfall, not to make improvements in family health and nutrition. The study also revealed that participation in NWFPs trade constraints for poor rural households in the district includes poor linkages with urban markets, lack of coordination between different actors in product 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.

Fifth, in using the three generational perspectives, it was brought to fore that, grandparents and parents established that, 15 years ago, indigenous beliefs and practices were the modes of NWFPs management. Although these believe and practices stood the test of time in NWFPs management, they are proving less effective today. These systems of management are however found to be unpopular with children and therefore are not respected or adhered to in community NWFPs resources management. The children generation are however conversant with government policies and community bye-laws as modes of managing NWFPs resources. They have faith in government institutions, service providers and agencies in the management of NWFPs resources.

Sixth, the perception that community institutions lack knowledge of existing government policies on natural resource and NWFPs related management issues was found to be untrue in the study district. Out of 100 respondents whose views were solicited on the knowledge of existing policies on natural resource and NWFPs resources management, 81% of the respondents were knowledgeable on the existence of natural resource management related policies while 16% are less informed about the management policies. Respondents' high knowledge on natural resource management related policies is attributed to the activities of MOFA, Ghana National Fire Service, the Forestry Services Division and NGOs in natural resource management in the district. The study also show that, government agents in natural resources management constitute the highest



percentage (35%) as perceived by respondents as the main implementers of the policies and programmes in the district.

Seventh, 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. Drawing from the statistics available, it is evident that communities and traditional authorities are least involved in the initiation and acceptance stages of policies and programmes in relation to NRM in the district. They however, indicated challenges they encountered in the implementation and dissemination as the integration of modern and traditional management practices, the lack of funds to carry out education on the policies, inadequate apprehension of the policy document and social ties as a constrain in implementing community guidelines for managing community NWFPs and natural resources in general. This therefore suggest that communities and traditional institutions and systems into natural resource and NWFPs related resources management 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 forest and wildlife and Wildfire management policies.

## **5.2 Revisiting Research Questions, Objectives and Problem**

Northern Ghana is abound with natural resources including NWFPs which constitute a critical resource for contributing to social and livelihood enhancement of communities . Despite this, the contribution of NWFPs, especially from indigenous populations to rural economies in Northern Ghana, remains largely undervalued and understudied. I therefore set out to investigate how non-woody forest products (NWFPs) impacts on rural livelihoods in Northern Ghana with specify focus on the East Mamprusi district in the Northern region.

Drawing from my conclusions, in this session, I re-visited the specific research questions, objectives and research problem. The first research question look at the role of NWFPs play in the rural livelihoods and economies of northern Ghana and drawn from the main research objective of "to explore the capacity of NWFPs for improved livelihoods, incomes and rural economies in Northern Ghana". Major findings under this objective revealed that gathering' processing and marketing of NWFPs 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 fanning enterprise. However, NWFPs contribution to annual income of natural resource users is low mostly within the bracket of 1 -20GH11. It therefore goes to suggest that, income generated from NWFPs is used to fill a cash shortfall, not to make improvements in family health and nutrition. The



economic analysis therefore centred on household efforts to preclude shortfalls in basic needs provisioning by seeking a number of income-earning activities including NWFPs to avoid year-round reliance on agriculture and offset the risk of production failure in any one activity. Hence, these findings agree with the research problem that NWFPs is under-developed and under-utilised and addresses the problem of Savannah Ecosystems' short duration of the rainy season restricting most incomes to that period.

The second research question had to do with the existing management systems for NWFPs in rural communities in Northern Ghana and drawn from the objective "to find out the management system in place for NWFPs in rural communities in Northern Ghana". Using the 'three generational analyses', major findings showed that, 15 years ago, traditional institutions performed varied roles that are interrelated in natural resources management through structural relationships, and indigenous beliefs and practices were the modes of management. Although these beliefs and practices stood the test of time in NWFPs resource related management, they are proving less effective today. They are however not integrated into formal management systems. These systems of management are found to be unpopular with children and therefore are not respected or adhered to in community NWFPs resources management. The children generation are however conversant with government policies and community bye-laws as modes of managing NWFPs resources. They have faith in government institutions, service providers and agencies in the management of NWFPs resources.

The third research question focuses on how extraction, processing and marketing of NWFPs contribute to livelihoods in Northern Ghana. This deals with the research objective "to assess the contribution of NWFPs to rural livelihoods in NG and what its current and potential economic values are for the local and foreign market". The relative importance of income-earning opportunities

afforded by NWFPs varied considerably from village to village. The findings corroborates that the reliance placed on NWFPs gathering, processing and marketing depends not only on the availability of resources but also on the ease of access to markets, the existence of trade networks and skills acquired. However in the case of East Mamprusi district the trade networks and skills need to be enhanced to maximize the potential of processing and trading in NWFPs. The study also revealed that Participation in NWFPs trade constraints for poor rural households in northern Ghana includes poor linkages with urban markets, lack of coordination between different actors in product 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. This therefore brings to fore the poor



capacity of communities as a problem in extraction, processing and marketing to harness NWFPs for improved livelihoods.

