AN ASSESSMENT OF RURAL LIVELIHOOD SYSTEMS IN SELECTED COMMUNITIES IN THE NORTHERN REGION OF GHANA

By

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DECLARATION

I hereby declare that this submission is my own work towards the MSc degree and that, to the best of my knowledge, it contains neither material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

This thesis uses the sustainable rural livelihoods framework to investigate the livelihoods systems of rural communities in Northern Region of Ghana. The communities in the area are among the poorest in Ghana and are largely dependent on natural capital for their survival. It is argued that livelihood systems in the area are complex, varied and dynamic, and that for development to be sustainable, it needs to be informed by a thorough understanding of the many factors that shape the context in which livelihoods are generated.

The research is based primarily on 'in-depth' micro-studies of four villages in the region. It includes a detailed assessment of the extent of the various factors that make households vulnerable to livelihood shocks, trends and seasonality. The roles of the natural resource base, and the under-development of infrastructure and services in the area, are discussed in relation to livelihood prospects. A systems approach is used to examine the various ways in which livestock husbandry, crop farming, natural resource use, employment and migration interact. Finally, the thesis examines in some detail the distribution of household assets, livelihood strategies and livelihood outcomes within the four villages.

The study revealed certain livelihood challenges that rural folks grapple with. Generally low levels of assets (particularly natural, human, financial and physical) were found. It was discovered that rural folks engage in diverse activities to make ends meet or survive. The thesis also made suggestions of how to circumvent or resolve the major challenges discovered in rural livelihoods.

DEDICATION

To My Wife and Children

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LIST OF ABBREVIATIONS AND ACRONYMS

ARDRI	Agricultural and Rural Development Research Institute
CEPA	Centre for Policy Analysis
CSO	Civil Society Organisation
DFID	Department for International Development
FAO	Food and Agricultural Organisation
FGD	Focus Group Discussions
FM	Frequency Modulation
GES	Ghana Education Service
GLSS	Ghana Living standards Survey
GPRS I	Ghana Poverty Reduction Strategy
GSS	Ghana Statistical Service
IDS	Institute for Development Studies
IRD	Integrated Rural Development
KVIP	Kumasi Ventilated Improved Pit
LEAP	Livelihood Empowerment against Poverty
MDAs	Ministries, Departments and Agencies
NGO	Non-Governmental Organisation
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
PRA	Participatory Rural Appraisal
SA	South Africa
SAP	Structural Adjustment Programme
SL	Sustainable livelihood
SLA	Sustainable Livelihood Approach
SLF	Sustainable Livelihood Framework
SPSS	Statistical Package for the Social Sciences
SSA	Sub-Saharan Africa
UK	United Kingdom
USAID	United States Agency for International Development
WB	World Bank
WDR	World Development Report
WFP	World Food Programme

CHAPTER ONE

1.0 GENERAL INTRODUCTION

1.1 Background

The livelihoods and quality of life of the rural dwellers in Sub-Saharan Africa is affected or even controlled by a multiplicity of factors or contexts that make life for them almost a struggle for survival. These factors border on economic policies, agro-climate, environment, socio-culture, demography, infrastructure, services, governance and so forth.

About 75% of the world's poor live in rural areas thus making them a large habour of poverty. Though urban poverty is rising, the correlation between poverty and remoteness from urban centres is strong in most countries and it is expected to remain so until at least the second decade of the century (Carney, 1999). Clearly therefore the International Development Target of halving the number of people living in extreme poverty by 2015 will be achievable if the problem of rural poverty is confronted head-on. Rural people are not only isolated from economic opportunities. They also tend to have less access to social services such as health, sanitation and education; for example, it is estimated that around 1 billion rural households in developing countries lack access to safe water supplies. Moreover, knowledge of rights and information about the way governments function is notably lacking in rural areas. This makes it hard for rural people to exert pressure for change in systems which have often actively discriminated against them both in the allocation of resources and in pricing policies for their produce (Carney, 1999).

Agriculture remains a centrally important part of the West African economy, providing 30–50% of GDP in most countries, the major source of income and livelihoods for 70–80% of the population, food supplies and revenue from export of cash crops. While the economies and peoples of the region are diversifying into a range of other activities, farming is likely to remain of central significance to incomes and livelihoods for the foreseeable future (Fafchamps, *et al*. 2001).

Despite the importance of farming to rural livelihoods according to WDR (2008) staple food yields in Sub-Saharan Africa are poor due to low adoption of productivity enhancing inputs. Exploitable yield gaps are high. Soil degradation from poorly managed intensification reduces potential yields. On-farm demonstrations using available 'best bet' technologies suggest a wide gap for maize in particular. Other factors that affect agriculture in Sub-Saharan Africa are; dependence on rain-fed agriculture, diverse food crops (8 crops- maize, rice, wheat, millet, sorghum, cassava, yams, bananas/plantains- are major staples in Africa), poor infrastructure, discrimination against agriculture and low investment.

In Ghana over 60 percent of the population depends on agriculture for their livelihood (Al- Hassan and Diao, 2007), particularly the Northern Ghana where majority of the population is in agriculture. The northern parts of Ghana comprising of Northern, Upper East and Upper West Regions have been described as the most poverty-stricken and hunger spots in Ghana (GLSS, 2000). The high incidence of poverty in Northern Ghana has been attributed to exclusion from trade (Aryeetey and Mckay, 2004; ODI and CEPA, 2005) and the slow down of growth in the staple crop sub-sector.

Rural households engage in several activities as sources of income. Five broad typologies of rural household livelihood strategies are distinguished; market oriented, subsistence oriented, labour oriented, migration oriented and migration. In Ghana in 1998, 13%, 41%, 24%, 3% and 19% were engaged in the different typologies respectively (WDR, 2008 citing Davis et al, 2007).

Generally men in surveyed communities in northern Ghana had limited sources of livelihood according to Quaye (2008). For them, crop farming and animal rearing were found to be the most important income generating activities. Few are engaged in trading, charcoal burning, hunting and other artisanal jobs. Women, on the other hand, are engaged in a variety of economic activities. These include crop farming, animal rearing (especially pigs and fowls), food processing, *pito* brewing and sheabutter extraction. Other activities were petty trading, soap making, food vending, firewood collection, pottery, weaving and so forth.

1.2 Problem Statement

Agriculture is a source of livelihoods for an estimated 86 percent of rural people worldwide. It provides jobs for 1.3 billion smallholders and landless workers, "farm-financed social welfare" when there are urban shocks, and a foundation for viable rural communities. Of the developing world's 5.5 billion people, 3 billion live in rural areas, nearly half of humanity. Of these rural inhabitants an estimated 2.5 billion are in households involved in agriculture, and 1.5 billion are in smallholder households (World Development Report, 2008). It has been revealed by Narayan et al (2000) that in rural areas much hardship is linked to reduced access to land, bad soils, adverse weather, lack of fertilizer and other inputs, deficiencies of transport and marketing, and overexploitation of common resources such as fish, pastureland and forests.

Rural livelihoods engage in mixed activities often based primarily on agriculture but increasingly combined with non-farm activities. They have limited opportunities for earning cash income. Family farms in West Africa according to Toulmin and Gueye (2003) face distinct problems which include a growing shortage of land (particularly in peri-urban areas), illiteracy and poor access to schooling (which hinder access to new technologies and innovative practices), low value accorded to the status of agricultural smallholder, poorly developed organisation of smallholder agricultural production, inheritance and fragmentation of land holdings and so forth.

The Northern Region of Ghana is prone to erratic conditions of both climatic and environmental nature. Droughts and soil degradation or loss of soil fertility are some of the conditions that form part of the vulnerability context which determine the livelihoods or life opportunities of the rural inhabitants of the region. About 80% of the over 1.8 million population of the region depends on agriculture for their livelihood. The farming system depends mainly on natural soil fertility and very little on inorganic fertilizers. The population growth rate is about 3% (Ghana Statistical Service 2002). In the predominantly smallholder farming systems of Northern Ghana, livelihoods are directly dependent on harvestable crop yields on seasonal basis. Despite the fact that access to water and irrigation is a major determinant of land productivity and the stability of yields and also that irrigated land productivity is more than double that of rain-fed land these are in short supply. Therefore some of the

important constraints to sustainable production in northern Ghana are the dry spells during the cropping seasons and low fertility of farmlands. About 800-1,000 mm rain per annum is received over a five-month period (May-September) followed by seven months of dry crop-free periods. The inadequate capacity to harvest rainwater for domestic, crop and livestock needs and reliance on crop varieties and cropping systems that do not adequately match water availability lead to reduced harvestable crop yields.

Poverty is widespread in rural areas of Ghana, with the magnitude and incidence of poverty greatest in the north of the country where food insecurity manifesting in low consumption and high malnutrition and mortality rates is a widespread phenomenon (Nyanteng and Asuming-Brempong, 2003). With erratic rainfall and only marginal soil fertility, feeding the growing population is a major challenge and a prerequisite to rural development. Declining soil fertility resulting from continuous cropping and mono-cropping has led to declining yields of maize, sorghum, and groundnut (Abatania and Albert, 1993).

In a study sponsored by the World Bank and conducted in 23 countries worldwide including Ghana in 1999, it was revealed that uncertainty of livelihood sources in general was serious for the poor in rural areas in particular. Insecurity from lack of assets and money was often mentioned, but more often implied. For many their body is the main or only asset. Housing and shelter are also found as sources of discomfort and distress for the rural poor. The physical ill-being of hunger and sickness, and the pain, stress and suffering they bring are a common theme in rural areas. (Narayan et al, 2000).

1.3 Research Questions

The vulnerability context set by the above stated negative/adverse conditions among others call for the adoption of diverse combinations of activities by the rural inhabitants of Northern Region in order to adapt. Sustainable livelihoods are a sine qua non for rural development, poverty reduction and environmental management. Also against the background that most rural livelihoods are reliant on the natural resource base, a number of questions are justified regarding how rural people in Northern Region of Ghana survive in general;

- In the eyes of rural people, what agro-climatic and socio economic conditions are they faced with?
- What assets are available for households to rely on to deal with food security and other elements in their vulnerability context?
- How do structures and processes influence their livelihoods?
- What kind of strategies do they adopt for survival and what outcomes do they aspire to?
- Do the rural communities achieve sustainable livelihoods with their current resources, structures and processes?

1.4 Objectives of the Study

General Objective: to analyse the livelihood capital base, structural and institutional arrangements, strategies and outcomes of rural Northern Region and to recommend interventions for improvement.

Specific Objectives are to:

1. assess local perceptions of local climatic, ecological and socio-economic hazards and risks as they affect their livelihoods
2. identify and assess livelihood resources of the rural communities and their sustainability
3. identify how organisations and institutions affect the livelihoods of the rural communities in the eyes of the rural people themselves
4. assess livelihood adaptation practices (strategies) and technologies, and what the rural people aspire to
5. assess the sustainability of rural livelihoods with regard to their current resources, orgainsations and institutions and strategies
6. give recommendations/suggestions based on findings for improvement in rural livelihoods in Northern Region

1.5 Scope of the Study

The study was carried out in four selected rural communities in Northern Region of Ghana. With the exception of the regional and district capitals all the other communities in the region are considered rural. Data collected was based on trends from the last decade and the current realities.

The study used participatory and qualitative research methods to look at the sources of vulnerability, assets and resources available for survival, policies and institutions that impact on lives, how they respond to threats and opportunities (strategies) and what form of outcomes people aspire to through rural people's own voices about the realities of their lives. It was not possible due to time limitations and the academic requirement of the study to have an in-depth analysis of all the issues even though the factors impact differently on the different categories of people dwelling in rural areas. It is however a viable overview that enables follow-up investigations of factors that pose particular problems or offer special opportunities for the rural people of the Northern Region of Ghana who are generally poor.

1.6 Justification of the Study

The research report can serve as a foundation document for subsequent activities by public planning authorities and Non Governmental Organisations (NGOs) and also as a starting point for the design of effective programme interventions grounded in rural peoples' own realities and efforts. It is when empirical information regarding the livelihoods, the factors that militate against the development of sustainable livelihoods and coping strategies of the rural communities and their priorities is available that sustainable policy interventions can be formulated based on the enhancement of their coping strategies to ensure income improvement, wellbeing, poverty alleviation and sustainable development of the entire region. Such understanding allows proper design and adaptation of superior technological, institutional and policy options that could remove constraints which limit rural peoples' abilities to fully utilize those options and improve their livelihoods. It is acknowledged that top-down and erroneous identification of development problems is one of the causes of many development intervention failures. It will also help those planning sustainable livelihood interventions to locate suitable entry points amid the complexity which characterises both the policy arena and the reality within which the rural poor map out their livelihood strategies.

Livelihoods in rural areas are complex and diverse, affected in different ways by policies to promote agricultural growth. Policies for effective poverty reduction need to be informed not just by the evidence of agriculture's contribution to pro-poor growth but by a good understanding of the realities and dynamics of both the

agricultural sector and rural livelihoods – and of how poor rural households are constrained or supported by policies and institutions. The challenge for policy makers is to base policies on good understanding of their complexity and diversity.

Reducing risks and creating the enabling conditions for rural economic growth and development require a thorough understanding of local perceptions, traditional principles and adaptive strategies pursued by society under different local perspectives- hence the relevance of this study. The findings will also add to the store of knowledge about the livelihoods of rural dwellers.

1.7 Organisation of Report

The thesis report is structured as follows:

Chapter 1 introduces the study, the research problem and the key research questions and objectives.

Chapter 2 provides the theoretical orientation of the thesis and review of related literature.

Chapter 3 describes the general introduction to the study area. The greater NR area, including the four districts of study villages (Nbanaayili, Kusawgu, Batei amd Nasia) is described in terms of its physical and administrative location, systems of administration, political context, natural environment and human environment. A range of research methods that were used in conducting the study is discussed. It also describes the methods that were used in analysing the data presented in chapter four.

Chapter 4 presents the results and discussions.

Chapter 5; informed by the over-arching livelihood systems described in Chapter 4, the findings therein are revisited and discussed in terms of their implications for policy development and for local development in the study area. Recommendations for improvement are also given in the chapter.

Chapter 6 presents a brief summary of the study.

CHAPTER TWO

2.0 THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 Introduction

'Theory' a set of ideas normally established that guides to explain some issues that may not be fully established to be true- or assumptions- frames how we think about and approach the study of a topic, whether we are conscious of it or not. Theory gives us concepts, provides basic assumptions, directs us to the important questions, and suggests ways for us to make sense of data. Using social theory makes us think through research (Pryke et al, 2003). This chapter seeks to present the theoretical framework of the study in an explicit manner to prevent hazy thinking, faulty logic and imprecise concepts. It will also review literature relevant to the study.

2.2 Definitions and Meanings of Terms

The following definitions and meanings of key words and concepts are what the study adopts for the understanding and analysis of issues.

A **livelihood** comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. Capabilities, in this context refer to a person's, or household's ability to cope with stresses and shocks, and the ability to find and make use of livelihood opportunities. Assets refer to the basic material and social resources that people have in their possession (Scoones, 1998). Activities refer to the ways in which capabilities and assets are combined to achieve livelihood outcomes. The concept of livelihoods enables us to broaden our understanding of household food security and vulnerability – as 'livelihoods also imply a complex web of risk diversification, social networks and coping strategies'. According to Ouden (1997) quoted by Eyob (1999), livelihood best expresses the idea that individuals and groups strive to make a living, attempt to meet their various consumption and economic necessities, cope with uncertainties, respond to new opportunities, and choose between different options.

A **livelihood is sustainable** when it can cope with or recover from the stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining its natural resource base (DFID, 2000).

A **livelihood system** is the total combination of activities undertaken by a typical household to ensure a living. Most rural households have several income earners, who pursue a combination of crop and livestock, farm, off-farm and non-farm activities in different seasons to earn a living (FAO, 2005).

"A **household** is a group of people who eat from a common pot, and share a common stake in perpetuating and improving their socio-economic status from one generation to the next" (FAO, 2005).

A "**community**" refers to the locus where all members of a group of people having some form of collective claim over a territory and recognizing some form of collective governance can be given the opportunity to influence decisions in matters of public choice that affect their livelihood (that is the locus where direct participatory democracy is a concrete possibility) (FAO 2005).

Rural Communities and their Characteristics

Rural areas can be defined by settlement size, population density, and distance to metropolitan areas, administrative division, and importance of the agricultural sector. This also means that national definitions of "rural" can have quite different meanings in different countries.

The Organisation for Economic Co-operation and Development (OECD) uses population density of 150 people per square kilometre to define rural. Differences in population density and distance to market towns imply very different challenges for infrastructure, service delivery, and rural development. High population density makes it cheaper to provide public goods, such as roads. Low population density increases the cost of such investments but eases constraints of land resources.

Rural communities by definition are less densely populated. They are mostly homogeneous in contrast to the heterogeneous nature of modern towns. Here because of the smaller numbers, face-to-face relationships are more probable. Village people know each other in a way that applies less in urban communities. In rural communities, traditional behaviour patterns value systems are sustained. Family and kinship form the basis of traditional values. An individual receives his status in

society from his family and his kinship network. It is his first environment and the one by which he is surrounded all his life. From it he receives his security in times of sickness or old age. Migrants especially in Africa retain roots to their villages.

Majority of people in rural areas are agriculturalists, fishers, pastoralists or hunters depending on land and other resources. Values are therefore attached to the territory occupied by the community. Here there is lack of much division of labour. Methods of production are technically simple. Due to lack of mechanical equipment and low technology, the productivity of men and women is not high and acquiring the basic needs of food, shelter and clothing is a full time job. A large part of production in these economically simple societies is not covered by wage and price mechanisms. Most food items are produced to meet the needs of the producing unit and great value is attached to self-sufficiency.