The fourth research question relates to the current policy implications for the role of NWFPs in rural livelihoods and economy in Northern Ghana. It also touches on the research objective "to assess the policy implication for the management, development, utilization, processing and marketing of NWFPs for improved livelihoods and rural incomes in Northern Ghana". From the findings, it was found to be untrue in that community institutions lack knowledge of existing government policies on natural resource and NWFPs related management issues, it is evident that communities and traditional authorities are least involved in the initiation and acceptance stages of policies and programmes in relation to NWFPs related resource management. The findings revealed that communities and traditional institutions and systems into natural resource and NWFPs related resource management 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 forest and wildlife and Wildfire management policies. The study also revealed that there is no policy with specific emphasis on NWFPs that could have a strategy among others that allow for a spread of incomes year-round thereby filling in the income and food insecurity gaps that occur during the off season as a major problem issue.

### 5.3 Recommendations

Drawing from the above conclusions, the following recommendations are made.

#### **1. Development of inventory of NWFPs as a prelude to its enhancement as a livelihood asset in northern Ghana.**

The development of NWFPs and the implementation of sound management systems are severely restricted due to lack of inventory data on NWFPs both static and dynamic.

The savannah woodland inventory will provide basic information on the growth, productivity and uses of NWFPs with the active involvement of indigenous communities. Though there were inventory taken of forest products in the 1990s, they were restricted to southern Ghana. However, these studies provided only limited information required for an effective integrated forest management of natural forest. Therefore a bio data of NWFPs resources will help harness other techniques for sustainable management of the natural resource through mapping, surveying, planting programmes and plans for the sustained harvesting of NWFPs. There is also the need to



maintain a continuous inventory of the resources, both in protected areas and outside, so as to monitor trends in population and distribution. Through this process Communities are helped to build an inventory of their assets and are encouraged to see value in resources that would otherwise have been ignored, unrealized, or dismissed.

## **2. Integrating contemporal and traditional management systems into natural resource and NWFPs related management system**

Traditional authorities have over the years managed natural resources including NWFPs through the use of religious believes, moral sanctions and a range of sacred and cultural practices. These local management systems which evolved over time have proved more effective and sustainable than other forms of management. Building policies on these existing management systems would ensure a holistic and sustainable natural resources management. Even though, there have been some efforts by the Ministry of Lands and Forestry to initiate the Wildfire Policy from the bottom-up, thus involving traditional authorities and communities in the policy formulation processes. But findings from the study district seem to suggest that, they are least consulted at the planning, initiation, acceptance and evaluation stages of the policy formulation and implementation. In the light of this, I recommend that, proper consultation and integration of indigenous management systems and practices into formal management systems be made to ensure sustainable renewable natural resource management, utilization of NWFPs hence, check over exploitation.

## **3. Adding value to NWFPs in the processing, preservation, packaging and marketing as a sustainable livelihood option in northern Ghana**

The profitability of NWFPs marketing depends on the extent to which value is added to the NWFPs extracted. Government will have to create the conducive environment for the involvement of other players to develop the value chain along the NWFPs as a commodity. There is therefore the need for appropriate technologies to be developed/introduced to rural based industries for the development of NWFPs along extraction, processing and packaging. Organization of small-scale producers to supply markets more successfully, by provision of practical tools for market analysis and product development could be a good strategy for harnessing NWFPs for rural economic development.

Some other strategies will include improving information flow within communities about local, national and international markets, and in particular, the structure and function of marketing networks. This will increase NWFPs commercialisation 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 NWFPs and increase the economic benefit to natural resource users.

#### **4. Institutional Capacity strengthening**

Currently there is no structured approach for delivering support to grass roots level in terms of NR and NWFPs development. This places limitations to community level capacity to extract, process and preserve NWFPs in a sustainable manner. A well structure channel to support communities in the extraction and utilisation of NWFPs will go along way to promote and add value to NWFPs development. To further enhance the holistic development of the natural resource there is a dying need for improved coordination between agencies responsible for NWFPs development. In addition enhancing the knowledge and skills of the individual or groups of farmers/resources users and other stakeholders ,build on their local believe, knowledge and value systems, have the capacity to positively contribute to efficient natural resource and NWFPs management.

#### **5. Policy formulation and or reform and implementation in favour of NWFPs development in the savannah ecosystem**

There is a Void in national forest policy on NWFPs development and this does not go well for the sustainable development of the industry along that of the savannah woodland as contained in the forest and wild life policy, more so the there is limited mention of strategies for the management of NWFPs in the policy. The policy therefore falls short of the expectations of rural dwellers in addressing the issue of NWFPs as an alternative livelihood resource for contributing to the development of the local economy.

This therefore calls for a policy emphasis and direction to address the issue of developing the savannah woodlands in Northern Ghana for the maintenance and management of the ecology and biodiversity whiles contributing to the economic development and poverty reduction of the vast majority of resource users who constitute more than 70% of the population of Northern Ghana. Policy review/formulation could have the following considerations:

- Development and management of savannah woody plantations with specie mix for the production of NWSPs for improved livelihoods.
- Development , management , processing and utilization of less timber resource species as a long term strategy for timber development in Northern Ghana
- Capacity Support to individual and groups in the establishment and management Savannah woodland resources





- Promotion of user and participatory research in savannah woodland farming systems
- Institutional capacity strengthening to include community based indigenous institutions for natural resource management
- Acknowledging indigenous knowledge, worldviews, practices and other mainstreaming issues as basis for sustaining savannah woodland development agenda:
- Improve tenure security and woodland ownership right
- access to appropriate labour saving technology
- regulatory framework for NWFPs trade

It is anticipated that sensitization, operationalisation and strict enforcement of policies and laws on development of the savannah woodland into high value resource in Northern Ghana will go a long way to enhance management of the savannah ecosystem for NWFPs' sustainable exploitation for livelihood security of communities whiles developing timber plantations for less timber resources as a means of exploiting the full potential of the north.

Therefore a policy that focuses on the savannah woodland and NWFPs as resource for enhanced livelihoods, socio-economic and ecological development of the savannah as a unique ecosystem is a panacea to the accelerated development of the northern Savannah.



## REFERENCE

- Abu-Juam, M. (2002), Assessing the multiple values of Savannah Woodland Species among end-users in Northern Ghana-Sudan Environmental Research Initiative. Occasional Paper nos 13. Copenhagen
- Adam, J.G. (1948), Les reliques boisees et les essences des savanes dans la zone preforestiere en Guinee francaise. Bulletin de la societe botanique Francaise, 95:22-6
- Addey, J. (2004), Wood carving activities in Kumasi 'and its suburbs. Thesis (BSc), Institute of Renewable Natural Resources, University of Science and Technology, Kumasi, Ghana.
- Agyemang, M.M.O. (1994), The leaf gatherers of Kwapanin, Ghana. Forest Participation Series 1. International Institute for Environmental Development, London.
- Alcorn, J.B. (1995), Economic botany, conservation, and development: what's the connection? Annals of the Missouri Botanical Garden 82: 34-46.
- Anderson, A.B. (1992), Land-use strategies for successful extractive economies. In: Cousell, S. and Rice, T. (eds.) The rainforest harvest: Sustainable strategies for saving the tropical forests? 213-22. Friends of the Earth, London.
- Anderson, A.B. and Ioris, E.M. (1992), Valuing the rain forest: economic strategies by small-scale forest extractivists in the Amazon Estuary. Human Ecology 20: 337-69.
- Apusigah, Agnes A. (2004). Empowering Ghanaian Women for Community Development: Revisitng the two imperatives of the practical and the strategic. Ghana Journal for Development Studies. Vol. 1. 2004 pg 4 - 24
- Arnold, J.E.M., Liedholm, C., Mead, D. and Townson, I. M. (1994), Structure and growth of small enterprises using forest products in southern and eastern Africa. OFI Occasional Paper No. 47. Oxford Forestry Institute, Oxford. Also GEMINI Working Paper No. 48. Growth and Equity through Micro enterprise Investments and Institutions (GEMINI) Project, Bethesda, Maryland.



- Asibey, E.O.A. (1999), Expected effects of land-use patterns on future supplies of bush meat in Africa south of the Sahara. *Environmental Conservation* 4(1): 43-49.
- Aubreville, A. (1939), *Forets reliques en AOF*. *Revue Botanique Applique*.
- Appasamy, P.P. (2003), Role of non-timber forest products in a subsistence economy: the case of a joint forestry project in India.
- Arvidsson, M. (2004), Non-timber forest products: A resource in conservation of the Samoan rainforests. Working Paper 312. Swedish University of Agricultural Science, International Rural Development Centre, Uppsala.
- AZTEC. (1997), Capacity Building of Traditional Institutions for the use of Indigenous Knowledge System in Natural Resource Management, Southern African Mission.
- Bacho Z.L.F. (2001), Infrastructure Delivery Under Poverty: Potable water provision through collective action in Northern Ghana. Spring Research series No.34, Spring Centre, Universitat Dortmund.
- Baker, L. (2002), Marketing non-timber tropical forest products: Prospects and promise — a workshop report. Unpublished report prepared in conjunction with a workshop of the Consultative Group on Biological Diversity in cooperation with Cultural Survival, Inc. held on Nov. 7, 1989.
- Balick, M.J., Ferro Frazao, J.M., Anderson, A.B. and May, P. (2005), Babassu palm in the agroforestry systems in Brazil's mid-north region.
- Barborak, J.R. (2006), Buffer zone management: lessons for the Maya Forest. n: Primack.
- Becker, B. (2003), The Contribution of Wild Plants in Human Nutrition in Northern Senegal. *Agroforestry Systems*, vol.1, n° 3.
- Berkvens, R. (1997), 'Backing Two Horses: Interaction of Agricultural and Non Agricultural



Household Activities in a Zimbabwean Communal Area', Afrika Studiecentrum working Paper, Vo124, Leiden, November 1997.

Bernard, H. R. (1988), Research methods in cultural anthropology. Berverly Hills: SAGE Publications.

Bishop, J. and Scoones, I. (1994), Beer and baskets: The economics of women's livelihoods in Ngamiland, Botswana. Hidden Harvest Project 3. Sustainable Agriculture Programme, IIED, London.