According to OECD (2006) devising the right policy environment requires in-depth knowledge of the livelihood strategies of rural households and careful consideration of ways to protect and promote those strategies. The right policy environment also needs to reflect the large disparities among the many categories of rural households, or "rural worlds" and OECD considers five:

Rural World 1: Large-scale commercial agricultural households and enterprises.
Rural World 2: Traditional land holders and enterprises, not internationally competitive.
Rural World 3: Subsistence agricultural households and micro-enterprises.
Rural World 4: Landless rural households and micro-enterprises.
Rural World 5: Chronically poor rural households, many no longer economically active.

2.3 A Brief History of Development Strategies

A brief history of the evolution of rural development strategies including the SLA may be illustrative. In the 1950s–60s the focus of donor attention fell on increasing the production of staple crops through investment in agricultural research and related technical services- the basis for the 'Green Revolution', which was highly successful although its benefits tended to be skewed towards richer farmers and more favourable environments.

In the 1970s when the economic conditions faced by farmers changed relatively little, donor spending patterns shifted quite considerably. This was the decade of 'Integrated

Rural Development' (IRD), a policy response to the recognition that income generation would remain important and that increased crop yields would not alone solve rural problems. For the first time the complexity of rural life was taken into account.

The 1980s saw the beginning of efforts to reform or 'adjust' the agriculture sector. At first this meant making state enterprises more efficient, but by the late 1980s the emphasis was on economic liberalization and privatization.

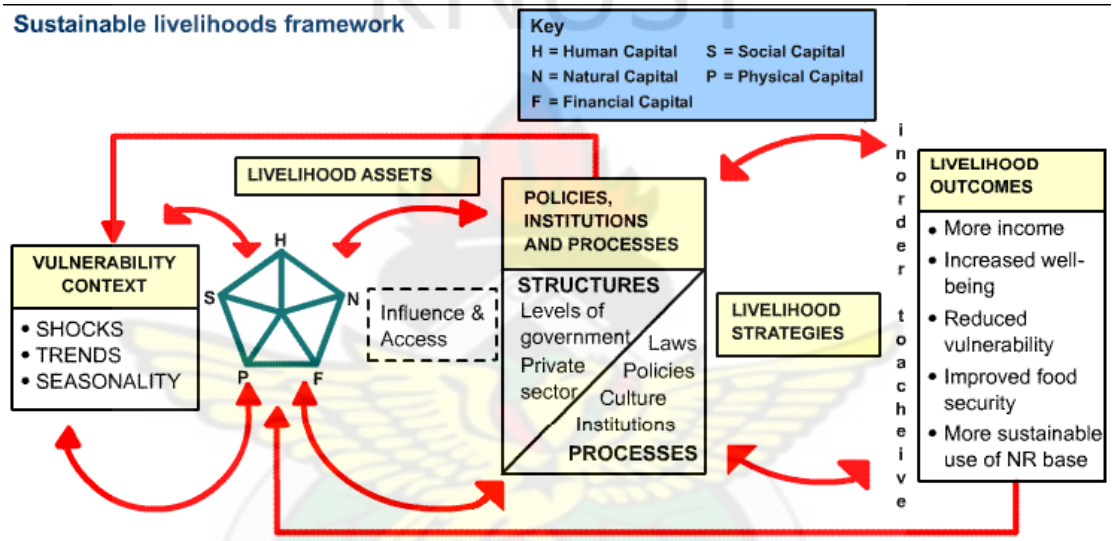
The rural development agenda of the 1990s was characterised by two main themes: a strong emphasis on the environment and the protection of natural resources and a continued focus on macro policy (liberalisation, the role of government in relation to the private sector and the importance of effective public management- a particular concern of advocates of agriculture sector programmes).

Despite all these, many of the old problems still remained- rural people, especially in Africa, still suffer from inadequate public services, underdeveloped markets, poor communications infrastructure and poor health and education. Civil conflict and war continued to threaten their livelihoods. Building on lessons from the past and insights from recent poverty assessments, the new livelihoods approaches are attempting to address rural problems by uncoupling the concepts 'rural' and 'agricultural' and widening the scope of rural development activity. They see sustainable poverty reduction as achievable only if external support works with people in a way that is congruent with their existing livelihood strategies and ability to adapt.

2.4 The Sustainable Livelihoods Framework

The study was conducted based on the sustainable livelihoods framework. Sustainability has many dimensions, all of which are important to the sustainable livelihoods approach. Livelihoods are sustainable when they; are resilient in the face of external shocks and stresses; are not dependent upon external support (or if they are, this support itself should be economically and institutionally sustainable); maintain the long-term productivity of natural resources; and do not undermine the livelihoods of, or compromise the livelihood options open to others.

The sustainable livelihoods (SL) approach draws on an improved understanding of poverty, but also on other streams of analysis, relating for instance to households, gender, governance and farming systems, bringing together relevant concepts to allow poverty to be understood more holistically. As a result of the UK government's commitment to the International Development Target of reducing by half the proportion of people living in extreme poverty by 2015, DFID consulted widely in order to increase its understanding of the nature of poverty and how it might be addressed and one of the outcomes of this consultation was the sustainable livelihoods framework as presented in Figure 2.1 below.



Source: The sustainable livelihoods framework (Carney 1998, Scoones 1998)
Figure 2.1: The Sustainable Livelihood Framework

The livelihoods framework (Figure 2.1) is intended as an analytical/operational structure for coming to grips with the complexity of livelihoods, understanding influences on poverty and identifying where interventions can best be made. Through the 1990s livelihood largely replaced employment to make space for the actual complexity and diversity of how most poor people gain a living. It seeks to present a graphic representation of the main factors that underpin, and/or influence, the creation of livelihoods. It is also 'systems-orientated' in that it attempts to make explicit the nature of the relationships, and inter-relationships, between different factors. The SLF can be used both as a conceptual tool for improving scholastic understanding of livelihoods and or as an applied tool to aid the identification of appropriate entry points for support of livelihoods.

The assumption is that people pursue a range of livelihood outcomes (health, income, reduced vulnerability, and so forth.) by drawing on a range of assets to pursue a variety of activities. The activities they adopt and the way they reinvest in asset-building are driven in part by their own preferences and priorities. However, they are also influenced by the types of vulnerability, including shocks (such as drought), overall trends (in for instance, resource stocks) and seasonal variations of conditions and resources. Options are also determined by the transforming structures (such as the roles of government or of the private sector) and processes (such as institutional, policy and cultural factors) which people face. In aggregate, these conditions determine their access to assets and livelihood opportunities, and the way in which these can be converted into outcomes. In this way, poverty, and the opportunities to escape from it, will depend on the interplay of all of the above factors.

2.4.1 Interrelatedness of the Components of the Framework

The arrows within the framework are used as shorthand to denote a variety of different types of relationships all of which are highly dynamic. None of them imply direct causality but imply a certain level of influence. One of the outcomes of the increased academic interest in rural livelihoods in recent years has been the realisation that livelihoods are complex and dynamic systems, involving a diverse mix of assets and activities often spanning multiple economic sectors (May, 1996; Kepe, 1997; Ellis, 1998; Carter and May, 1999; Bryceson, 2000; Campbell *et al.*, 2002; Scoones and Wolmer, 2003). The complexity and flux of these systems pose particular challenges for development practitioners as, without an appreciation of the inter-connectedness of components, interventions into any one particular sphere run the risk of having unintended negative 'knock-on effects' on other components of the system (Carney, 1998). In this sense livelihood systems are not that different to ecological systems. Some commentators argue that, given their connectedness to, and embeddedness in, natural (biophysical) systems, rural livelihood systems should in fact be viewed as extensions of ecological systems (Adger, 2000; Holling, 2001). As with ecological systems, it is therefore necessary to take a holistic systems view of livelihoods which is built on an understanding of the connectedness and inter-relationships between the various components. The livelihoods approach provides the framework for such a view and goes further to recognise that components of the system may be inter-changeable with certain assets and activities being substituted for

others as the need arises (Carney, 1998; Scoones, 1998; Allison and Ellis, 2001). As with all complex systems, different components of the system are likely to be differentially weighted in terms of their linkages with other components. It thus becomes possible to identify so-called 'key determinants' – variables that have a strong influence on system processes and outcomes (May, 1987; Carswell, 2000; Ellis, 2000a).

The form of the framework (Figure 2.1) is not intended to suggest that the starting point of all livelihoods is the vulnerability context which through a series of combinations and permutations yields livelihood outcomes. Livelihoods are shaped by a multitude of different forces and factors that are themselves constantly shifting. The framework summarises the main components of and influences on livelihoods and does not provide an exhaustive list of the issues to be considered because there are some feedback relationships that are not covered.

The SL approach is flexible in application and is based on certain core principles; a focus on people, that it puts people at the centre of development. Holism- it identifies livelihood-related opportunities and constraints regardless of where they occur. And macro-micro links where it indicates that even though people's assets and aspirations are micro in orientation, many factors that affect their livelihoods have distinctly macro characteristics.

2.4.2 Vulnerability Contexts

The vulnerability context frames the external environment within which people exist and pursue their livelihoods. Work by Sen (1981) has shown that vulnerability is often a key component of poverty. With this in mind, the vulnerability context seeks to depict the dynamic 'macro-environment' influencing livelihoods. Understanding of the vulnerability context provides an insight into the kinds of factors that have the potential to negatively impact on people's livelihoods. It draws attention to the fact that for many people, reducing vulnerability may be a key livelihood objective and may also influence their choice of livelihood strategies. The vulnerability context also identifies arenas in which development agencies can assist in reducing vulnerability– by addressing the factors causing vulnerability, or by assisting people in strengthening their resilience to these factors.

People's livelihoods and the wider availability of assets are fundamentally affected by critical trends, by shocks and by seasonality over which they have limited or no control (DFID, 1999). It affects different people in different ways. They generally interlock to keep people poor or drive them further into poverty.

In rural communities around the world, the poor report a host of agricultural difficulties. The nature and intensity of these problems vary from one village to the next, but broad patterns do emerge. Farmers and herders often mention problems with gaining access to land, land shortages and fragmentation, costly inputs and declining profits, and problems with accessing credit and extension services and with transporting goods to markets. People also report that problems of soil infertility, declining fish stocks, degradation of grazing lands and forests and other environmental problems pose very serious threats to rural livelihoods for many. (Narayan et al, 2000)

The vulnerability context of poor people's livelihoods is usually influenced by external factors outside their direct control and is dependent on wider policies, institutions and processes. To support people to be more resilient to the negative effects of trends, shocks and seasonality, development policy-makers and practitioners can support people's access to assets and help ensure that critical policies, institutions and processes are responsive to the needs of the poor.

Trends are slow-moving, often benign, changes in the macro-environment, the trajectory of which may be tracked with relative accuracy. These might include broader population trends, natural resource trends and/or national and international economic trends (Chambers and Conway, 1992). Trends can manifest in different forms; economic (both national and international) trends, resource trends (including conflict), governance trends (including politics) and technological trends. For example changes such as international commodity prices, will affect those who grow, process or export such commodities but have little effect on those who produce for, or trade in, the local market. Global warming is another area of greatest uncertainty for agriculture. Climate change will have far-reaching consequences for agriculture that will disproportionately affect the livelihoods of the poor. It will hit poor farmers the

hardest— and hit them unfairly because they have contributed little to its causes (WDR, 2008). Greater risks of crop failures and livestock deaths are already imposing economic losses and undermining food security and they are likely to get far more severe as global warming continues.

Soil degradation is also a major constraint to agriculture in Sub Saharan Africa (SSA). The combination of shorter fallows, expansion to more fragile land driven by rapid population growth, and a lack of fertilizer use is degrading soils in Sub-Saharan Africa. About 75 percent of the farmland is affected by severe mining of soil nutrients. According to a recent report by the International Fertilizer Development Centre, the average rate of soil nutrient extraction is 52 kilograms of nitrogen-phosphorus-potassium per hectare per year, five times the average application of 10 kilograms per hectare of nutrients through chemical fertilizers.

Soil erosion is another major problem in the tropics. Ecological fragility and harshness of the climate such as high intensity rainstorms and high temperatures coupled with population pressure exacerbate the problem. In India out of a total of 328 million hectares of geographical area about 175 million hectares are undergoing intense soil erosion processes (Dhruva et al, 1984 cited in Beets, 1990). In large parts of Africa the situation is even worse. A maize yield loss of as much as 58 kg per ha per crop was measured on a Nigerian Alfisol for the first centimetre of soil (Lal 1984 cited in Beets, 1990).

Shocks are usually in forms such as conflict, economic shocks, health shocks (human and livestock/crop) and natural shocks such as earthquakes. Natural shocks may have more negative effects on agricultural activity than on urban employment. Vulnerability to these risks is a result of poverty and socioeconomic position, influenced by social dimensions such as income levels, asset ownership, ethnicity, age, class, and gender.

Drought is one of the physical factors that can constrain the yields of crops and it can affect up to 80 percent of the total crop area with dire consequences on rural livelihoods. Even minor droughts can have great impact in the humid tropics since soils are often rather poor and have limited water storage capacity. In the sub-humid

and semi-arid tropics serious droughts occur often (ranging from 1:2 to 1:5 years). Yield reductions due to less serious mid season and end of season droughts are around 20-30 % per annum (Beets, 1990).

On a different yet equally an important scale, civil wars based on clan rivalries and ethnicity in several nations have brought untold suffering to the poor and even after years of peace life has not returned to pre-war standards. In Sarajevo, Bosnia Herzegovina, one person said, "even if I were to establish a household over a hundred years, I would never have what I had if the war hadn't destroyed everything" (Narayan et al, 1999).

Before the 1994 ethnic conflict ('Guinea Fowl War') in Northern Region which was the most widespread ever witnessed in modern Ghana there were similar less extensive ones in 1981, 1989 and 1991. The rural areas bore the brunt of the 1994 conflict with dire consequences on livelihoods. According to Mahama (2003) about 4,000 people lost their lives and about 150,000 were displaced as a result of indiscriminate burning of villages with property lost in billions of cedis. Before the war, Northern Ghana was already a disadvantaged area. The Northern Ghana being the poorest of the poor as a survey of Ghana's living standards showed at that time became worse after the war. Figures at the time showed that 54.2 percent of the poorest 10% lived in the North of the country and had a share of only 5% of natural resources even though it accounts for 15% of the population (Northern Ghana Inter-NGO consortium and Oxfam, 1998 cited by Mahama). The pre-war booming village markets were ghosts of their former selves. A huge number of school children were displaced. Over 700 schools in the war zone were closed and a large number of teachers from southern Ghana left, never to return for fear for their lives (ibid).

Seasonality (seasonal fluctuations in prices, production, health, employment opportunities) is usually associated with rural economies. It can however be equally problematic for poor people in urban areas, especially when these people spend a large proportion of their income on foodstuffs, the prices of which may be volatile.

These factors can have a direct impact on people's assets and the options available to them to pursue beneficial livelihood strategies. Shocks can destroy assets directly or

force people to abandon or prematurely dispose of them as part of their coping strategies– for example selling off livestock in the face of drought or to pay for medical care. Not all trends however are negative or can cause increased vulnerability– for example new technologies, medical advances or positive economic trends can help improve people's livelihoods.

Most of the poor rural people in the world live in areas of marked wet-dry tropical seasons. For the majority whose livelihoods depend on cultivation the most difficult time of the year is usually the wet season, especially before the first harvest. Food is short, food prices are high, work is hard, and infections are prevalent. Malnutrition, morbidity and mortality all increase, while body weights decline. The poorer people, women and children are particularly vulnerable. Birth weights drop and infant mortality rises. Child care is inadequate. Desperate people get indebted. This is both the hungry season and the sick season. It is also the season of poverty ratchet effects, that is, of irreversible downward movements into poverty through the sale or mortgaging of assets, the time when poor people are most likely to become poorer. The wet season is also the unseen season. Rural visits by the urban-based have their own seasonality (Chambers, 2006).

Seasonality is vividly illustrated by a Sri Lankan mother in Woolf's novel about Sri Lanka as follows:

> "I say to the father of my child, 'Father of Podi Sinho,' I say, 'there is no *kurrakan* in the house, there is no millet and no pumpkin, not even a pinch of salt. Three days now and I have eaten nothing but jungle leaves. There is no milk in my breasts for the child.' Then I get foul words and blows. 'Does the rain come in August?' he says. 'Can I make the *kurrakan* flower in July? Hold your tongue, you fool.' August is the month in which the children die. What can I do?

(Woolf Leonard, 1991 cited in Chambers 2006)

There is interconnectedness between seasonality and disease and nutrition problems of the disadvantaged. Sickness can have a longer term negative effects on food availability. Since many debilitating conditions have a variable seasonal coincidence and will reduce the supply of labour for vital agricultural operations if the peaks coincide with peaks in labour requirements. In India and Africa guinea worm causes temporary lameness and can confine the sufferer to bed for as much as five weeks and has a peak incidence which coincides with the planting season (Muller, 1981cited by

Gill, 1991). Seasonal adult weight losses in rural communities have also been documented. Lonhurst and Payne in two studies conducted in The Gambia and Ghana (cited by Gill, 1991) recorded losses of about 4- 4.5 Kilograms.

Seasonality affects prices too. Seasonal price fluctuations present twin problems for small farmers; high pre-harvest food prices for consumers and low post harvest commodity prices for the farmer. Small farmers pressed by urgent cash needs, are obliged to sell off their produce immediately after the harvest, when the sudden increase in supply together with lack of competition in local markets and poor communications with markets at secondary and tertiary levels help to drive prices relentlessly downwards. A set of similar forces combine to produce high seed prices in the growing season and high food prices in the pre-harvest season. An efficient rural credit market could play a crucial role in reducing the amplitude of the seasonal price cycle. In particular the shortage of capital which precludes on-farm storage could be eased by such a system. Unfortunately this is in many countries a prime example of an area in which both market and largely unsustainable policy interventions have combined to prevent the realisation of existing potential (Gill, 1991:162-163).

2.4.3 Livelihood Assets (Capital)

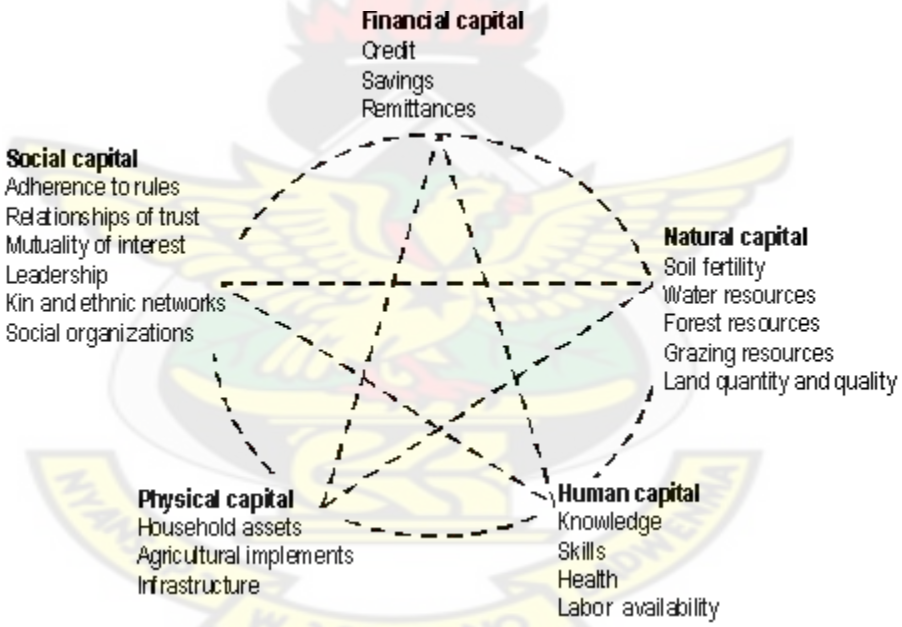
Livelihood assets are the basic building blocks from which livelihoods are generated. Household asset positions determine household productivity. More generally, household asset endowments condition livelihood strategies. Education and health status affect a person's potential to engage in high-value non-farm jobs as well as the returns on agriculture. Education might facilitate learning about new technologies, and given the physical intensity of most agricultural labour, health and nutrition can affect agricultural productivity.

The existence of, and degree of access to, livelihood assets is therefore important in influencing the livelihood options that people may, or may not, have. The livelihoods approach is concerned first and foremost with people. It seeks to gain an accurate and realistic understanding of people's strengths (assets or capital endowments) and how they endeavour to convert these into positive livelihood outcomes. The approach is founded on a belief that people require a range of assets to achieve positive livelihood

outcomes; no single category of assets on its own is however sufficient to yield all the many and varied livelihood outcomes that people seek. This is particularly true for poor people whose access to any given category of assets tends to be very limited. As a result they have to seek ways of nurturing and combining what assets they do have in innovative ways to ensure survival (DFID 1999).

The Asset Pentagon:

The asset pentagon lies at the core of the livelihoods framework, 'within' the vulnerability context. The pentagon was developed to enable information about people's assets to be presented visually, thereby bringing to life important inter-relationships between the various assets. The pentagon is as presented below (fig. 2.2).



Source: Campbell et al, 2001:7

Figure 2.2: The Five Capital Assets (modified from Bebbington 1999 and Carney 1998).

The livelihood framework which is the conceptual framework for this study identifies five core asset categories or types within which livelihoods are built hence the pentagon of assets. These are; natural, human, physical, financial and social assets. Sustainable livelihoods depend on the access to and control over these assets. For example differences in access to and control over assets dictate power asymmetries

and negotiating power between the power groupings within the household and community.

Relationships between Assets

Assets combine in a multitude of different ways to generate positive livelihood outcomes. Two types of relationship are particularly important; sequencing and substitution. Sequencing looks at whether those who escape from poverty tend to start with a particular combination of assets and whether access to one type of asset (or a recognisable sub-set of assets) is either necessary or sufficient for escape from poverty. If so, this may provide important guidance on where livelihood support should be focused, at least at the outset. Substitution examines whether one type of capital could be substituted for others. Whether say increased human capital can compensate for a lack of financial capital in any given circumstance, so as to extend the options for support or intervention.

Relationships of Assets with other Framework Components

Relationships within the framework are highly complex and understanding them is a major challenge of, and a core step in, the process of livelihoods analysis which can lead to action to eliminate or reduce poverty. People's assets can both be destroyed and created as a result of the trends, shocks and seasonality of the vulnerability context.

The constituent Institutions and Policies of the 'Transforming Structures and Processes' of the sustainable livelihood concept also have a profound influence on access to assets. They can create assets for example through government policy to invest in basic infrastructure (physical capital) or technology generation (yielding human capital) or the existence of local institutions that reinforce social capital. They can also determine access to assets through for example ownership rights, institutions regulating access to common resources and also influence rates of asset accumulation (for example policies that affect returns to different livelihood strategies- taxation, levies and so forth).

However, this is not a simple one way relationship. Individuals and groups themselves influence the Transforming Structures and Processes. Generally speaking the greater

people's asset endowment, the more influence they can exert. Hence one way to achieve people's empowerment may be to support them to build up their assets. Those with more assets tend to have a greater range of options and an ability to switch between multiple strategies to secure their livelihoods. Poverty analyses have shown that people's ability to escape from poverty is critically dependent upon their access to assets. Different assets are required to achieve different livelihood outcomes. For example, some people may consider a minimum level of social capital to be essential if they are to achieve a sense of well-being. Or in a remote rural area, people may feel they require a certain level of access to natural capital to provide security. These relationships are context-specific.

It has been asserted that nowhere is the lack of assets greater than in Sub-Saharan Africa where; farm sizes in many of the more densely populated areas are unsustainably small and falling, land is severely degraded, investment in irrigation is negligible, and poor health and education limit productivity and access to better options (WDR, 2008).

2.4.3.1 Natural Capital and Livelihoods

Natural capital is the term used for the natural resource stocks from which resource flows and services (for example nutrient cycling, erosion protection) useful for livelihoods are derived. There is a wide variation in the resources that make up natural capital, from intangible public goods such as the atmosphere and biodiversity to divisible assets used directly for production (trees, land, and so forth).

Within the sustainable livelihoods framework, the relationship between natural capital and the vulnerability context is particularly very close. Many of the shocks that devastate the livelihoods of the poor are themselves natural processes that destroy natural capital (for example fires that destroy forests, floods and earthquakes that destroy agricultural land) and seasonality are largely due to changes in the value or productivity of natural capital over the year. Natural capital is very important to rural dwellers because they derive all or part of their livelihoods from natural resource-based activities (farming, fishing, gathering in forests, mineral extraction, and so forth.). However, its importance goes way beyond this because no community would survive without the help of key environmental services and food produced from

natural capital. Health (human capital) will tend to suffer in areas where air quality is poor as a result of industrial activities or natural disasters like forest fires. And although understanding of linkages between resources remains limited, it is clear that people depend for their health and well-being upon the continued functioning of complex ecosystems. These are often undervalued until the adverse effects of disturbing them become apparent.

According to DFID (1999) more sustainable use of natural resources has direct impact upon natural capital and also that there is some positive correlation between higher income and investment in natural capital. Transforming Structures and Processes in the generic framework govern access to natural resources and can provide the incentives or coercion necessary to improve resource management. For example, if markets are well developed, the value of resources is likely to be higher prompting better management. However in some cases developed markets can lead to distress sales by the poor resulting in increased poverty.

DFID also says that it is not the existence of the different types of natural capital that is important, but also access, quality and how the various natural assets vary over time (for example seasonal variations in value). For instance degraded land with depleted nutrients is of less value to livelihoods than high quality, fertile land, and the value of both will be much reduced if users do not have access to water and the physical capital or infrastructure that enables them to use the water.

Field experience and studies suggest that a minimum quantity of safe water is required for a person to drink, prepare food, ensure personal cleanliness, and use a sanitary latrine. Drinking and cooking take 10 to 15 litres per day. Water needs for hygiene and sanitation are less precise, and vary from one culture to another. But a person who practices personal hygiene and uses a latrine needs an absolute minimum of 20 litres per day. Further health benefits accrue when communities move from public tap to house connections. Those with house connections usually use 40 or more litres per head. The total volume of water required to meet basic needs for all is thus relatively small, even for a city of 1 million, compared to agricultural and industrial uses, and even to household use by the wealthy. Thus the problem in domestic use is not water quantity. Sanitation is one of the most important interventions in improving

the human condition. Yet many agencies neglect hygiene and sanitation because they are not included in agency mandates. What constitutes good hygienic practice varies from culture to culture although the common aim is to break the faecal-oral transmission route of disease. Disposing of human wastes in a manner that does not contaminate the environment and that further limits the likelihood of disease transmission from person to person is a fundamental requirement. Minimum sanitation standards should be established at the national level (Van Damme, 2001).

2.4.3.2 Human Capital and Livelihoods

Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. At a household level human capital is a factor of the amount and quality of labour available; this varies according to household size, skill levels, leadership potential, health status, and so forth (DFID 1999). It is argued that all available knowledge in modern economics supports the facts that for the average person, the amount of knowledge that one possesses is positively correlated with his or her personal earnings.

Human capital appears in the generic framework of SLA as a livelihood asset, that is, as a building block or means of achieving livelihood outcomes. Its accumulation can also be an end in itself. Many people regard ill-health or lack of education as core dimensions of poverty and thus overcoming these conditions may be one of their primary livelihood objectives. In another vein widespread illness and death from HIV/AIDS and malaria can greatly reduce agricultural productivity and devastate livelihoods in rural Sub-Saharan Africa.

As well as being of intrinsic value, human capital that is knowledge and labour or the ability to command labour is required to be able to make use of any of the four other livelihood assets. Rural households' human capital endowments tend to be dismally low. Rural-urban gaps in educational attainment and health outcomes remain large in most regions. Regional averages for Sub-Saharan Africa, South Asia, and the Middle East and North Africa show that rural adult males have about 4 years of education, and rural adult females have 1.5 to 4 years.

Accumulation of human capital can be achieved through attending training sessions or schools and accessing preventive medical services and so forth but sometimes adverse 'Structures and Processes' can prevent people from doing so. For instance formal policies or social norms can prevent girls from attending school. There is a close relationship between the way that knowledge is generated and transmitted and social capital. High levels of social capital can therefore add to human capital. Minimum levels of other types of capital in addition to broadly transforming structures and processes may be necessary to give people the incentive to invest in their own human capital.

According to the World Development Report (2008), while land and water are critical assets in rural areas, education is often the most valuable asset for rural people to pursue opportunities in the new agriculture, obtain skilled jobs, start businesses in the rural non-farm economy, and migrate successfully. Yet education levels and quality in rural areas tend to be dismally low worldwide: an average of four years for rural adult males and less than three years for rural adult females in Sub-Saharan Africa, South Asia, and the Middle East and North Africa. Education in this case is broadly conceived to include vocational training that can provide technical and business skills that are required in the new agriculture and non-farm rural economy. Improving basic rural education has been slower than in urban areas. Access to quality health services is also much lower in rural areas.

Household Size and Human Capital:

From a livelihoods perspective, large household sizes have both positive and negative features. On the positive side, large households mean a greater household labour pool, increasing the scope for diversifying livelihood activities (Ellis, 1998). In the context of a depressed labour market, a greater number of adults per household increases the chance of one or more adults finding employment, and becoming the 'breadwinner' for the household. On the negative side, large household sizes mean a greater number of dependents, with limited income having to be shared by a greater number of unemployed adults and children.

2.4.3.3 Physical Capital and Livelihoods

According to DFID (1999) physical capital comprises the basic infrastructure and producer goods needed to support livelihoods. Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive and producer goods are the tools and equipment that people use to function more productively. The following components of infrastructure are usually essential for sustainable livelihoods: affordable transport; secure shelter and buildings; adequate clean water supply and sanitation; affordable energy; and access to information (communications). Infrastructure is commonly a public good that is used without direct payment exception in the cases of shelter, which is often privately owned, and some other infrastructure that is accessed for a fee related to usage (for example toll roads and bridges and energy supplies). Producer goods may be owned on an individual or group basis or accessed through rental or 'fee for service' markets, the latter being common with more sophisticated equipment.

The livelihoods approach focuses on helping to provide access to appropriate infrastructure that enables poor people to achieve their livelihood objectives. Participatory approaches are essential to establish users' priorities and needs. Users of physical capital may place a greater importance on some services than others and these priorities must be taken account of. For example women in some communities may prefer to use a surface water point a long way away than to pump a well near at hand.

Various participatory poverty assessments have found that a lack of infrastructure is often considered by people to be a core dimension of poverty (World Bank, 1995; May, 1998; Nayaran, 2000). For example, without access to services such as water and energy, human health deteriorates which undermines human capital and longer periods are spent in non-productive activities, such as the collection of water and fuel wood. The opportunity costs associated with poor infrastructure can preclude education, access to health services and income generation. For example, without transport infrastructure, essential fertilisers cannot be distributed effectively, agricultural yields remain low and it is then difficult and expensive to transport limited produce to the market. The increased cost (in terms of all types of capital) of production and transport means that producers operate at a comparative disadvantage in the market. Insufficient or inappropriate producer goods also constrain people's

productive capacity and therefore the human capital at their disposal. More time and effort are spent on meeting basic needs, production and gaining access to the market.

Physical capital particularly infrastructure is usually expensive. It requires not only the initial capital investment but an ongoing commitment of financial and human resources to meet the operation and maintenance costs of the service. The emphasis therefore should be on providing a level of service that not only meets the immediate requirements of users but is affordable in the long term. It can also be important to provide simultaneous support to skill and capacity development to ensure effective management by local communities. Infrastructure is only an asset in as far as it facilitates improved service provision to enable the poor to meet their needs. For example, a participatory assessment may reveal that a key constraint to the livelihoods of a particular group is the difficulty of carrying produce to market, especially during the rainy season. A livelihoods `response' to this problem will include not only improvements to the physical infrastructure to improve water crossings, or drain a track or feeder road during the rains, but would also consider encouraging an affordable transport service using appropriate vehicles, for example ox/donkey carts. Availability of physical capital is not always the same as access. Sometimes costly infrastructure exists in an area, but this does not mean that the poor have access to it. This might be because the user-fees are too expensive for them or because richer groups use their strength and influence to control or monopolise access.

A MSc. Thesis by Timmermans H.Gerald (2004) in South Africa revealed the following in the study area. Apart from hoes, which were owned by 36 of the 39 households (81.0%), rates of ownership of agricultural and transport assets were relatively low (less than 50% ownership frequencies in all categories). Very few households owned a bicycle or a car, and none owned a tractor. Under a third of households surveyed owned a plough or a sledge (30.4% and 27.8% respectively).

In Mali, a study carried out in the Lake Selingue area revealed that approximately 65% of the households interviewed are living in distressful housing conditions, a figure based on mainly the number of occupants per room and the materials used in the construction (Pittaluga, 2003b).

2.4.3.4 Financial Capital and Livelihoods

Financial capital denotes the financial resources that people use to achieve their livelihood objectives. The definition used here is not economically robust in that it includes flows as well as stocks and it can contribute to consumption as well as production. However, it has been adopted to try to capture an important livelihood building block, namely the availability of cash or equivalent that enables people to adopt different livelihood strategies.

There are two main sources of financial capital; available stocks and regular inflows of money. Available stocks in the form of savings are the preferred type of financial capital because they do not have liabilities attached and usually do not entail reliance on others. They can be held in several forms: cash, bank deposits or liquid assets such as livestock and jewellery. Financial resources can also be obtained through credit-providing institutions. Regular inflows of money may include earned income and other common types of inflows such as pensions, or other transfers from the state (for example LEAP in Ghana), and remittances. In order to make a positive contribution to financial capital towards sustainable livelihoods these inflows must be reliable (while complete reliability can never be guaranteed there is a difference between a one-off payment and a regular transfer on the basis of which people can plan investments).

In a study in SA it was revealed that saving of income represented an important way of deferring income until a later date, with informal rotating credit associations being an important local method of saving (27.0% of the households surveyed used them). Buijs and Atherford (1995) found that rotating credit associations represented an adaptation of poor households to the inaccessibility of formal savings institutions. The annual payout from these schemes was an important way of raising capital for cash strapped households, enabling them to meet extraordinary costs such as extensions to homesteads, travel to distant urban centres, or payment of education costs.

On a livelihoods systems profiling study of fishing communities on Lake Selingue in Mali, Pittaluga (2003b) found that the sample population fell into two polarised categories with respect to access to credit. While over 60% of families do manage to obtain credit and have savings, over 30% do not have any at all. This situation is exacerbated by the fact that credit among artisanal fishers is rarely obtained as cash to

invest but as productive assets from intermediaries who thus can lay claims to a more secure supply of fish and exert more power in the determination of fish prices. Paradoxically access to credit could have rather revealed a constant state of indebtedness to creditors.

2.4.3.5 Social Capital and Livelihoods

The SLA identifies social capital as one of the key resources on which people draw in constructing their livelihood portfolios. It is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives. Social capital, like other types of capital, can be valued as a good in itself. It can make a particularly important contribution to people's sense of well-being (through identity, honour and belonging).