Blaikie, P. and Brookfield, H. (2003), Land degradation and society. Methuen.

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

Browder, J.O. (1992), The limits of extractivism: tropical forest strategies beyond.

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

Bruijn, M. and Van Dijk, H. (1994), 'Drought and Coping Strategies society in Hayre' Cahiers d'etudes africaines, Vol. 34, Nos 133/ 135.85-108.

Campbell, J. (2002), 'Strategies for Coping with Severe Food Deficits in North eastern Africa', Northeast African Studies, Vo19, No 2, 43-54.

Carswell, G. (1997), 'Agricultural Intensification and rural sustainable livelihoods' A "Think Piece" IDS working paper 64.

Cashman, K. (1998), Women's activities and the potential of alley farming in southwestern Nigeria. Report prepared for The Ford Foundation. International Livestock Center for Africa, Humid Zone Programme, Ibadan, Nigeria (unpublished).

Chamber, R. (1999), Rural Development: Putting the Last First, Longman Scientific and Technical , Copublished in the united states with John Wileyand Sons, Inc, New York.



Chambers, R. and Conway, G. (2002), Sustainable rural livelihoods: Practical concepts for the 21<sup>st</sup> century. IDS Discussion Paper 296. Brighton: IDS.

Coles-Ritchie, M.C. (1996), Analysis of non-timber extractive products from tropical forests: The tagua example in Ecuador. Masters thesis. Bard College.

Collier, P. and Gunning, J.W. (1997), 'Explaining African Economic Performance', University of Oxford, Centre for the Study of African Economics Working Paper 97-2.1.

Dankwa III, A. (2004), The Institution of Chieftaincy in Ghana: The Future. Konrad Adenauer Foundation, Accra, Ghana.

De Beer, J. H. and McDermot, M.J. (2000), The Economic Value of Non Timber Forest Products in S.E. Asia. Second Edition, Netherlands Committee for the IUCN, Amsterdam.

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

Deweese, P.A. and Schen, S. J. (1996), Policies and markets for non-timber tree products. EPTD Discussion Paper 16. International Food Policy Research Institute, Washington, DC.

Edwards, D.M. (2000), Non-timber forest products from Nepal: Aspects of the trade in medicinal and aromatic plants. FORESC Monograph 1/96. Ministry of Forests and Survey Center, Babar Mahal, Kathmandu, Nepal.

Environmental Protection Agency, (2000), National Plan of Action to Combat Desertification.

Fairhead, J. and Leach, M. (1994), Contested forest: Modern conservation and historical land use in Guinea's Ziama Reserve. The Journal of the Royal African Society, vol 93, no 373

Fairhead, J. and Leach, M. (2004), False Forest History, Complicit Social Analysis: Rethinking Some West African Environmental Narratives. Environment, Development and Rural Livelihoods. Earthscan, UK and USA.

Falconer, J. (2004), The major significance of minor forest products — examples from West Africa. Appropriate Technology 17(3): 13-16.



- Falconer, J. (2001), A study of the non-timber forest products of Ghana's forest zone. In: Cousell, S. and Rice, T. (eds.) The rainforest harvest: Sustainable strategies for saving the tropical forests?, 135-41. Friends of the Earth, London.
- Falconer, J. (1997), Developing Research Frames for Non-Timber Forest Products: experience from Ghana. Pages 143 - 160 in M. Ruiz Perez, & J.E.M. Arnold (eds.), Current Issues in Non-timber Forest Products Research. Centre for International Forestry.
- Falconer, J. (1992), Non-Timber Forest Products in Southern Ghana; summary report; ODA FORESTRY SERIES No.2
- FAO, (2000), Preparing agricultural investment projects, investment centre technical paper No 1, Rome FAO, Rome.
- FAO, (2002), Non-Wood Forest Products: The Way Ahead. FAO Forestry Paper n°97.
- FAO, (2003), Small-scale forest based processing enterprises. Forestry Paper 79.
- Francois, (2001), The Role and Dynamics of Community Institutions in the Management of NTFP Resources in Cameroun. African Regional Programme for Environment, USAID.
- Gausset, Q. (2003), Land Tenure, Forest Policies and forest Practices in Burkina Faso. Some Preliminary findings. Sahel-Sudan Environmental Research Initiative. Occasional Paper Nos 15, Copenhagen.
- Gorjestani, N. (2004), Indigenous Knowledge: The Way forward. Local Pathways to Global Development. World Bank Report.
- Ghana Statistical Service, (2007), Pattern and Trends of Poverty in Ghana 1991-2006.
- Ghatak, S. (1995), A recipe for success: women and non-timber forest products in Southwest Bengal, India. In: Fox, J., Donovan, D. and DeCoursey, M. (eds.) Voices from the field: Sixth workshop on 'Community Management Forest Lands', 164-79. East-West Center, Honolulu, Hawaii.



Godoy, R.A., Brokaw, N. and Wilkie, D. (1995), The effect of income on the extraction of non-timber tropical forest products: model, hypotheses and preliminary findings from the Sumu Indians of Nicaragua. *Human Ecology* 23: 29-52.

Grady, M.P. (1998), *Qualitative and Action Research; A Practitioner Hand book*. Phi

Delta Kappa Educational Foundation, Bloomington, Indiana U.S.A.

Gunatilake, H.M., Senaratne, D.M.A.H. and Abeygunawardena, P. (1993), Role of non-timber forest products in the economy of peripheral communities of Knuckles National Wilderness Area of Sri Lanka: a farming systems approach. *Economic Botany* 47: 275-81.

Haggblade, S. and Liedholm, C. (1991), Agriculture, rural labor markets, and evolution of the rural nonfarm economy. GEMINI Working Paper No. 19. Growth and Equity through Micro enterprise Investments and Institutions (GEMINI) Project, Bethesda, Maryland.

Hall, J. B. and Swain, M. D. (2003), *Geobotany 1: Distribution and ecology of vascular plants in a Tropical rainforest vegetation in Ghana..* The Hague, Boston, London.

Hecht, S.B., Anderson, A.B. and May, P. (2001) The subsidy from nature: shifting cultivation, successional palm forests, and rural development. *Human Organization* 47: 25-35.

IFAD Studies in rural poverty, No 2, (2001), Sarris, A., Shams, H., Ghana Under Structural Adjustment, The Impact On Agriculture And The Rural Poor. New York University Press.

Jodha, N.S. (1999), Common property resources and rural poor in dry regions of India. *Economic and Political Weekly* 21(27): 1169-81.

Kamara, J.N. (2000), Firewood energy in Sierra Leone: production, marketing and household use patterns. Studies No. 9, Verlag Weltarchiv, Hamburg, West Germany.

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

Kasanga, K. R. (1992), "Agricultural land administration and social differentiation. A case study of Tono, Veve and Fumbisi Belts of Northern Eastern Ghana", joint committee on African studies. working paper 10, New York USA.





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

Kranjac-Berisavljevic, G., Bayorbor, T. B. and Obeng, F.K. (2002), Soil and Water Conservation in Ghana —A review, University for development studies (UDS) Tamale.

Leach, M. and Means, R. (1996), The Lie of the Land, Challenging the received wisdom on the African Environment, London: James Currey/Heinemann London.

Leech, M. and Fairhead, J. (2005) ,Reframing deforestation: Global analysis and local realities. Studies in West Africa. Routledge Press, London.

Mamadou, S. (2002), Soil and Water Conservation in Senegal —A review, ENDA-Pronat Dakar, Senegal.

Mann, J. (1990), The role of non-timber forest products in village economies of south-west Bengal. In: From the field, 1-8. Network Paper 15d (Summer).ODI, Rural Development Forestry Network, London.

Margoluis, R.A. (1994), Conservation for health: exploring the association between the small-scale commercial utilization of non-timber forest resources and human health in a tropical forest biosphere reserve. PhD dissertation.

Marsh, R. (2002), Working with Local Institutions to Support Sustainable Livelihoods. University of California, Berkeley, USA.

Marshall, R.C. (1945), Forestry in the Northern Territories of the Gold Coast. Gold coast colony government printing department, Accra.

Millar, D. (1996), A PhD Thesis Proposal (Unpublished).

Millar, D. (2003), Forest in northern Ghana: Local Knowledge and Local Use of Forest. Sahel-Sudan Environmental Research Initiative. Occasional Paper nos 15.Copenhagen.

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



Millar, D. Bonye, S. and Agbenyo, F. (2004), Methodologies for the Empowerment of Rural People in Northern Ghana. GILLBT Printing Press, Tamale, Ghana.

Miller, D.C. (1991), Research Design and Social Measurement. SAGE Publication Newbury Park, California.

Ministry of Lands and Forestry, (1994), Forest and Wildlife Policy. Ghana Publishing Corporation, Accra.

Moor, H. W. (1935), Preliminary report on the forest requirements of the Northern Territories. In: General Tour and Inspection Reports by Local Officers on the Northern Territories. Case No. 01611 Gold Coast Colony Forestry Department, Kumasi.

Murrel, K. (1999), International and Intellectual Roots of Appreciative Enquiry, Organizational Change Journal.

Musah, A. (2002), Assessing the multiple values of savannah Woodland Species amongst End-Users in Northern Ghana, Forestry Commission, Accra.

North, D.C. (1990), Institutions, Institutional Change, and Economic Performance. Cambridge University Press.

Olsen, C. S. (1997), A qualitative assessment of the sustainability of commercial non-timber forest product collection in Nepal. In: Olsen, C. Smith, Commercial non-timber forestry in Central Nepal: Emerging themes and priorities, Chapter 6 (submitted to Mountain Research and Development).

Ostrom, E. (1992), The rudiments of a theory of origins, survival and performance of common property institutions.

Padoch, C. (2002), The economic importance and marketing of forest and fallow products in the Iquitos region. In: Cousell, S. and Rice, T. (eds.) The rainforest harvest: Sustainable strategies for saving the tropical forests?, 177-97. Friends of the Earth, London.