A distinction is made between two forms of social capital. The first which Uphoff (1996) calls structural social capital refers to relatively objective and externally observable social structures such as networks, associations and institutions, and the rules and procedures they embody. Water user committees and neighbourhood associations are examples of structural social capital. The second form known as cognitive social capital comprises more subjective and intangible elements such as generally accepted attitudes and norms of behaviour, shared values, reciprocity and trust.

Levels of Social Capital

The concept as applied to patterns of social relationships are at three levels: horizontal links (or norms of reciprocity) between household group or community members, vertical links between more and less powerful people or groups and diffuse links between people and groups and society. The concept of social capital as embodied in the horizontal social networks and solidarity relationships is the most commonly applied in SL analysis. This focuses on poor people's ability to make claims on other equally (or slightly less) poor people, rather than their ability to lay claim to support from centres of authority in general and government in particular.

Putnam (1993a) however looks at social capital in a broader perspective. He argues it is a recent term used to identify the self-willed webs which connect individuals, groups, societies and other forms of human associations. It is created from the

networks of relationships and affinities people rely and call upon in times of joy or sorrow, surplus or need. It is the sum of trusted reciprocal relationships between citizens and their associations at all levels of politics and economy. Evidence suggests that richer and thicker civil relationships generate greater social capital, enhancing society's ability to democratically regulate its affairs and increase prosperity, partly because acceptable ways of negotiating differences emerge and form a part of cultural heritage.

Building Social Capital

Social capital is built when people solve shared problems and satisfy economic, spiritual, recreational and other needs which change over time. It is eroded when social trust and a sense of fairness is undermined. For those that can afford it loss of trust is made good by insurance, legal contracts and sheltering in enclaves protected by armed guards. For those that cannot afford it life becomes more insecure weakening a commitment to legal non-violent norms of behaviour (Fowler, 1997).

Observed Social Capital in some Communities

Grootaert and Bastelaer (2002:1 cited in Mikkelsen ,2005) give the following as examples of social capital; particular villages on the Indonesian island of Java build and maintain complex water delivery systems that require collaboration and coordination- while other villages rely on simple individual wells, residents in apparently similar Tanzanian villages enjoy very different levels of income due to differences in their abilities to engage in collective action, households in Russia rely on informal networks to gain access to health services, housing, education and income security, some neighbourhoods of Dhaka organize for local thrash collection, while others allow garbage to accumulate on the streets, Hutu militias relied on fast networks of information and high levels of mutual trust to carry out a terrifyingly efficient genocide in Rwanda.

As in many African societies, social capital between, and within, households in a study area in South Africa took the form of rights and obligations that were embedded within kinship relations and social networks (Hammond-Tooke, 1974). While ties between immediate family members, that is parents and children were probably stronger than those between extended family members; that is cousins, members of

the same clan, and so forth, extended kinship ties were extremely important in that they facilitated inter household assistance in the form of labour or food sharing. It was this sense of kinship morality that less well-off people appealed to in times of need. Kinship networks were also important with respect to receipt of remittances from urban-based family members. Rural-urban kinship and social networks were also found to be important for support structures for work-seekers migrating to the cities.

2.4.4 Transforming Structures and Processes

Transforming Structures and Processes within the livelihoods framework are the institutions, organisations, policies and legislation that shape livelihoods. Their importance cannot be overemphasised. They operate at all levels, from the household to the international arena, and in all spheres, from the most private to the most public. They effectively determine: access (to various types of capital, to livelihood strategies and to decision-making bodies and sources of influence); the terms of exchange between different types of capital; and returns (economic and otherwise) to any given livelihood strategy. In addition, they have a direct impact upon whether people are able to achieve a feeling of inclusion and well-being. Because culture is included in this area they also account for other 'unexplained' differences in the 'way things are done' in different societies. (DFID, 1999)

2.4.4.1 Structures

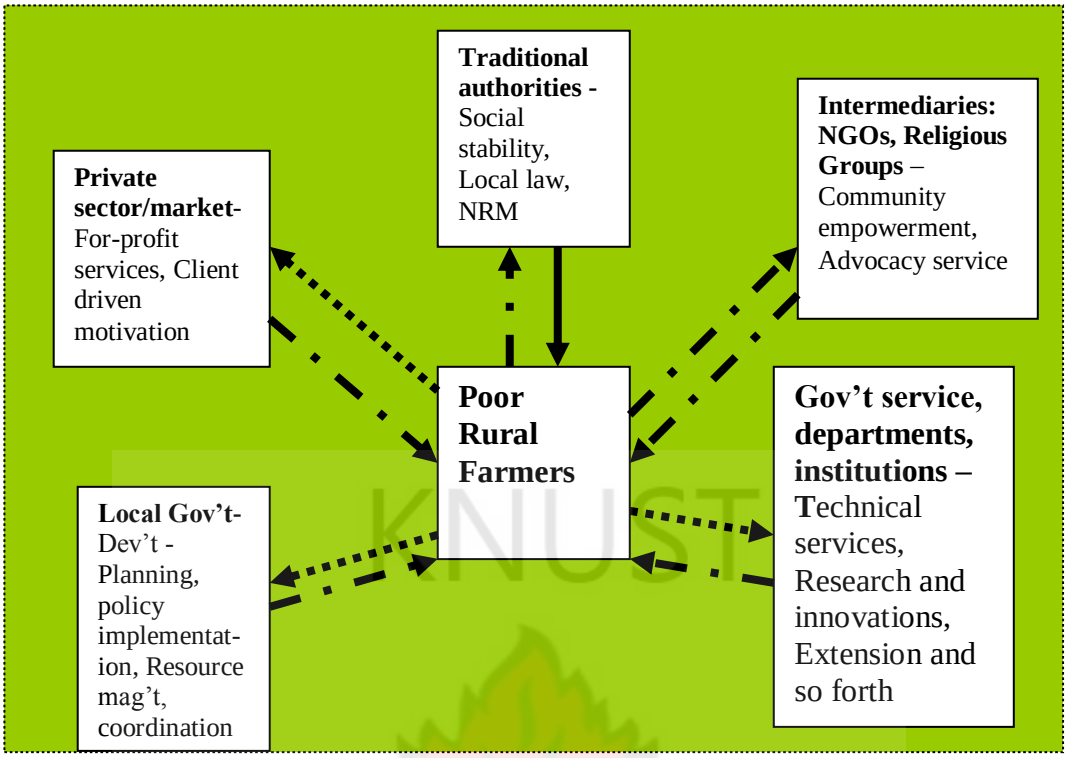
According to the DFID sustainable livelihoods framework, structures are the hardware; that is the organisations (both public and private) that set up and implement policy and legislation, deliver services, purchase, trade and perform all manner of functions that affect livelihoods. They draw their legitimacy from the basic governance framework. Structures exist at various levels. This is most obvious in the case of governmental organisations. These include political (legislative) bodies, executive (MDAs) bodies, judicial (courts) and parastatal/quasi-governmental agencies. They operate in cascading levels with varying degrees of autonomy and scope of authority, depending upon the extent and nature of decentralisation. Private commercial organisations, CSOs, and NGOs also operate at different levels from the multi-national to the very local; it is not only the local level that is relevant to livelihoods.

The roles and responsibilities of the different levels of structures should therefore be identified to see those that are of greatest importance to livelihoods. Structures are important because they make processes function. Without legislative bodies there is no legislation. Without courts to enforce it, legislation is meaningless. Without traders, markets would be limited to direct trades between buyers and sellers. An absence of appropriate structures can be a major constraint to development. This is a particular problem in remote rural areas. Many important organisations – both private and public sector – do not reach these areas. As a result, services go undelivered, markets do not function and people's overall vulnerability and poverty increase. Moreover, when people do not have access to organisations of the state they often have little knowledge of their rights and only a very limited understanding of the way in which government functions. This disenfranchises them and makes it hard for them to exert pressure for change in the processes (policies, legislation, and so forth) that affect their livelihoods.

2.4.4.2 Processes

If structures can be thought of as hardware, processes can be thought of as software. They determine the way in which structures – and individuals – operate and interact. And like software, they are both crucial and complex: not only are there many types of processes operating at a variety of different levels, but there are also overlaps and conflicts between them. Some of the transforming processes of importance to livelihoods are; policies (macro, sectoral, regulatory, redistributive), legislation (international, domestic), institutions (that regulate access to assets, markets, 'rules of game' within structures), culture (societal norms and beliefs) and power relations (age, gender, class, and caste).

The roles in development and extension for poor rural farmers for example range from traditional institutions to public service organizations and private service providers. The type and quality of service differs from provider to provider. In the institutional framework for the poor rural family shown as Fig. 2.3 below, the situation depicts a graphical summary of the context and challenges for pro-poor extension in Northern Ghana (CARE International, Ghana, 2003).



Source: Modified from CARE International, Ghana 2003

Linkages

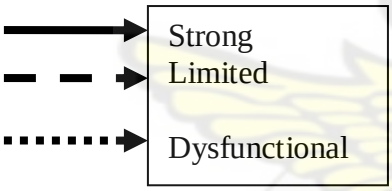


Figure 2.3: Quality of Service Provided to Rural Farmers (Modified from CARE International-Ghana, 2003)

Processes are important to every aspect of livelihoods. Some examples are;

• They provide the incentives – from markets through cultural constraints to coercion – that stimulate people to make particular choices about which livelihood strategy to pursue, where to pursue it, how much to invest in different types of livelihood assets, how to manage a resource and so forth.

• They grant or deny access to assets.

• They enable people to transform one type of asset into another (through markets).

• They have a strong influence on inter-personal relations – how different groups treat each other.

One of the main problems faced by the poor is that the processes that frame their livelihoods systematically restrict them and their opportunities for advancement. This is a characteristic of social exclusion and it is one reason why it is so important that governments adopt pro-poor policies. If higher-level policy is genuinely pro-poor and

designed to protect the rights of excluded minorities, this may in time filter down and influence not only legislation but also less formal processes.

Process and Structure Interrelations:

Policy at whatever level operates in indirect ways. Its influence on livelihoods is always mediated by institutions and organizations (Shankland 2000). Thompson (2000:9) points out that policies, whether macroeconomic or more sectoral and structural in nature are channelled through meso-structures, and goes on to distinguish between country-wide and geographically specific meso-structures. As Thompson herself noted, however, even country-wide meso-structures such as markets are likely to vary according to local conditions. Completing the link between policy and livelihood requires us to acknowledge that mediating structures are not homogeneous, and that it is the extent and nature of the presence of such structures in different local settings which will actually determine how (and indeed whether) they channel different elements to people in those settings.

The IDS SL Programme, following North's (1990) distinction between institutions as rules of the game and organizations as players allows institutions to be defined as established sets of rules, norms and patterns of behaviour (Scoones, 1998:12). Institutions, of course, do not and can not exist independently of people and the relations between them, which, given differences in interests and in the power of different groups to pursue those interest, tend to be characterized by contestations as much as by consensus. The IDS approach acknowledges this by drawing on the 'structuration theory' of Giddens (1979) to emphasise that institutions are also dynamic, continually being shaped and reshaped over time…[and] part of a process of social negotiation, rather than 'fixed objects' (Scoones, 1998:12). Since people and organizations (as players) are continually contesting and adapting the rules of the game, it is logical to expect policy to suffer a number of influences as it makes its way through what Cousins (1997) has called the 'messy matrix' of institutions and organizations.

Thompson's metaphor can be extended to suggest that meso structures channel policy much as irrigation systems channel water: the system's controllers may release a defined amount of water from the dam and rely on engineering and gravity to get it to

its assigned destination, but the quantity and quality of water which actually reaches the individual farmer will be influenced not only by external factors such as evaporation and rainfall, but also by the actions of others who may divert or pollute the water along the way. It therefore makes sense to think of institutions and organizations as mediating policy rather than simply transmitting it, and to acknowledge that the outcome of this process of mediation is likely to vary considerably for different places and groups as it affects their livelihoods.

Mediating institutions are important in the Sub-Saharan African context because media may be virtually non-existent, with television inaccessible, newspaper readership negligible and even access to information from the radio limited to a minority of people (usually wealthier men) who can speak the national language. Market failure may be the norm rather than the exception, as a small number of traders fix prices at artificially low levels or impassable roads prevent producers from taking their crops to town for sale. The formal legal system may be rendered inaccessible by corruption, distance or cultural barriers, and its place taken by customary systems whose principles on everything from property rights to the status of women may be very different from those enshrined in the national constitution. Even where country-wide institutions are dominant it is often unwise to assume that policy changes will be transmitted easily or without distortion. Mosely (1999) has documented how in Malawi (a country with relatively high levels of market integration) the segmented nature of the financial market meant that the impact of macro economic policies designed to increase credit availability was severely distorted. Tucker (1998) has also reported that in Ethiopia (a country with a traditionally strong state presence) many of the judges responsible for upholding the new constitution still had not received a copy of the text four years after it was promulgated.

Studies suggest that people behave the way they need to in organizations either; because they have to, that is, they are coerced; because they have incentives to do so, they are induced; or they are driven to do so by their own internal beliefs, and values (Itzioni, 1971). Even though governments and businesses rely on other methods to ensure compliance, voluntary organizations rely mostly on personal values, commitment and self-motivation.

According to Narayan et al (1999) rural people believe in their own institutions. With some few exceptions, poor people's own informal organisations score high on participation and decision making while government institutions- particularly health centres, hospitals, police and government ministries rank low. Municipalities, local government, schools and courts occasionally receive high rankings; politicians with a few exceptions in Ghana receive low rankings. Private enterprises also score low in participation.

Effect of Policy on Livelihoods:

In many Sub Saharan African countries in which Structural Adjustment Programmes (SAP) were implemented in the 1980s for example Nigeria, Tanzania, Malawi and Zimbabwe levels of peasant commodity production were adversely affected by agricultural subsidy cutbacks. Structural Adjustment Programme (SAP) policies largely dismantled African marketing boards and parastatals that had serviced peasants' input requirements, enforced commodity standards, and provided single-channel marketing facilities and controlled prices. The private traders, who replaced them after the introduction SAP, varied in their performance through time and space, but mounting evidence points to the fact that they have not lived up to the hopes vested in them by the IFIs. Farmers were faced with a more uncertain market environment, producer prices were subject to wide fluctuations, input prices skyrocketed and supply became tenuous as most traders did not have the rural outreach of the parastatals they replaced (Jambiya 1998, Mung'ong'o 1998, Meagher 1999).

There is evidence from Northern Ghana where women abstain from cultivating improved varieties of cowpea because of their demanding nature and one woman explained "why we like our local one is that it doesn't need any chemical spraying. If you sow it anyhow, you will harvest nicely, but with the improved varieties without chemical you are at a loss" (Padmanabhan, 2004). Mung'ong'o (1998) cites a decline of 71 per cent in annual mean household income from agriculture between 1979 and 1992. Not surprisingly, he also notes land being taken out of cultivation and problems of soil deterioration.

2.4.5 Livelihood Strategies

Livelihood strategy is the overarching term used to denote the range and combination of activities and choices people make/undertake in order to achieve their livelihood goals (Department for International Development, 1997). The kinds of strategies which may, or may not, be available to a household is thought to be mediated by the nature of its asset holdings, in relation to broader political and economic contexts influencing livelihoods (May, 1996). Livelihood strategies normally encompass a mix of natural resource and non-natural resource based activities (Ellis, 2000b), which are alternatively referred to as 'farm' and 'non-farm' activities. A characteristic of livelihood strategies is that they are often dynamic, responding to fluctuations in asset holdings, and pressures and opportunities in the broader economy (*ibid.*).

According to DFID (1999), studies have drawn attention to the enormous diversity of livelihood strategies at every level – within geographic areas, across sectors, within households and over time. This is not a question of people moving from one form of employment or 'own-account' activity (farming, fishing) to another. Rather, it is a dynamic process in which they combine activities to meet their various needs at different times.

Looking at livelihoods provides a rich and detailed picture of how poor families reduce (ex ante) and cope with (ex post) a variety of risks in meeting their basic needs. Ellis (1997) asserts that 'the prime motive and consequence of successful diversification is to reduce vulnerability', but insists on distinguishing rational risk-management from default coping strategies. 'Risk management' is perceived to be voluntary decision-making that avoids production failure by varying income sources and spreading them over time to reduce 'co-variate risk' and to ensure 'consumption smoothing', that is the continuous realisation of the household's basic purchased needs year round. 'Coping strategies', on the other hand, are defined as an 'involuntary response to disaster or unanticipated failure in major sources of survival' (Ellis 1997:15-18). Whereas 'coping' is associated with 'trying to preserve existing livelihoods in the face of disaster', 'adaptation' refers to the more rational response of 'making permanent changes to the livelihood mix in the face of changing circumstances' (Ellis 1997:18). He however recognises that the two concepts are difficult to disentangle in the field.

Households can have several possible sources of income and other resources that constitute their livelihood. A range of on-farm and off-farm activities, which together provide a variety of exchange entitlements for food and cash, maintain livelihood systems. A household's total resources are based not only on its productive activities and endowments, but also on its legal, political and social position in society (Sen, 1981; Swift, 1989; Drinkwater and McEwan, 1992 quoted by WFP, 1998).