- Padoch, C. and de Jong, W. (1989), Production and profit in agroforestry: an example from the Peruvian Amazon. In: Browder, J.O. (ed.) *Fragile lands of Latin America: Strategies for sustainable development*, 102-13. Westview Press, Inc., Boulder, Colorado.
- Peluso, N.L. (1992), The rattan trade in East Kalimantan, Indonesia. In: Nepstad, D.C. and Schwartzman, S. (eds.) *Non-timber products from tropical forests: Evaluation of a conservation and development strategy*, 115-27. *Advances in Economic Botany* 9. The New York Botanical Garden, Bronx, New York.
- Peters, C. M. (1996), The ecology and management of non timber forest resources. World Bank proceedings: NTFP research in the Tropenbos programme: results and perspectives.
- Pimentel, D., McNair, M., Buck, L., Pimentel, M. and Kamil, J. (2005), The value of forests to world food security. *Human Ecology* 25: 91-120.
- Poulsen, G. (1998), Important forest products in Africa other than wood and wood extractives: a preliminary study. Consultancy report prepared for FAO Forestry Department. RAF/78/025, FAO, Rome, Italy.
- Prasad, R. and Bhatnagar, P. (2003), Non-wood forest products and the indigenous fringe dwellers in Madhya Pradesh. *Journal of Tropical Forestry* 9: 188-95.
- Rodda, A, (1993), Women and world development series.
- Romanoff, D. (1992), How do different forest management practices effect the non-timber value of forests? An economic analysis. *Journal of Environmental Management* 41: 79-88.
- Ros-Tonen, M.A.F. (1999), NTFP research in the Tropenbos programme. In seminar Technical Paper 322. Washington, D.C., USA.
- Runge, C.F. (1996), Institutions and the free rider: The assurance problem in collective action, *Journal of Politics*, Vol.46.



Saunders, M., Lewis, P. and Thornhill, A. (1997), *Research Methods for Business Students*. Pearson Professional Limited, London.

Schreckenber, K. (1996), *Forests, fields and markets: a study of indigenous tree products in the woody savannas of the Bassila region, Benin*. PhD dissertation. University of London.

Siebert, S.F. (1995), Prospects for sustained-yield harvesting of rattan (*Calamus* spp.) in two Indonesian national parks. *Society and Natural Resources* 8: 209-18.

Springer-Heinze, A., Hartwich, F., Henderson, J. S., Horton, D. and Minde, I. (2003) *Impact pathway analysis: an approach to strengthening the impact orientation of agricultural research*.

Strauss, S. A. and Corbin, J. (1990), *Basics of Qualitative Research — Grounded Theory Procedures and Techniques*. Newbury Park. SAGE Publications.

Taylor, F., Mateke, S.M. and Butterworth, K.J. (1996), A holistic approach to the domestication and commercialization of non-timber forest products. In: Leakey, R.R.B., Temu, A.B., Melnyk, M. and Vantomme, P. (Eds.) *Domestication and commercialization of non-timber forest products in agroforestry systems*, 75-85. *Non-Wood Forest Products* 9. FAO, Rome.

Terry, M.E. (1984), *Botswanacraft and Hambukushu basketry: The effects of a major marketing operation on a group of African people, their traditional craft, and the natural resources*. Botswanacraft Marketing Company. Unpublished typescript.

Terry, M.E. and Cunningham, A.B. (1993), Impact of commercial marketing on the basketry of southern Africa. *Journal of Museum Ethnography* 4: 25-48.

Thompson, H. (1910), *Reports on Forest*. Gold Coast. Cd 4993. HMSO, London.

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

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, 2002.

Wickens, G.E. (2003), Management issues for development of non-timber forest products. Unasylva 42(165): 3-8.

Wildfire Management Policy, (2005). Ministry of Lands and Forestry, Ghana.

Wollenberg, E., and Ingles, A. (1998), (Eds) Incomes from the forest. Methods for the development and conservation of forest products for local communities. CIFOR; IUCN.

World Bank, (2004), "Sub-Saharan Africa from Crisis to Sustainable Growth", Washington D.C.

World Bank, (2001), "Ghana 2000 and beyond —setting the stage for accelerated growth and poverty reduction", Economic report 11486, Washington D. C.

World Health Organisation, (2001), The Major Significance of minor forest products. Community Forestry Note, n° 6. (Julia Falconer).

World health organisation, (2002), Non-Wood Forest Products: The Way Ahead FAO Forestry Paper n°97.

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



APPENDIXES

APPENDIX ONE (1)

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**UNIVERSITY FOR DEVELOPMENT STUDIES,  
RESEARCH AND GRADUATE CENTER, UDS,  
NAVRONGO**

**NATURAL RESOURCE USERS QUESTIONNAIRE**

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**A. INTRODUCTION**

The study is aimed at exploring the capacity of Non-Woody Forest Products (NWFPs) for improved livelihoods, incomes and rural economies in Northern Ghana. It will also assess the management system in place for NWFPs in rural communities and how it can be enhanced for sustainable management and marketing towards improved rural incomes. The impact of NWFP policy and its implementation on the livelihood of rural communities and the development of northern Ghana 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= Male { }  
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= Tendana { }
- 03= Clan head { }
- 04=.Magazia { }
- 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 + livestock) { }
- 02=Dry season gardening { }
- 03=fishing { }
- 04=hunting { }
- 05=gathering, processing and marketing of NWFPs { }
- 06=Petty trading { }
- 07=Others Specify.....