Livelihood systems incorporate the present situation, and the short-term and long-term perspective. The objective is not only to preserve current patterns of consumption, but also to avoid destitution or sacrificing future standards of living through better risk management and adaptive strategies. The risk of livelihood failure determines the vulnerability of a household to income, food, health and nutritional insecurity. Perceptions of rural poor farmers for example are related to their objectives and their strategies related to their livelihoods, and their actions are also guided by perceptions and as a result there are diverse livelihoods. (Belaineh Legesse, SIDA 2006)

2.4.5.1 Diversity of Strategies

Rural poor households employ very diverse livelihood strategies rather than specialise. In a study in Mali, Pittaluga (2003b) revealed that households engage in diverse activities but any one household was involved in only two or three. Vulnerable (to risks and crises) households did only a single activity. Reardon (1997) and Ellis (1998, 2000) identify six main ways in which the poor earn their livelihoods. These are as follows:

i. **Small-scale agriculture**: Unable to afford irrigation in many cases, the poor are generally small and marginal farmers, who cultivate rain-fed crops in poor soils. Both yields and nutritional value are low, but the output supplements their diet and is often slightly cheaper than buying the same food on the open market.

ii. **Local labour markets**: Both the landless poor as well as small and marginal farmers take recourse to local labour opportunities, whether on farms or on government-sponsored employment generation programmes, to supplement incomes. For many, however, agricultural or non-agricultural labour provides the bulk of their livelihoods.

iii. **Long-distance labour migration**: In the off-season, when there is no cultivation in the village, and hence few labour opportunities, low-income households migrate to other rural areas or towns, in search of work. Most such migrations are forced, while some are out of choice (Mosse, 1998; Breman 1996; DFID, 1998).

iv. **Forest product collection**: Wherever available, more of the rural poor rely on forest products for fuel, fibre, food and a wide range of tradeable products. Apart from fodder for livestock, forests also provide the poor with minor forest products like gum, leaves and bark, which are collected and sold locally at low prices because little value is added to these primary products

v. **Livestock production**: Most of the poor in semi-arid areas rear goats as insurance against adversity. These goats graze on common lands, and are reared for both milk and meat. Typically, goats are sold to meet emergency cash requirements and often sustain low income families through stretches of unemployment or bad harvests. Few low-income households also own cattle, but these are mainly for milk to meet household needs rather than for market sale.

vi. **Self employment in micro-enterprise**: A lot of this has been in traditional low-skill activities that simply add value to primary products. Basket weaving, pot-making, and brick-making are typical examples. These are not the usual rural enterprises, like tailoring, blacksmithing, shoe-making and weaving, which are usually caste-determined occupations and constrained by demand in the village.

In terms of strategies aimed at secure and decent livelihoods Chambers (1983:142), also categorizes the rural poor into 'foxes' and 'hedgehogs'. A proverb of the Greek, Archilochus, says "The fox knows many things, but the hedgehog knows one big thing" (Berlin, 1953 cited in Chambers 1983). The foxes according to Chambers (1983) are those who contrive a living from a repertoire of different petty enterprises and activities, which may include small scale farming. For many, seasonal migration to fill agricultural slack periods is a regular, if often desperate, measure taken by some or the entire household. Wherever they are, their enterprises and activities have low productivity and bring low returns. In contrast the hedgehogs are those who have only one enterprise or activity. They include some subsistence farmers and some single species pastoralists; out workers for a single urban-based business, like full time weavers in rural India; and most clearly those tied by obligations to working for one

person or family, like those of the San in Botswana who have become dependent, or labourers in South Asia who are bonded through debt to work for one master.

Diversifying livelihood strategies, thus, reduces the risk of livelihood failure (Gill, 1991), and of seasonality in labour demand and consumption, offsets the impacts of natural risk factors on staple food availability, adds activities with higher returns to the household livelihood portfolio, provides cash resources that enable household assets to be built up, and helps people hold on to assets they already possess (Netting, 1993).

Alex de Waal (1989 pers. comm.) found a woman in Darfur in Sudan, on leaving her village in a famine, preserving millet seed for planting on her hoped-for return by mixing it with sand to prevent her hungry children eating it. Based on extended fieldwork during famine, Alex de Waal concluded that "...avoiding hunger is not a policy priority for rural people faced with famine", and "...people are quite prepared to put up with considerable degrees of hunger, in order to preserve seed for planting, cultivate their own fields or avoid having to sell an animal." It is now a widespread finding that, as soon as food shortage threatens, poor people eat less and worse in order to protect their livelihood assets in the bad times to come.

2.4.5.2 Rural Incomes

Rural communities are generally believed to be agricultural but studies of rural income portfolios generally converge on the surprising figure that, on average, roughly 50 per cent of rural household incomes in low income countries are generated from engagement in non-farm activities and from transfers from urban areas or abroad (remittances and pension payments being the chief categories of such transfers). This has been verified by recent studies in Africa (Bryceson & Jamal, 1997; Ellis & Freeman, 2004), as well as past evidence from Africa and Asia (Reardon, 1997). In Latin America, the average figure is slightly lower, at around 40 per cent (Reardon et al., 2001). It has also been widely found that while diversity of income sources is prevalent across different income classes, the nature of this diversification differs greatly between better off and poorer households. The better off tend to diversify in the form of non-farm business activities (trade, transport, shop keeping, brick making etc.) while the poor tend to diversify in the form of casual wage work, especially on

other farms. Diversification by the poor tends to leave them still highly reliant on agriculture; while that by the better off reduces such dependence.

In a case study of 344 rural household in Tanzania, it was observed that the average farm/non farm split for the entire sample is almost spot on the 50:50 division as in the widespread finding in Africa and elsewhere (Ellis and Mdoe, 2003). The relative dependence on agriculture declines across the income ranges from 68 per cent for the poorest quartile and 43 % for the richest. It was also notable that the share of livestock in the income portfolio of the top quartile more than doubles compared to the bottom quartile and the share of non-farm business income quadruples from 11 to 44 percent of the income portfolio (Ibid).

It might be thought that the attention paid by better off households to non-farm activities would result in the neglect and poor performance of their farming activities. Not so at all. In a cross-country sample of 1,355 households conducted in 2001 and 2002 (of which the Tanzania example given above was a part) how agricultural productivity per hectare rises steeply across the income ranges was shown. Net farm output per hectare in a series of country samples was between three and six times higher for the top income quartile of households compared to the lowest income quartile. Non-farm income generates cash that can be used to improve farm yields by hiring labour and purchasing farm inputs (Evans & Ngau, 1991). It may also reduce risk aversion and encourage innovation such as trials of new crop varieties due to the cushion that it provides against the potential failure of new methods. More broadly, a strong flow of non-farm income sources have been observed to bring environmental benefits- reversing environmental degradation and resulting in investment in improved soil and water management as well as rising yields.

2.4.6 Livelihood Outcomes

Livelihood outcomes are defined as the achievements or outputs from livelihood strategies (Department for International Development, 1997). These may take the form of increased income, increased well-being, reduced vulnerability, improved food security, and/or more sustainable use of the natural resource base. These categories of livelihood outcomes as mentioned in the generic sustainable livelihoods framework are just for manageability purposes. Each one may or may not be relevant in any

given situation- this can only be established through participatory inquiry. Outsiders are therefore advised to investigate, observe and listen rather than jump to conclusions or make hasty judgements about the nature of the outcomes people pursue. The best approach in each situation may be an unconstrained dialogue with the poor, and an effort to learn from them what their priorities are. What they say will vary- between individuals, between men and women, households, occupations, communities, societies, ecological zones and countries. These priorities may be land, animals, irrigation, tools, seeds, markets, good prices, water for drinking and washing, roads, a school, a temple or shrine, a cinema, roads, defence against raids or vermin, firewood, veterinary services, basic goods at fair prices, employment, minimum wages, credit, protection against landlords and against extortionate interest rates, or many other things. This is an outsiders list. The priorities of the poor will often surprise outsiders, and those of the poorer will often differ from those of the less poor in any given community.

For survival, food and health come first (Chambers 1983). According to DFID (1999) there is a close relationship between Livelihood Outcomes and Livelihood Assets, the two being linked through Livelihood Strategies. For example, a person may choose to reinvest most or all of any increased income in assets, with a view to catalysing a virtuous circle of asset accumulation and increased income.

2.4.6.1 Trade-offs between Livelihood Outcomes

One of the main difficulties with the 'outcomes' part of the SL framework (fig 2.1) is that livelihood outcomes are not necessarily coherent and are certainly incommensurable. It is for instance hard to weigh up the relative value of increased well-being as opposed to increased income, but this is the type of decisions that people must make every day when deciding which strategies to adopt to achieve outcomes. There may also be conflict between livelihood outcomes. An obvious example is when increased income for particular groups is achieved through practices that are detrimental to the natural resource base. Or perhaps different family members prioritise different livelihood objectives – some seeking to reduce vulnerability, while others seek to maximise income streams. The framework does not offer any answers to these dilemmas but does provide a structure for thinking them through, considering

how they affect other aspects of livelihoods (for example strategies adopted) and perhaps coming to a mutually acceptable 'solution'.

2.5 Conclusion

This chapter dwelt on the conceptual and theoretical framework within which livelihoods can be analysed. Having looked at literature on rural livelihoods, it was discovered the sustainable livelihood approach is the current most popular approach for the analysis of rural livelihoods. The various components (vulnerability contexts, livelihood assets, transforming structures and processes, and livelihood strategies and outcomes) of the framework have been discussed in detail.

CHAPTER THREE

3.0 MATERIALS AND RESEARCH METHODOLOGY

3.1 Introduction

An extremely important feature of research is the use of scientific methods. The validity of the answers one finds to the research questions will rest on how the answers were found. This chapter seeks to systematically outline the methods and materials that were employed in the study.

3.2 Research Approach

Given the all-encompassing nature of the sustainable livelihoods framework, the study required a 'hybrid' methodological approach that combined conventional survey tools with appropriate qualitative methodologies. Thus, the research incorporated a mix of socio-economic household surveys and focus group discussions. In addition, a number of secondary research sources were drawn upon. The survey was responded to by household heads, where they were available, and where not, by a household member familiar with the income and expenditure patterns of the household. It was designed to capture data at the household level, in turn making the household the logical primary unit of measurement and analysis including resident migrant members, because of the high level of economic cooperation that takes place between local and non-local household members. With respect to site, the data was analysed separately for each sample rural community, allowing for the identification of inter-community differences and similarities. The study was carried out in four selected communities in Northern Region aimed at capturing the micro manifestations of rural people's livelihoods. By the objectives of the study, it can be described as a descriptive research as it seeks to describe livelihood systems.

3.3 Research design

The Cross-sectional research design was used, since rural livelihood systems are not amenable to experimentation (that is grouping the rural people into control and experiment groups). The cross sectional design which involves observation of all of a population or a representative subset at a defined time is perhaps the predominant design employed in the social sciences. The design is often identified with survey research, a method of data collection common in many social science fields. In survey

research, researchers usually ask a random sample of individuals to respond to a set of questions about their backgrounds, past experiences, attitudes, conditions and so forth. In some cases survey research yields data that researchers use to examine relationships between properties and dispositions. In other cases the researcher is only trying to describe the pattern of relations before any attempt at causal inference is made and this is what the researcher is seeking to do about rural livelihood systems. The property of being rural predisposes the rural people to certain livelihood systems which the researcher investigated using questionnaires.

3.4 Sources of Data

Data for the research were derived from both primary and secondary sources. Secondary data were collected from both published and unpublished sources on rural livelihoods, Northern Region and study districts. Relevant secondary data were collected from documents, articles, books, internet and so forth. The primary data was mainly from households. Thus, primary data was collected from the communities particularly from heads of households through a questionnaire. Information sought was mainly on livelihood sources, vulnerability, assets, local institutions and organisations, strategies and outcomes desired by rural people.

3.5 Units of Analysis

The study was designed to capture data at the household level, and therefore the household was the unit of analysis. Ardington and Lund (1996) have argued that, despite critical literature on the household as the unit of measurement (Murray, 1981; Guyer and Peters, 1987), the *de jure* household, that is including resident migrant members, is the most appropriate unit of measurement in rural livelihood studies. This is because of the high level of economic cooperation that takes place between local and non-local household members.

A random sample of respondents (household heads) responded to a set of questions about their livelihoods; composition of household, assets, food security situation, skills and capabilities, income opportunities and access and use of natural resources and so forth. According to Gueye and Toulmin (2003) the farm family, its land and associated assets are under the authority of the household head who is responsible for the collective management of these assets, the allocation of labour between different

activities, management of grain stores and deciding on new strategies and directions to be pursued. A certain number of households were therefore randomly selected from each of these four communities and their heads interviewed with a structured questionnaire. The FAO definition of household was used to identify households and during data collection migrant members were taken into consideration.

Even though experience in the field has demonstrated that intra-household dynamics (along gender and age lines) are important determinants of differential levels of poverty for individuals living under the same roof, households were the unit of analysis in the study without digging deep into the intra-household power structures for fear of going outside or beyond the scope of the study.

3.6 Sampling Techniques

Sampling is the process of selecting units (that is, communities, people and organizations and so forth) from a population of interest so that by studying the sample it may be possible to fairly generalize the results back to the population from which they were chosen (Trochim, 2006). Sampling is necessary because dealing with a whole population in a research process such as this is impossible in terms of time and resources. The primary goal is to get a representative sample or a small collection of units or cases from the much larger collection or population, such that the researcher can study the smaller group and produce accurate generalizations about the larger group.

Selection of communities was randomly done using the multi-stage cluster sampling technique based on different parameters of 'rurality'. Due to budgetary and time constraints and also due to the geographical vastness of rural communities in the region, the sample frame had to be clustered. Tamale, the capital of the region according to Abdulai (1996) is the hub of intense settlement in Northern Ghana because it offers opportunities for the buying of seeds and farm chemicals on the one side and the sale of agricultural produce on the other. This reflects the pattern of settlement in Northern Ghana according to him. It is also well connected by roads to other urban centres in the country. A study conducted by Braimoh and Vlek (2006) also revealed that the most intensely cultivated lands are closest to the roads and main market. The most intensely cultivated lands are those with the highest population

pressures and the highest population densities are found around Tamale, the main market. According to Chambers (1983:13) services along roadsides are better. An improved tarmac or all-weather surface can bring buses, electricity, telephone, piped water supply, and better access to markets, health facilities and schools. According to him services near main roads are better equipped and said according to Edward Henevald (cited by Chambers 1983) two schools near a main highway in Sumatra had more than their quota of teachers, while a school one kilometre off the road had less than its quota. The clusters of rural communities for sampling for the study were therefore constructed based on these characteristics as follows;

- Remoteness from the regional capital (Tamale)
- Nearness to the regional capital
- Rural communities situated on the trunk roads; Tamale-Bolga, Tamale-Yendi and Tamale-Kintampo trunk roads.
- Closeness to regional capital but off road.

Physical capital of rural communities has also been found to decrease with increasing levels of distance from urban centres (Nayaran, 2000). Without access to urban markets, the scope for selling agricultural and other locally produced products, and for gaining access to employment, is heavily restricted (Ellis, 2000b; ARDRI, 2001; Shackleton *et al.*, 2001). Remoteness is also a factor with respect to the introduction of new ideas and technologies- new concepts being less likely to filter through to remote areas.

All the districts that share boundaries with Tamale Metropolis were classified as 'near' and the rest of the districts in the region classified as 'remote'. Based on the first parameter above, Gushegu District was randomly selected and Batei was selected from a group of remotest communities in the district. On closeness to the metropolis, Tolon/Kumbungu district and Nbanaayili selected from a cluster of nearest communities in the district to the metropolis. From the cluster of communities on the trunk roads the Tamale –Bolga road was randomly selected and Nasia (in West Mamprusi district) was also randomly picked. On the fourth parameter, Central Gonja district was chosen through the random selection process and Kusawgu was chosen from a cluster of rural communities closest to the metropolis, but off trunk road. Coincidentally the four communities chosen represented four of the major ethnic groups in the region. In all the stages of sampling, a sampling frame was made and the

lottery method used to select the sample. At the community level a sampling frame was prepared with the assistance of the assemblyman or opinion leaders. The names of all the households were written on small pieces paper, wrapped up and put in a bag from which the sample was drawn using the lottery method.

3.6.1 Determination of Sample Size

The sample size for household heads to be interviewed in each of the selected communities was determined by means of a statistical formula;

$n = N/1+N (\alpha)^2$

Where n = sample size, N = sample frame (total number of houses or compounds in community) and α= confidence level.

Using this formula with 90 % confidence level, the information below was arrived at;

Table 3.1: Sample Sizes by Community

Community	Sample Frame	Sample size	Responsive cases
Nbanaayili	90	47	44
Kusawgu	142	58	56
Batei	72	41	38
Nasia	84	45	42
Total	388	191	180

Source: Study data -2009

3.7 Data Collection Tools

The use of multiple methods, a feature of the livelihoods approach, was necessary to try and capture the multi-dimensional nature of livelihood systems (Department for International Development (DFID), 1997; Scoones, 1998). Due to the nature of the problem, a blend of quantitative and qualitative data collection techniques was used. Face-to-face interview, focus group discussions and direct observation were used at various stages of the study to gather data/information.

3.7.1 Face-to-face Interviews

Silverman and Atkinson (1997) in Yeboah, (2008), assert that "we now live in an interview society" because of the extensive use of interviewing as a major technique to acquire information. Maccoby and Maccoby (1954) as cited in Yeboah, (2008), define interview as face-to-face verbal exchange of information in which one person, the interviewer, attempts to elicit information or expressions of opinions and/or belief from another person or persons. An interview is a short-term, secondary social interaction between two strangers with the explicit purpose of one person obtaining specific information from the other. Information is obtained in a structured conversation in which the interviewer asks pre-arranged questions and records answers, and the respondent answers (Kreuger and Neuman, 2006). This process was used after the sampled units had been identified.

A fairly comprehensive questionnaire (pre-tested and fine tuned) was designed in order to capture as many aspects as possible of both intra and inter-household dynamics based on the sustainable livelihoods approach which provided the conceptual basis for the selection of the thematic areas to be included in the questionnaire. These areas included the following; household demographics, vulnerability context, household assets, participation/use of institutions and services, availability and access to natural resources, livelihood strategies and coping mechanisms, access to credit and savings, and so forth. No wealth ranking was done to categorise the respondents. The main focus was on the gathering of qualitative data even though quantitative data was collected where necessary.