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

- 01=Farming { }
- 02=Dry season gardening { }
- 03=fishing { }
- 04=hunting { }
- 05=gathering, processing and marketing of NWFPs { }
- 06=Petty trading { }
- 07=Others Specify.....

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

	Contribution to household
01=	Ability to pay for health care
02=	Purchase food for the family



03=	Pay children school fees
04=	Purchase farm implements
05=	Others specified

**D. CAPACITY OF NON-WOODY FOREST PRODUCTS(NWFPs) FOR IMPROVED LIVELIHOODS AND SOCIAL DEVELOPMENT**

10. What is your understanding of NWFP?

.....

.....

.....

.....

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

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

11. What types of NWFPs 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 NWFP contribute to your income?

01=Yes

02=No

If yes proceed to answer question 14

13. If no why.....



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

	NWFPs	Amount earned in a year(GH¢)
01=	Medicinal Materials { }	a. 1-20 GHC { } b. 21-30 GHC { } c. 31-40 GHC { } d. 41-50 GHC { } e. 51-60 GHC { } f. 61+ GHC { }
02=	Materials for construction of houses (Thatch, Poles etc) { }	a 1-20 GHC { } b 21-30 GHC { } c 31-40 GHC { } d 41-50 GHC { } e 51-60 GHC { } f 61+ GHC { }
03=	Bush meat { }	a 1-20 GHC { } b 21-30 GHC { } c 31-40 GHC { } d 41-50 GHC { } e 51-60 GHC { } f 61+ GHC { }
04=	Wild food. { }	a 1-20 GHC { } b 21-30 GHC { } c 31-40 GHC { } d 41-50 GHC { } e 51-60 GHC { } f 61+ GHC { }
05=	supplementary livestock feeding { }	a 1-20 GHC { } b 21-30 GHC { } c 31-40 GHC { } d 41-50 GHC { } e 51-60 GHC { } f 61+ GHC { }
06=	Materials for construction of musical instruments { }	a 1-20 GHC { } b 21-30 GHC { } c 31-40 GHC { } d 41-50 GHC { } e 51-60 GHC { } f 61+ GHC { }
07=	Materials for rituals and sacrifices { }	a 1-20 GHC { } b 21-30 GHC { } c 31-40 GHC { } d 41-50 GHC { } e 51-60 GHC { } f 61+ GHC { }
08=	others specify	a 1-20 GHC { } b 21-30 GHC { } c 31-40 GHC { }



		d 41-50 GHC { }
		e 51-60 GHC { }
		f 61+ GHC { }

15. Mention the types of NWFPs 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 NWFP you mentioned in Q15 extracted and processed?

.....

.....

.....

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

01=Community market

02=Gambaga market

03=Nalerigu market

04=Walewale market

05=others specify.....

18. What type of the NWFPs 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 GHC

02=21-30GHC

03=31-40 GHC

04=41-50GHC

05=51-60GHC

06=61GHC +

20. Do you benefit from NWFP?

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

01.....

02 .....

03.....

22. If no Why?

01.....

02.....

03.....

### COMMUNITY MANAGEMENT SYSTEM FOR NWFP

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

01=Chief and Elders { }

02=Tendanas { }

03=Magazias { }

04=Clan/sectional /family heads { }

05=Soothsayers/Traditional Medical person /Diviners { }

06=Youth groups { }

07=Rain makers { }

08=others specify..... { }



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

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

- 01=Chief and Elders {            }  
 02=Tendanas {            }  
 03=Magazias {            }  
 04=Clan/sectional /family heads {            }  
 05=Soothsayers/ Medicine men/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 NWFPs 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 NWFPs 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=.....
- 05=.....

29. What other institutions manage NWFPs 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 manage NWFPs; 4=Present but don't manage NWFPs; 3=Not present; 2=don't know*

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

1. FSD {.....}
2. MOFA {.....}
3. EPA {.....}
4. GNFS {.....}
5. NADMO {.....}
6. DA {.....}
7. NGOs {.....}
8. Others specify {.....}

*Indicate using the following numbers (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 were NWFPs 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 NWFPs?

01=Fine 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 NWFPs 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 { }

05= others specify..... { }

Grade as follows: 5=Very effective; 4=Effective; moderately effective; 2=Ineffective;  
1=Note applicable

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

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

02= Protection of sacred groves/forest. { }

03= Regular soothsaying to unearth impending disasters e.g. rain fall { }

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 by-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 *NWFPs* could be managed better?

01.....

02.....



03.....

04.....

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

01=Reduced (.....)

02=Increased (.....)

03=Remained the same (.....)

Give examples .....

42. Give reasons for the trend?

.....

.....

.....

.....

#### F. NON-WOODY FOREST PRODUCT MANAGEMENT AND POLICY ISSUES

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

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 Q44 say?

- 01.....  
 02.....  
 03.....  
 04.....  
 05.....

47. In what way do the policies affect your NWFPs activities for livelihoods?

- 1=.....  
 2=.....  
 3=.....  
 4=.....