The researcher explained to the selected respondents the purpose and relevance of the study before administering the questionnaire. This was done after homage was paid to the community head/chief to announce the mission of the research team to him. Discussions were also held with local knowledgeable persons. In other words key informant interviews were used where appropriate; as a way of verifying certain information gathered in the questionnaire and notes taken during interactions with the rural people.

3.7.2 Focus Group Discussions/Interviews (FGD/I)

Focus group discussion is a special kind of interview situation that is largely non quantitative. In focus groups, a researcher gathers together between six to twelve people with a moderator to discuss one or more issues for one to two hours. It is a type of group interview in which an interviewer asks questions to the group, and answers are given in an open discussion among the group members (Kreuger and Neuman, 2006). FGDs were held with different groups in the communities. The interview guide was used in this regard. Questions pertaining to their livelihoods were discussed. Groups of community men and women were met separately. This was to gather unbiased and balance views from both genders of the adult population with regards to the current realities of their livelihoods. Also, the focus group provided the opportunity for the researcher to directly observe the group process and actions. The groups' views are mainstreamed at the analysis stage of this report.

3.7.3 Key Informants Interviews

In addition to the focus group discussion, key informants' interviews were held to further examine certain issues that were not easy subjects for group analysis. The check lists served as the general frame to regulate the discussion. Key informants in this study were individuals who had special knowledge which others do not have. Assembly persons, village chiefs and opinion leaders were identified and interviewed as and when necessary.

3.7.4 Direct Observation

Observation is described as the fundamental base of all research methods in social science. Observation is essential as it enables the researcher to note the body language of the interviewee to obtain a complete picture of the situation, especially in studies that rely mainly on interview as a basic data collection technique (Alder and Alder, 1994) as quoted in Yeboah (2008). The researcher also observed the situation on the ground as he went about the collection of the data. The physical appearance and the lifestyles of the people were observed. Also, a site walk to their near by farms gave the researcher an insight into the level of physical and climatic challenges that confronted them (the rural farmers) as the visit coincided with a drought.

3.7.5 Photography

Photography is a technique of data collection which has successfully been used by researchers in various disciplines including anthropology, cultural geography, and psychology (Markwell, 2000 cited in Yeboah 2008). Using photography to present data or support data analysis is important to this study. Photographs are replicas of real situations presented in an unmediated and unbiased way. According to Clancery (2001 cited in Yeboah 2008), it is the best means of recording, keeping and presenting data. Indeed, using photographs as a means of presenting data is an important way of trying to depict the data in its natural setting (Yeboah, 2008). This technique was adapted for this study because it was able to provide a partial picture of the reality on the ground.

3.8 Key Variables

In attempting to describe livelihoods in the greater Northern Region, the data from the surveys at the selected rural communities were analysed in different ways. First, the data set was combined on the assumption that this would provide a reasonably representative picture of the broader study area. This assumption was based on the observation that the communities appeared to be representative of the rural communities of the Northern region. Thus, it was expected that the combined data would provide a mean measure of conditions prevailing in the general area. The data was then analysed separately for each sample village, allowing for the identification of inter-community differences and similarities.

Even though disaggregating data to capture the potential differences between social groupings is promoted in sustainable livelihoods research, where communities are not assumed to be homogenous and where the researcher needs to display sensitivity to marginalized social groups (Carney, 1998; Kepe, 1998; Ellis, 2000b; McDowell, 2002) this was outside the scope of the study.

3.9 Analytical Tools

The data management and analysis was done using various methods. To be able to see patterns and concepts in the data (what the people say), both quantitative and qualitative tools were employed in the analysis. In analyzing the data, a statistical package (Statistical Package for the Social Sciences) was used. Largely, quantitative

techniques were applied to analyze the primary data collected from the use of the questionnaires. The questionnaire is an efficient way to collect statistically quantifiable information as observed by Twumasi (2001). The procedure used was not designed to make inferences about the larger rural population of Northern Region from which the communities were sampled because livelihood systems are context-specific. But differences in livelihood systems of the communities will be acknowledged where appropriate in the analysis. Using household heads as respondents set out to identify and describe a range of livelihood patterns that are contained within them and the experiences of a substantial proportion of rural households. The data collected was coded and transformed into a computer readable format. This was inputted into the Statistical Package for the Social Sciences (SPSS) for analysis. By using SPSS it was possible to get the statistics in frequencies and percentages. Furthermore, it was possible with SPSS to do cross tabulations of the responses to get further information. Some of the analysed outcome was then transferred to excel where relevant statistical diagrams were generated for the purposes of vivid visual expression of concepts and patterns.

The statistical analysis undertaken on the resulting dataset refers only to sample characteristics and gains its interest from inter-sample community comparisons and not from a claim to represent regional or national patterns. Information gathered through group discussions, observations and in depth-interviews was also scrutinized and described qualitatively. These are presented in the next chapter.

3.10 Problems of Data Collection

The research on rural livelihoods presented difficult choices of emphasis because of the encompassing nature of the livelihoods concept. It meant that almost any aspect of the way people go about gaining a living was potentially legitimate to investigate. In the event it was decided to adopt qualitative and sometimes quantitative methods of household surveys to have a brief look at rural household vulnerability contexts, assets, strategies and outcomes. A brief look at how policies, institutions and processes affect rural livelihoods was also taken from the point of view of the rural dwellers.

The lengthy nature of the questionnaire was also a source of boredom for some of the respondents and the researcher used tact to sustain their interest till the end. Luckily for the researcher the time for the data collection coincided with a period of drought and so farmers did not have much to do on their farms and so they had time for the exercise. Also tact was needed soliciting appropriate answers to questions respondents considered as prying into their privacy.

Constraints of financial resources and time did not allow total random sampling of rural communities from the region to ensure the greatest level of objectivity in a study. But since the survey was not intended to make inferences to the whole of the region because of the context-specific nature of livelihoods, this did not mar the reliability of the data. Also various authors have demonstrated that conclusions from a study of a selected sample of units can be extended to a larger population they represent if the sample is well chosen.

Randomly selected household heads were sometimes absent and there was nobody to talk to. In this cases selection of different household heads were made. In situations where it was possible to get somebody in the household who was conversant with how the household is ran, they responded to the questions. There were also cases of respondents exaggerating or concealing information for one reason or another. May be because they associate the researcher with future developmental or employment activity, they feel it is in their interest to portray themselves as worse than what they really are. As much as possible some painstaking cross checking was done in such cases for the purpose of revealing the real facts. Due to the pervasive illiteracy in the communities a vast majority of respondents did not know their ages and these had to be estimated for them.

3.11 Conclusion

This chapter did present the research methodology and methods employed in this study. It discussed the research approach, the data sources and the various data collection techniques among others. The sampling methods are also explained and the study constraints presented. The researcher is confident that, following these procedures, the research can be replicated. The outcome and results of the research are presented in the next chapter.

CHAPTER FOUR

4.0 DATA AND DATA ANALYSIS

4.1 Introduction

This chapter will present summaries of regional and district profiles, and data collected from the study communities. There will also be an analysis of the data/information since according to Bryman (2001:402) the findings can acquire significance in our intellectual community only when you have reflected on, interpreted and theorised on the data. This was exactly what was done in this chapter.

4.2 Physio-graphic Environment and Framework Conditions of Study Area

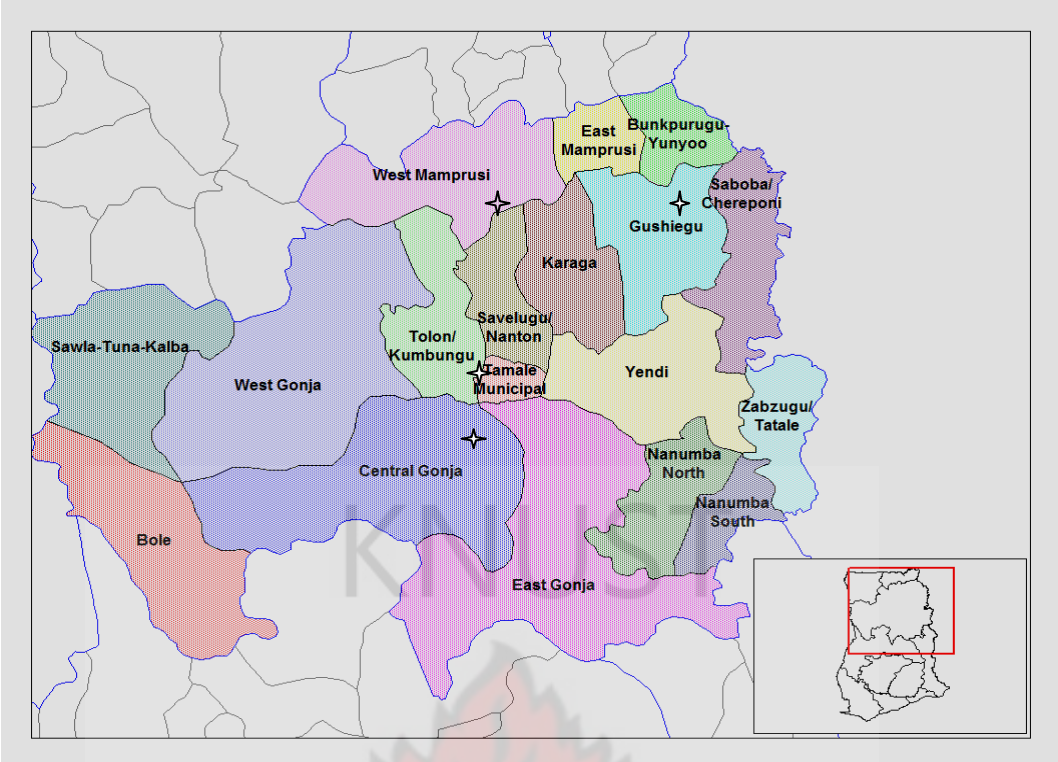
4.2.1 Geographical Location

Northern Region is the largest region of Ghana in terms of land area. It lies in the north of the country. It is bordered in the northwest by Upper West region, northeast by Upper East Region, southwest by Brong Ahafo Region, south east by Volta Region, in the east by Togo and west by Ivory Coast.

The four communities; Nbanaayili, Kusawgu, Batei (a cluster of small communities) and Nasia were selected from Tolon-Kumbungu, Central Gonja, Gushegu and West Mamprussi districts respectively. Nbanaayili is a Dagomba village while Kusawgu, Batei and Nasia are Gonja, Konkomba and Mamprussi villages respectively. The locations of these communities are presented in the map (figure 4.1) and indicated with ‘stars’.

4.2.2 Agro-ecological Zone

The whole of Ghana is divided into six agro-ecological zones on the basis of their climate. The natural vegetation is determined by the different climatic conditions and influenced by different soil types. These zones from the north to south are the Sudan savannah, Guinea Savannah, transition zone, semi-deciduous forest, rain forest zone and the coastal savannah. Northern region lies within the Sudan savannah and Guinea savannah zones. The dominant crops in the region are maize, sorghum, yam and groundnuts. Cassava is popular in the south eastern part of the region.



Source: Modified from http:/en.wikipedia.org/wiki/Northern_Region_Ghana

Figure 4.1: Political Map of Northern Region Showing Districts and Locations of Study Communities indicated with Stars

Animals reared in the region include cattle, sheep, goats, pigs, local fowls and guinea fowls. In majority of cases, cattle belong to an ethnic group of farmers or family or even a whole village. Traditionally, most farmers in Northern Ghana rear cattle for socio-religious reasons or to serve in ritual events. Two factors of tradition and customs are of great importance to cattle rearing in the region: the prestige of the herd and its value as a self-sustaining investment. The situation is quite different for small ruminants and rural poultry, where the rearing of these animals is seen as an economic venture and tends towards ownership by individuals. Small ruminants and poultry may be used as security in cases where inadequate rainfall may fail the subsistence farmer. They may also be sold for the purchase of seed and fertilizer during the cropping season and also used in the performance of traditional and religious ceremonies. Above all, in most rural families, small ruminants and rural poultry are most likely to be slaughtered and used in the diet as a source of protein than cattle.

4.2.3 Soils

Soils in Ghana are generally highly weathered with predominantly light textured surface horizons in which sandy loams and loams are the common textural classes. The lower horizons have relatively heavier textures varying from coarse sandy clay loams/sandy loams to clays. Heavier textured soils are normally abundant in valley bottoms, which are ideal for rice cultivation. The subsurface horizons showing features of accumulation or significant alterations may contain abundant coarse material either as gravel or stone/concretionary materials. The coarse nature of the soils has an adverse impact on their physical properties, particularly the water holding capacity. Thus, crop stress is not uncommon during the growing season.

Ghana has extensive areas of lands suitable for agriculture but the soils are infertile and only productive with proper management (FAO, 2005). Soils in Northern region are generally Ltn Ferric Luvisols and Lpn Plinthic luvisols. There is a strip of Jn Fluvisols at the eastern border of the region. Soils of the study area have developed from sandstone parent materials. They are characterized by a layer of ironstone that impedes root growth at shallow depths. The soil is generally sandy, slightly acidic, and highly deficient in organic matter, N, and P (Abekoe and Tiessen 1998).

4.2.4 Climatic Parameters

The climatic conditions in the study area are of importance, as the relationship with nature and the climate significantly affects the livelihoods of the rural people. Due to its proximity to the Sahel and Sahara, Northern Region is much drier than the southern areas of Ghana. The vegetation is predominantly grassland, especially savannah with clusters of drought resistant trees such as baobabs or acacias. It has a uni-modal rainfall which is a cause of a slack period in agricultural activities. Between May and October each year is the wet season with an average rainfall of about 750mm to 1050mm (30 inches to 40 inches). This brings about seasonality in the livelihoods of the people in terms of health and food security. November to April is the dry season. Highest temperatures are reached at the end of the dry season, the lowest in December and January. However the hot harmattan winds from the Sahara blow frequently between December and the beginning of February with its concomitant prevalence of upper respiratory tract infections. The temperatures can vary between 14^0 C at night and 40^0 C during the day.

4.2.5 Socio-Political Context

Belief systems of a people have a bearing on their livelihoods. Northern Region is the least densely populated region in Ghana. Most inhabitants (about 52%) speak the Mole-Dagbane subfamily of the Niger-Congo language family. The largest ethnicities within this group are the Dagomba and the Mumprussi. The Gurma along with the Komkomba place as the largest subgroup and they comprise 21% of the population. The largest ethnic group is the Dagomba about a third of the population. On religion 56% are Moslem, 21% traditional, 19% Christian and 3% others (Lentz and Nugent, 2000).

The region is one of the least developed areas of Ghana. More than 70% of the economically active population is agricultural. The small population density is partly caused by emigration due the extreme poverty in the region. It has a rural population of about 1,337,000 about 73% of a total population of 1,820,806 (2000 Census). This is the third largest rural to urban population ratio in the country after the other two northern regions of Ghana; Upper West and Upper east regions which have 84% and 83 % respectively.

Most small scale farmers sell their produce irrespective of whether their yearly production is adequate to feed the family or not. They sell in poor local commodity markets, and then buy food at higher prices at other times of the year. Generally, agricultural commodity prices fluctuate between the seasons in response to supply and demand. Prices are cheaper at harvest time due to local glut of commodities, poor distribution network and poor market information. However, prices are lowest at harvest time mainly because most farmers are forced to sell their produce due to urgent need for cash to meet loan (used for farming) obligations and social commitments.

On the general agricultural commodity market, including the sale of livestock and poultry, the farmer is a price taker – having no influence over the levels and movement of his commodity prices because of his weak position in the market relative to buyers. Buyers/traders are able to exert a stronger influence on the market

because they are generally better organized than farmers are, and better informed about the market.

4.3 Profiles of study Districts

Information contained in this section is culled from www.ghanadistricts.com downloaded on June 20 2009.

4.3.1 Tolon/Kumbungu District

The District lies between Latitude 10-20 North and Longitude 10 to 50 West, shares borders with West Mamprusi District in the North, West Gonja District in the West and South and the East with Savelugu/Nanton District and the Tamale Metropolis.

According to the Baseline Survey of 1999, only 33% and 40% of the population have access to safe drinking water in the dry and rainy seasons respectively. The main water sources especially in the dry season are pond/dugout/dams. Other sources include streams and rivers, and rain water during the rainy season. About 70.3% and 62.6% (during dry and rainy season respectively) do have access to safe drinking water within a distance of 500 metres. This state of affairs coupled with poor sanitation, have very serious implications for the health of the people in the district.

In the agricultural sector, studies have indicated that along the banks of the White Volta, irrigation farming is feasible and can take place throughout the year. In the two big dams at Bontanga and Golinga a sizeable number of the citizenry are engaged in the cultivation of different crops ranging from Vegetables to cereals. The District Assembly really encourages dry season farming through its youth employment programme. It is worth noting that vegetables produced from these two (2) dams supply the Tamale Metropolis with vegetables throughout the year. The district is also noted for the production of industrial crops like cotton. The District is endowed with vast of pasture suitable for livestock production.

4.3.2 Central Gonja District

The Central Gonja District covers a total land area of 8,353 Km^2, representing 12% of the total landmass of the Northern Region. It is located at the southern end of the Northern Region of Ghana. It shares boundaries in the north with the Tamale

Metropolis, the Kintampo North District of the Brong-Ahafo Region in the south, East Gonja District in the East and the West Gonja District in the West. The Central Gonja District was carved out of the former West Gonja District in 2004. The district has about 69,665 people according to 2000 population census but the recent population projection is 86,298. The population, though not evenly distributed according to the projection, has large concentration of people in a few large settlements such as Buipe (the district capital) (8,347), Yapei (4,044), Mpaha (4,126). Kusawgu the study community is about 65 kilometres north of the capital and about 21 kilometres south of the Tamale Metropolis.