48. Are the policies mentioned in Q 44 same or different from what your community by-laws/guidelines on NWFPs say?

- 01=Yes the same  
 02=No different

49. If no, give reason(s).

- 01=.....  
 02=.....  
 03=.....  
 04=.....

50. Who implements the policies mentioned in Q 44 on NWFPs in this community? (Tick where applicable)

- |                        |     |
|------------------------|-----|
| 01=Government agents   | { } |
| 02=NGO workers         | { } |
| 03=Assembly persons    | { } |
| 04=Chief and Elders    | { } |
| 05=Tindanas            | { } |
| 06=District Assembly   | { } |
| 07=others specify..... | { } |





51. Who ensures that the policies on NWFPs implemented work in this community?

- 01=Government agents { }
- 02=NGO workers { }
- 03=Assembly persons { }
- 04=Chief and Elders { }
- 05=Tindanas { }
- 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 proces { }
- 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 Q53? *Roles mentioned should be graded as follows: 5=Very strong role; 4=Strong role; 3=Fair role; 2= Poor role*

- 01=.....
- 02=.....
- 03=.....





04=.....

56. What were the problems/challenges you faced?

01=.....

02=.....

03=.....

04=.....

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

01=.....

02=.....

03=.....

04=.....

APPENDIX 2

**UNIVERSITY FOR DEVELOPMENT STUDIES,  
RESEARCH AND GRADUATE CENTER, UDS,  
NAVRONGO**

**FORMAL INSTITUTIONS QUESTIONNAIRE**

**INTRODUCTION**

The study is aimed at exploring the capacity of Non-Woody Forest Products (NWFPs) for improved livelihoods, incomes and rural economies in Northern Ghana. In line with this the study will explore the impact of NWFP policy (ies) and its implementation on the livelihood of rural communities and the development of Northern Ghana 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=NWFP  
07=others specify.....

4. What is your understanding of NWFP?

.....

.....

.....

.....

5. What are/is the organizational policies/ policy for the management of the resources/NWFPs mentioned in Q1?

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 their 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 (chefs, elders, Tendanbas, Magazias)

{ }

02= community members

{ }

03=Youth groups

{ }

04=.Others specify.....

{ }

10. If no, give reason(s)

01=.....

02=.....

03=.....

04=.....

11. At what stage were 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 NWFPs?

01=.....

02=.....

03=.....

04=.....

05=.....

#### **E. IMPLEMENTATION PROCESSES**

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

01=.....

02=.....

03=.....

04=.....

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 NWFPs 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 NWFPs MANAGEMENT, PROCESSING AND MARKETING**

25. What Organizational/district programme are in place for NWFPs management.

01=.....

02=.....

03=.....

04=.....

05=.....

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

01=.....

02=.....

03=.....

04=.....

05=.....

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

01=.....



02=.....

03=.....

04=.....

05=.....

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 NWFPs, processing and marketing?

01=.....

02=.....

03=.....

04=.....



## **GROUP DISCUSSION GUIDE FOR NATURAL RESOURCE USERS, TRADITIONAL INSTITUTIONS AND KEY INFORMANTS**

### **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-WOODY FOREST PRODUCTS (NWFPs) FOR IMPROVED LIVELIHOODS AND SOCIAL DEVELOPMENT**

- 2.1. Understanding of NWFP
- 2.2. Existence and type of NWFPs in community forest
- 2.3. Contribution of NWFP to individual annual income (assess in monetary terms/annum)
- 2.4. Users of NWFP
- 2.5. Nature of benefit derived from it

#### **3. EXTRACTION, PROCESSING AND MARKETING OF NWFPs**

- 3.1. How is NWFP extracted and processed
- 3.2. What NWFPs markets/trades exist (local & foreign?)
- 3.3. What is the nature of Demand and supply of NWFPs?
- 3.4. What are the levels of income from various NWFPs livelihood related activities mentioned above
- 3.5. What are the challenges in the extraction, processing and marketing of NWFPs?
- 3.6. Any suggestions for overcoming the challenges

#### **4. MANAGEMENT OF NWFPs**

- 4.1. NWFPs management system(s) indigenous or other wise) in place
- 4.2. NWFPs management systems trend (past, present, future)
- 4.3. Institutions and structures for managing NWFPs

4.4 existence of rules and regulations governing the management of NWFPs and what are they

4.5 trend of NWFP stock (reduced, increased, the same over the past 5 years)

4.6 reasons for the trend

4.7 challenges in the management of NWFP

4.8 suggestions for better management





**5. POLICY IMPLICATION FOR THE MANAGEMENT, DEVELOPMENT, UTILIZATION, PROCESSING AND MARKETING OF NWFPs FOR IMPROVED LIVELIHOODS AND RURAL INCOMES IN NORTHERN GHANA**

- 5.1. Current policy on forest/NWFPs
- 5.2. Current policy potential/limitation for development of NWFPs as a livelihood security strategy for NG
- 5.3. Levels of involvement of local institutions and structures in the design of NWFP policies
- 5.4. Effectiveness of the policy
- 5.5. Challenges with the policies
- 5.6. Suggestions for improvement