The sanitation situation in the district is not the best. With the exception of some few places of convenience, majority of the people do open defecation. The population density of the district is 8.3 persons per sq. km which is below the regional density of 25.9 persons per sq. km. the district population growth rate of 3.1% is higher than the national (2.8%) respectively. The district lies within the tropical continental zone. Annual rainfall is unevenly distributed and limited to six months that is, from May to October. The mean annual rainfall ranges between 1000mm and 1500 mm with its peak in September. It has a slightly longer rainy season than the rest of the northern region.

The District is predominantly agricultural with about 80% of the economically active population (18-54years) involved in various farming activities. Major food crops cultivated include yam, maize, cassava, sorghum, groundnuts, rice, millet, cowpea, bambara beans and soyabeans. It must be stressed that several farmers do mix cropping. Due to the availability of relatively fertile agricultural lands, crop output is quite high as compared to the national average. The district has a great potential to develop irrigation, which will create employment for the youth. Three (3) irrigation projects at Buipe, Yapei and Wambong are under construction.

4.3.3 Gushegu/Karaga District

Gushiegu/Karaga District is located in the northeastern corridor of Northern Region. The district was carved out of the then Eastern Dagomba District Council in 1988 with Gushegu as the capital. The district capital is about 135 kilometres north east of the regional capital and Batei the study community is about 55km north east of the

district capital (Gushegu). The district is bordered by four other districts in the region, namely; Savelugu/Nanton to the west, Saboba/Chereponi to the east, East and West Mamprusi to the north, and Yendi to the South. The total land area of the district is 5,796 km^2, about one-twelfth or 8.3% of the region's total land area of 70,384 km^2. It has a population density of 22 persons/km^2. It is the fourth largest district in the Northern Region. The district has 469 communities, with the capital located in Gushegu. The capital is about 114 km from the Northern Regional capital, Tamale.

Agriculture in the district is predominantly small holder, subsistence and rain-fed. Although the annual rainfall ranges between 950-1300mm (sufficient for crop production), the erratic nature of the rainfall pattern is not conducive for good yields. The district has no land under irrigation. The extension-farmer ratio in the district is 1:3,045 (worse than national ratio). The proportion of economically active population in the district is estimated to be 43% and more than 80% of this active people are engaged in agriculture. The economic activities in the district are agro-based and include farming, agro-processing and trading in foodstuff. There are only a few small-scale industries such as welding and fitting shops. Trading especially by women is very important in the district.

Currently, the potable water coverage in the district stands at 46%. This translates to 57,517 out of the 125,430 people. That is, 67,813 people in the district are without access to potable water. The problem of potable water in the district is quite enormous especially in the rural areas. As more than 50% of the population is without potable water, the effect of lack of water on health and productivity is great. A typical lean water season in the district exudes a rush for water of all kinds.

4.3.4 West Mamprussi District

Walewale is the capital of the district and Nasia the study community is about 18 kilometres away on the Tamale road. The district is located roughly within longitudes 0°35'W and 1°45'W and Latitude 9°55'N and 10°35'N. It has a total land area of 5,013 km^2 and shares boundaries with ten districts and two regions. It shares boundaries with East Mamprusi and Gushiegu-Karaga districts to the East, West Gonja, Savelugu-Nanton and Tolon-Kumbungu districts to the south, Builsa,

Kassena-Nankana and Bolgatanga districts (Upper East Region) to the north and Sissala and Wa districts (in Upper West Region) to the west.

The district is predominantly rural with more than 70% of the population living in rural settlements with populations less than 2000. The principal land uses reflect the almost total rural base of the district economy. About 80% of the people depend on agriculture for their livelihood. According to the 1984 population census, the West Mamprusi District recorded a population of 79,130. Currently the population is estimated at 117,821, which was recorded in the preliminary results from the 2000 Population Census. Out of this 49.7% are males and 50.3 are females. The urban population in the District is 16.2%

The economic base of the West Mamprusi District is agriculture with an average 80% of the economically active population engaged in one form or other of it. Agricultural activities in the district include crop production, livestock and fisheries. Only 54.7% of the 80% however farm as a major activity. Agriculture is basically on a subsistence level with smallholder farmers representing the main users of agricultural land. The district is characterised by a single rainy season, which starts in late April with little rainfall, rising to its peak in July-August and declining sharply and coming to a complete halt in October-November. The area experiences occasional storms, which have implications for base soil erosion depending on its frequency and intensity especially when they occur at the end of the dry season. Mean annual rainfall ranges between 950 mm - 1,200 mm. The principal sources of water supply in the district are boreholes fitted with pumps, hand dug wells (protected and unprotected) streams, pond and dugouts. Sixty-nine percent (69%) of settlements in the district rely on surface water for drinking either perennially or seasonally. Both human beings and animals share these same sources of water. Due to the heavy demand on the vegetation for domestic energy use, there has been deterioration in the vegetation. Coupled with this is the rampant bush burning as well as poor farming practices, which are all steadily degrading the environment.

The predominant housing types in the district and their distribution are as follows; mud or sandcrete buildings with thatch roofs take eighty percent and mud or sandcrete with zinc roofs take twenty percent. Roofing with zinc is a symbol of wealth in the

society. The general state of housing in the district is poor with a lot of houses marked by cracked walls, leaking roofs and weak foundations. The poor state of housing indicates the high degree of poverty in the district.

4.4 Local Perceptions of Vulnerability Contexts

In the surveyed communities there was some unanimity in their perception of the climatic conditions. Although they all acknowledged the erratic nature of the rainfall pattern (unreliable in terms of amounts, timing and distribution), they did not see any particular trend. Erratic weather conditions were mentioned as a major hindrance to their agricultural practices. The time of data collection of this study coincided with a drought which was adversely affecting their early crops and at the same time hindering further cropping. About 85% of the samples in all the surveyed communities were of the experience that drought can cause total crop loss of maize. This corroborates a study Legesse (2006) carried out in Ethiopia where farmers said drought might cause a yield loss of 50 – 100% depending on the severity.

Many rural farm families seek livelihoods on marginal lands very close to their dwellings. And they are exposed to environmental hazards such as floods, droughts, fires and so forth. These conditions exacerbate poverty. During focus group discussions it was learnt that there is no good year or bad year for the resource poor farmers. They said "every season is the same – all the time it is the same for the poor". Rising climatic uncertainties and the hydrological variability increase the urgency of integrated planning as it affects crop yields and consequently the livelihoods of the rural folks. Elsewhere in the continent farmers are already adapting. They are planting different varieties of the same crop, changing planting dates and adopting practices to shorter growing seasons. In the sample communities about 90 percent of respondents perceive climatic variability but report no change in their practices to mitigate the change. Barriers to adaptation as revealed during discussions are due to lack of savings and credit or lack of access to water. Better climate information which is a cost effective way of adapting is also lacking.

Price inflations of inputs such as fertilizers and other goods and services in particular were a serious risk factor for the respondents. Prices of farm inputs are far beyond their reach and those who manage to acquire some are afraid of the risks of

unpredictable weather conditions. On price fluctuations in food and cash crops the respondents recognise with pain the give away prices with which they sell their produce during harvest and the exorbitant prices at which they buy the same food items during the lean season. They also complained about decreasing crop yields with the passage of time. The table below (table 4.1) presents the perceptions of the survey communities about their crop yields as the years go by.

Table 4.1: Observations of General Crop yields by Community

Observation / **Community**	**Decreasing yields** % of Respondents	**Increasing yields** % of Respondents	**No particular trend** % of Respondents
Nbanaayili	75%	10%	15%
Kusawgu	78%	12%	10%
Batei	80%	10%	10%
Nasia	77%	8%	15%

Source: Study data -2009

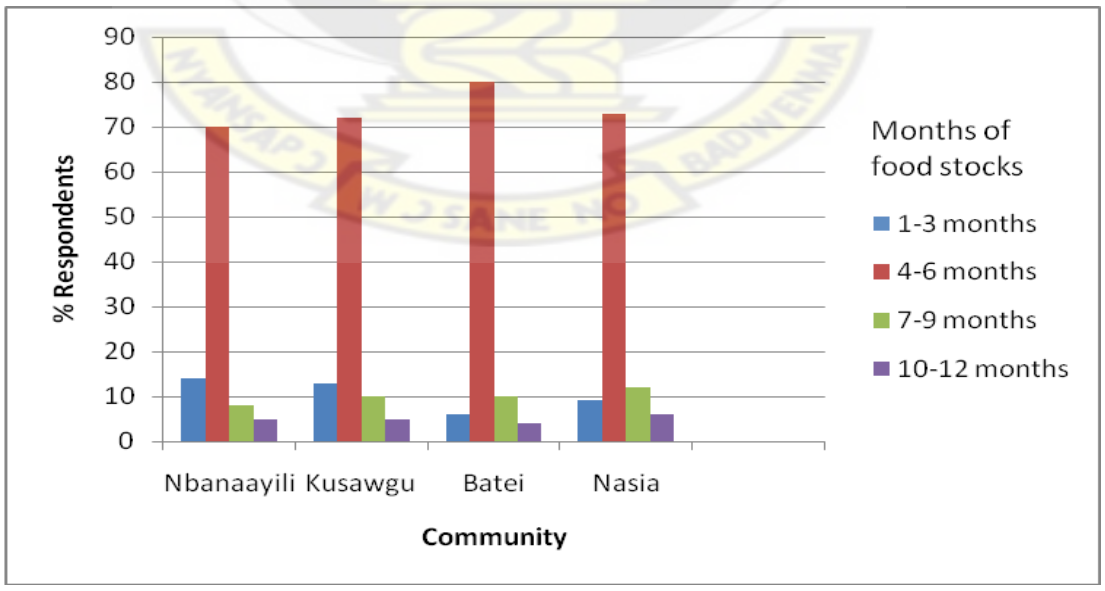
Also as part of their vulnerability contexts some respondents considered social conflicts and war as important phenomena which affect their livelihoods. Their reason was that conflicts lead to the loss of their meagre assets. Civil wars/conflicts based on clan rivalries, chieftaincy and ethnicity in several countries have brought untold suffering to the poor, and even after years of peace, life has not returned to pre-war standards. In Bosnia, Somaliland and Sri Lanka poor people speak of very slow and difficult recoveries and lingering tensions. This same experience was complained about in all four survey communities which are all in the conflicts prone areas of the Northern Region.

Another complaint that a vast majority of respondents reported during discussions was about the long agricultural slack period of about six months in a year due the uni-modal rainfall pattern. This has reduced their working days in a year to far below acceptable standards and this has adversely affected their earnings and their ability to move out of poverty

4.5 Household Food Security

Months of inadequate food provisioning has been defined as the time between food depletion and the next harvest (Bilinsky and Swindale, 2007). It is usually used as a measure of food insecurity in a highly subsistence oriented area where production is

primarily for home consumption and households do not make significant sales or purchases in the market. Households in Northern Ghana are patriarchal and polygamous and work and responsibilities are distributed along gender lines. Men are obliged to provide starchy staples such as maize, yam, millet and so forth and women are responsible for the complementary soup and the preparation of the whole meal. Women spend a tremendous amount of their income on ingredients for soup such as vegetables, salt, fish and oil (Padmanabhan, 2004). When sample households in the study were asked during interviews (that was in May 2009) whether they still had food stocks, it was observed that about 95% of respondents had ran out of stock. Discussions also revealed that even in so called 'good' years in many households there is seasonal hunger usually in the months just before the coming harvest in July (down south of the country) and August/September in the north of the country. An analysis of their staple grain requirement is on the average about one maxi bag per month and this is what the 95% of them cannot meet. They can not hold grain in storage (food and seed) even in the good years. This indicates that vulnerability is structural rather than transitory for most of the households. The assessment of the food security situation in the sample communities revealed that households experience a significant degree of food insecurity with food insecure periods ranging from 1-8 months which corroborates Quaye's (2008) food security survey of northern Ghana. The figure below shows the degree of food security or insecurity in the surveyed communities.



Source: Survey data 2009

Figure 4.2: Months of Household Food Security by Community

4.5.1 Coping Mechanisms during Food Insecure Periods

During food insecure periods households use a wide range of measures and communal support networks to cope with the situation. Among these are purchases, support from relatives and friends from within and without and sale of livestock. Sale of household valuables and collection of wild foods were not mentioned but focus group discussions revealed that they do happen. Among these mechanisms using of proceeds from sales of small ruminants and fowls was the dominant to purchase same food staples from the market. Also purchasing of less preferred food items such as dry cassava chips was the next option.

Borrowing money to purchase food is not very common in the communities according to the survey respondents. They said this was due to the inaccessibility of credit because most community members face almost similar hardships during the critical periods. Some of these findings corroborate Nyanteng and Asuming-Brepong (2003) who reported that household strategies to sustain food security in Ghana include shifting to less expensive and less preferred foods, borrowing food or money to buy, purchasing food on credit, seeking assistance from friends and relatives and purchasing street food. Respondents also reported of reduction in frequency of food intake from the normal three times a day to two and in very acute situations to one. It was however revealed that this reduction affected only adults and not children. One respondent put it this way; "children can not withstand hunger and we also know the health implications of starving them. They will cry if you attempt underfeeding them because they can not appreciate hardships". Nyanteng and Asuming-Brepong (2003) also reported that when food quantities fall very short some households limit portion size at meal times, limit intake by adults for children to get enough, reduce number of meals per day and skip whole days without eating. Unfortunately these periods of acute food shortage coincide with the peak of labour demand for farming activities which is basically dependent on body energy.

Reduced rations during food insecure months were reported. In Batei for example a good number of respondents reported having just a meal in a day during critical periods of food scarcity. In Nbanaayili skipping meals was not popular. There reduced quantity of food per meal was rather reported. In some cases the reduction only applied to adults and not children. One respondent remarked 'it is a terrible feeling for

your children to cry because they are hungry'. Principal crops such as maize and sorghum are consumed in the household rather than sold in the market and selling them is a real desperate measure. Reliance within livelihood strategies on subsistence consumption for household food security was revealed. Respondents who reported food shortages during the course of the years paid glowing tribute to the role their women play in food provisioning for the household in the most critical periods of food insecurity. "They 'manage' to get the family afloat during the lean season" they reported. It was not surprising when respondents were asked what their objectives were in carrying out their livelihood strategies; over 90% of them said they wanted to ensure food security in their households.

Table 4.2: Coping Mechanisms by Community

Community / Coping mechanism	**Nbanaayili** % of 44 Resp.	**Kusawgu** % of 56 Resp.	**Batei** % of 38 Resp.	**Nasia** % of 42 Resp
Sell cattle	-	-	2	-
Sell small ruminants	82	82	85	79
Sell fowls (local and Guinea)	90	85	75	78
Sell personal valuables	10	15	8	10
Sell household durables (small Items)	10	5	4	5
Eat less preferred foods	80	82	90	78
Eat wild fruits and vegetables	20	25	25	18
Reduce number of meals	25	40	90	75
Reduce portion or size of meals	75	78	90	75
Seek food from friends and relations	15	10	9	9
Send away some members to live elsewhere	-	-	5	-

Source: Survey data -2009

4.6 Farm Inputs and Yields of Crops

The scope of the study did not include getting yields of the crops communities grow in quantitative form. The perceptions of the farmers were that of dwindling yields by the year. They reported low levels of fertilizer application due to high cost, lack of tractor services for early land preparation, un-affordability and lack of knowledge about improved seeds as some of the causes of the low yields. They said during discussions "we can not afford farm inputs such as fertilisers and weedicides and our soils are getting more and more barren and we have lots of weeds and we lose much of our crops this way. In a study in Zambia problems of fertilisers were mentioned more often then hunger among discussion groups. A man from Nchimishi explained that "the main cause of hunger here is lack of fertiliser" (Narayan et al 2000). Fertiliser use in Ghana is estimated at 20% of households and it is estimated at 8kg per hectare compared to 60 kg per ha for developing countries. Productivity in the crop sector is quite low. There is a very wide gap between actual and potential yields (GPRS I citing GSS 2000). The situation in the study communities were worse than the national averages stated above. Looking at the incidence of rural poverty in the region farm inputs are far beyond the reach of a vast majority of rural farmers. The plate below shows a maize farm which had just been fertilised in one of the study communities.

Source: Study Data 2009

Plate 4.1: A Typical Maize Farm in the Exhausted Soils of Nbanaayili

All the respondents said they used seed they selected from their previous harvests for sowing. They look for alternatives mostly from neighbours only when their stored seed goes bad due to improper treatment. Purchasing improved seed from the market is not a priority for them. This could be explained by the weak linkage between the farmers and the agricultural research institutions and extension unit of Ministry of Food and Agriculture (MoFA). Only one-tenth of farmers in Ghana purchases seed for planting according to GPRS I. This has contributed in widening the exploitable yield gaps.

4.7 Livelihood Resources of Rural Communities

4.7.1 Natural Assets

Land

The study revealed that land in the Northern Region is communally owned. Family land system for agricultural purposes was predominant in the communities. In some of the communities surveyed a member of the community does not even need to notify anybody before clearing a virgin land for cultivation. It is only strangers who need to notify the chief. The other instances where one needs to notify or ask for 'permission' is when one needs to use another persons land under fallow or clear a virgin land close to another persons land, to know in which direction he intends to expand to avoid conflict. No hiring of land or crop sharing arrangements was reported in the surveyed communities. The cheapness of land in the region can find explanation in the saying that "cheap things are costly". There is anecdotal evidence that people migrate from this area of free land to down south the country to practise share cropping. Land shortages and fragmentation was however mentioned in Nbanaayili which is very close to the Tamale metropolis.

In addition to the free land (common property) and the livestock, the key assets the families in the communities had to be able to eke a living are their own labour (active adults in the household), their educational attainment (years of education accomplished) and the ownership of productive implements and tools. A few households also reported of having mango trees from which they derive some income when it is in season. Others reported having teak and cashew plantations from which they intend getting some income when they mature. From discussions it was discovered that these plantations are not in scales that can bring about accumulation

for social or economic mobility out of poverty but are also in subsistence scale just like their farms.

Livestock Ownership

Livestock is a substitutable asset that can be sold in order to invest in small businesses and vice versa, non farm income can be used to build up herds, the ordering of these sequences depend on the personal and market opportunities that prevail in different time periods (Ellis and Freeman, 2004). Livestock ownership in sample communities is family ownership and sales are only made under critical conditions. Even though the study did not take a census of livestock in the sample households, discussions revealed generally very small numbers per household. Very few households for example have cattle and they are invariably inherited from generation to generation. Also some of the cattle in the rural areas are owned by people residing in urban areas. In Ethiopia young men may migrate to work in towns for a few seasons to invest in cattle which are kept in family small holding before they return to start their own households (Shankland 2000). In the case of the study communities cattle in particular are some times inherited over several generations. The plate below is a herd of cattle and sheep grazing on common property land.

Source: Study data-2009

Plate 4.2: Cattle and Sheep Grazing in Communal Field

4.7.2 Human Capital

Education:

Nbanaayili has a primary school, Kusawgu has Primary and JHS, Batei has a 'wing' School and Nasia has a Primary School and a JHS (probably due to its accessibility and strategic location it has a police station and a clinic). Remote communities the size of Nasia under normal circumstances do not have the kind of facilities it has currently. Education has been identified as a critical variable explaining rural income differences (WB, 2000a). The study results showed an abysmal level of educational achievements in the sample communities. Apart from a retired agriculture Technical Officer who was a respondent in the survey in Kusawgu the rest of the respondent household heads in all four communities were illiterates. Also apart from the children who were in basic school, all adults in sample households were illiterates. This revelation confirms the assertion that education in the rural communities is seen more as a means of escape from the village than as a way of improving economic and social life. Migration tends to withdraw from the rural community its most active and educated members. The World Bank Poverty Assessment quantitative evidence suggests that even completing primary school increases household income in rural areas by 20% (World Bank 2005). Low attainment of education in rural areas can partly be attributed to farm work – the opportunity costs of education which majority of rural households in the Northern region refuses to let go. The meagreness of rural incomes corroborates the evidence that for the average person, the amount of knowledge that one possesses is positively correlated with his or her personal earnings.

Health

Ill health was frequently mentioned as a serious threat to livelihoods. Health is a priority for the rural poor. Prolonged illness of a person of working age is one of the factors that can push the whole household into poverty. Access to good health was mentioned as one of the next outcomes they are aspiring to after food security when the researcher wanted to know their major objective of their strategies. In a Malian village of Delonguebougou, the first initiative taken by a newly formed community association was the mobilisation of the local residents to respond to the absence of government provided health care by establishing their own village dispensary

(Shankland, 2000). Such initiatives were not noticed in the communities. During discussions it was revealed at Batei that political party divisions in the communities was hindering the formation of such associations to undertake such initiatives. Discussions revealed that people in the communities are not comfortable with the time and resources spent in travelling to and in waiting at health facilities. Physical incapabilities include hunger, weakness, illness, exhaustion and disabilities, and they exacerbate poverty of time and energy. On the positive side, wellbeing includes health, strength, education and skills, all of which empower. The importance to poor people of access to good and affordable health care would be difficult to exaggerate. The body is the rural poor person's main asset. Yet it is those who most need strong bodies for work who are most exposed to sickness and accidents and least able to obtain or afford treatment. Illness, injury and death stand out as causes of poverty in rural areas.

Labour:

A combination of family and communal labour were the predominant forms in the communities with the former being the most prevalent and the latter only solicited from community members when one is overwhelmed by farm work mostly weeding and land preparation. Hired labour is hardly used in the study communities. Sample households were unanimous on their low levels of skills and the negative effects of that on their livelihoods. They said they wished they knew how to do other things apart from subsistence farming to supplement their incomes as the farming they are doing is very risky. Out of the total sample of 180 respondents only two respondents said they do other things in addition to farming which they said persistently fails them. One was a butcher and the other a tailor in Kusawgu and Nbanaayili respectively. The vast majority said they do only farming. This was a reflection of low levels and quality of education in rural areas. The main dividing line between high and low paying jobs is skill. Educated adults are more likely to have non agricultural job and migrate. The younger and better educated and more skilled workers leave the rural areas to find jobs in the urban centres, thus, the reason why almost all the respondents were illiterate. The plate (4.3) below shows the major mode of weed control in the region.

Migration:

Migration plays crucial roles in diminishing vulnerability and lessening poverty in low income countries (de Haan, 1999; Skelton, 2002). Migration may be seasonal, circular (involving periods away and periods at home), rural-urban or international. Recent literature has emphasized the significance of remittances in international financial flows to developing countries (Nyberg et al, 2002;); as well as the complex social as well as economic ties that bind migrants to the livelihood circumstances of those they live behind (de Haan and Rogaly, 2002; Kothari, 2003).

Source: Study Data-2009

Plate 4.3: Rural farmers weeding on a sparsely plant populated maize farm.

Migration of young women and girls to Accra and Kumasi as head porters (Kayayo) was reported in Nbanaayili in particular. They migrate purposely to purchase their marriage paraphernalia. The communities did not however attach any significant importance to this kind of migration in terms of remittances they receive. In the Konkomba community Batei, migration among young girls was not prevalent probably due to the very early betrothal of girls which leads to very early marriages. This restrains them from moving. It has been reported in Mali of many rural young women taking employment as domestic servants in the capital to finance their marriage *trousseau* (Shankland, 2000). Some farmers in particularly Nbanaayili migrate to far away villages in other districts where the lands are still better in terms of fertility to farm and only return after harvest. The community is now almost a

periurban community in the Tamale Metropolis. Lands there are both scarce and exhausted.

4.7.3 Physical Assets of Rural Communities

Every household has at least a bicycle for transportation to their farms and other daily activities. Those who said they had radio sets said they were for both productive and consumption purposes. FM stations which are within reception reach broadcast educative programmes in agriculture which are beneficial to them.

Houses:

Houses in the sample were mostly constructed with laterite/mud and thatch. A couple of houses were partly roofed with zinc and partly with thatch. A number of respondents said their houses with annual maintenance are able to carry them through the rainy season others said they experience some roof rip-off and collapsing of rooms during the rainy season. Focus group discussions revealed that they wished their house could be constructed stronger than what they currently are but their little incomes cannot provide them with stronger houses than they currently have. The plate below is how a typical house in rural Northern Region looks like

Source: Study data -2009

Plate 4.4: A Typical Rural Laterite and Thatch House in Northern Region

Construction of toilets in their houses is not a common practice in the rural areas of the region. A few respondents reported of toilets in their houses. These were mostly one-seater KVIPs some NGOs promoted in the rural communities and the possession did not spread beyond the beneficiaries of the NGO projects. The table below (Table 4.4) shows the distribution of household facilities by community.

Table 4.3: Distribution of Some Household Facilities by Community

Facility / **Community**	**Electricity** % Houses	**Tap water** %Houses	Bulk rainwater storage % of houses	**Toilet** % Houses
Nbanaayili	-	-	-	25
Kusawgu	35	-	-	20
Batei	-	-	-	-
Nasia	55	-	-	10

Source: Field data 2009

The table (table 4.5) below indicates where the vast majority of rural folks who have no toilets (KVIPs) in their houses defecate. This indicates the level of sanitation in the rural communities

Table 4.4: Where People attend Nature's call by Community

Where / **Community**	**Open defecation** % of Respondents	**Public toilet** % of Respondents	**Neighbours' toilet** % of respondents
Nbanaayili	50	20	5
Kusawgu	60	20	-
Batei	100	-	-
Nasia	75	15	-

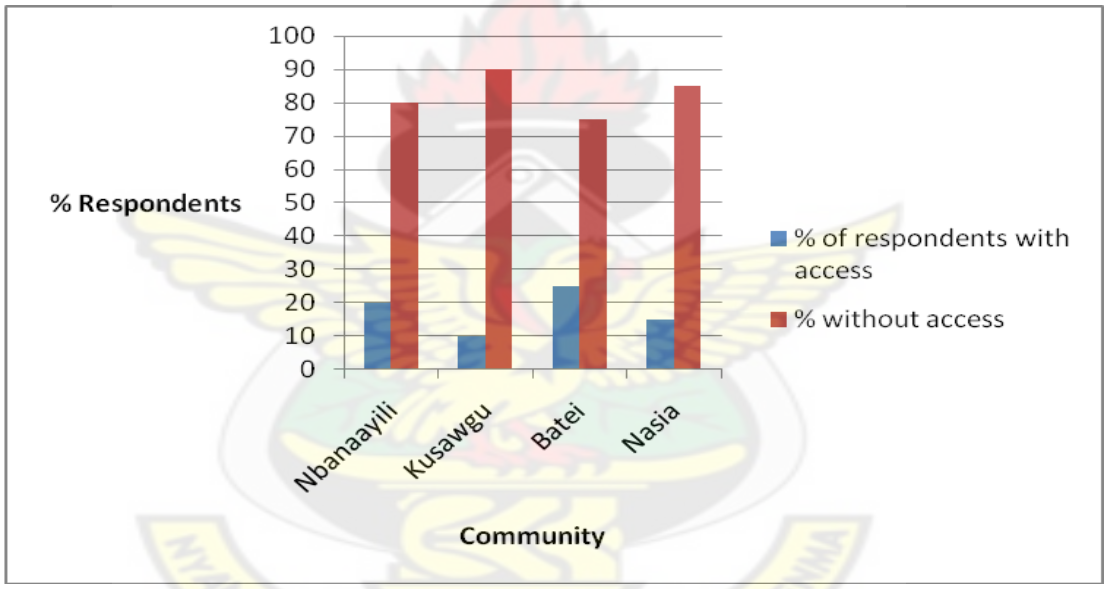
Source: Study data 2009

Only Nasia has piped water from a mechanised borehole. In the rest of the communities their only source of water was from dugouts. Boreholes are not common in the Northern Region due to the fact that the water table is very deep at most places. The other infrastructure that the communities saw as relevant to their lives in their communities was the village market at Kusawgu and the grinding mills in the other communities. Some women in Nasia also make some income by selling fish and other things around the booth where the bridge tolls are collected.

4.7.4 Financial capital of Rural Communities

Credit/Loans and Savings:

Accessibility to credit was very minimal in the surveyed communities. With the exception of Batei where an NGO was operating a micro credit scheme where a few respondents said they have access to credit the rest had very minimal access. A kind of credit some respondents in Kusawgu in particular talked about was that given to farmers by tractor owners from the urban centres during the land preparation period. The terms of this kind of credit according to some of the respondents was not good. Tractor owners plough for them on credit to be repaid in food stuffs during harvest which will be invariably higher than the price of ploughing a unit area. The figure (fig. 4.3) below indicates the access to cash credit by community.



Source: Study data 2009

Figure 4.3: Access to Credit by Community

Saving was perceived to be meant for those who had surplus income rather than a habit for accumulating capital. None of the respondents thought they were rich enough to save. Questions such as whether they have access to the banks drew laughter from the respondents. “Banks are not meant for people like us. They are for people who have surpluses to save and we are certainly not in that category as you can see”. In much of the developing world today, the inability of poor rural households, particularly female members, and enterprises to access credit on competitive terms to invest in new economic opportunities means that their incomes are lower than they

need be. The absence of savings instruments also leads to less productive forms of savings, further reducing the scarce liquidity of poor rural households. A number of factors thwart the development of vibrant financial markets in rural areas. The high transaction costs associated with dispersed populations and poor physical infrastructure, along with the particular needs and higher risk factors inherent in agriculture result in the under-provision of financial services (USAID, 2003). It is critical that strategies for rural financial market development be put in place and that rural households have equitable access to financial services for their business and domestic needs. Giving micro credits to poor women in rural areas has proved to be a strong concept. Taking into account the vulnerable livelihood situation of many women and, for the most part favourable results of, for example Grameen Bank, more micro credit facilities for women producers should be actively promoted (ibid).

4.7.5 Social Capital of Rural Communities

Almost all respondents said they have enjoyed one form of assistance or another from their neighbours, friends and relatives before in their difficult moments. These occur in situations such as inability to carry out cultural practices on their farms at the appropriate time due to sickness, bereavement and other mishaps. They said such relationships give them a sense of security and good neighbourliness. Assistance to neighbours in times of difficulty and celebrations is therefore an obligation especially during bad times but lending money to each other was not very prominent as indicated in the discussions. This is probably due to the fact that a vast majority of them do not even have cash to lend to each other. The social capital reported was not enough to pull the rural folks out of poverty but the counterfactual would have been worse. The information gathered only pointed to the fact that it is used to balance the equitable distribution of hardships in the communities.

Norms, beliefs, cultural practices and so forth play a role in shaping livelihoods of the rural folks. Not much was discovered in this direction in the study communities. A number of respondents identified wastage of food during the performance of funerals as a cultural practice that is detrimental to their food security situation. Early betrothal of girl children especially in the Konkomba community Batei was also identified as a hindrance to girl child education in the community and a drain on the future husband who has to pay homage in all manner of ways to the in-laws until the girl is of

marriageable age. There is no public school in that community. The school they had in the community was what is referred to as a 'wing school' set up by an NGO in collaboration with Ghana Education Service (GES). It was observed that the concept of social capital as embodied in the horizontal social networks and solidarity relationships was the most common. These relationships focused on poor people's ability to make claims on other equally (or slightly less) poor people, rather than their ability to lay claim to support from centres of authority in general and local government in particular.

4.8 Organisations and Institutions in Rural Communities

Institutions change much more slowly than the structures that contain them (North 1990). The creation of structures ushering in democratic decentralisation does not in practice quickly change habitual relationships between public officers and rural citizens (Cook and Manor 1998). The study revealed a number of useful insights to institutional contexts within which households construct their livelihoods.

What was conspicuously missing in the communities were functional community based organisations. The only few respondents who said members of their households belonged to organisations were only referring to CBOs formed by NGOs that operated in their communities in times past. Almost all the CBOs formed by these NGOs died soon after the NGOs pulled out of the communities raising serious questions about the sustainability of NGO activities in the region; haphazard coverage, failure to scale up and failure to sustain what is achieved after project completion are their bane. The only functional organisations are PTAs. Some respondents said they were members of them. It was discovered that on decision taking the leaders in most cases take decisions and inform the general membership.

The situations in the communities compare and contrast with what Ellis and Freeman (2004: 19) discovered in East Africa. According to them the last decade has seen a multiplication of Community Based Organisations (CBOs) in East Africa, some instigated by NGOs, some responding to new pressures that reciprocal help between community members can help to alleviate. Most prevalent groups are women's groups and credit groups created for particular purposes. Most of these groups take the form of rotating credit and savings associations. This was not reported in the study

communities. Also absent in the communities was producer organisations and this corroborates GPRS I when it states that producer organisations are non existent in rural communities to stand against exploitation by the more organised middlemen. Members of parliament were weighted low in the ratings of the communities. Respondents said they see them only during electioneering campaigns.

In spite of the low ratings of government establishments the totality of the respondents has the belief that only government or the NGOs can help them out of their predicament. This mentality of rural folks towards changing their conditions does not look positive from the interactions, the researcher had with them. They feel they should have everything they need before they can change their situation. This mentality contrasts very much with the following assertion;

> "the question for each man to settle is not what he would do if he had means, time and influence, and educational advantages; the question is what he would do with the things he has. The moment a young man ceases to dream or to bemoan his lack of opportunities and resolutely looks his conditions in the face, and resolves to change them, he lays the cornerstone of a solid and honourable success" (Hamilton Wright Mabie 'n.d' cited in The Mirror news paper of 20 June 2009:10)

Another writer Thomas Jefferson, n.d (ibid) says that "nothing can stop the man with the right mental attitude from achieving his goal; nothing on earth can help the man with the wrong mental attitude".

4.9 Livelihood Activities and Aspirations of Rural People

People who live in conditions which put their main source of income at recurrent risks will develop self insurance strategies to minimise risks to their livelihoods (Longhurst 1986; Corbett, 1988). The risk minimising strategies noticed in the study was the reliance on some ecologically well adapted crops and animals and the adjustment within cropping systems. Not even a single respondent reported using improved seed or having improved animal breed.

What were not also recorded much were livelihood diversification processes by which respondents constructed a diverse portfolio of activities and social support capabilities. Subsistence farming was what was constantly mentioned as their major activity in all the communities surveyed. The study found that livelihoods in the study area deviate from the pattern generally observed in Sub-Saharan Africa, where

agriculture and associated assets are found to be key variables differentiating the poor from the better-off (Ellis 2000a; Campbell *et al.*, 2002), and where diversification into productive non-farm activity is considered a more recent trend (Bryceson, 2002). Without understating the importance of agriculture, when compared to other Sub-Saharan African countries, where agricultural production played only a limited role in the livelihoods of other communities, while non-farm activities, in the form of labour migration had been a dominant feature of livelihoods, the reverse was the situation in the study communities. Animal rearing which was also mentioned as one of the agricultural activities is not done in a business-like manner. The animals especially the small livestock such as goats and sheep are just left to roam and graze on common property lands without any proper care. They reported serious lack of veterinary services for them. Without much non-farm income earning activities the communities are not able to generate additional income to invest in improved technologies to increase their agricultural productivity. The situation observed is the reverse elsewhere where rural folks are reported to earn about half of their income from non farm activities.

Crop farming was the primary occupation as indicated- almost all respondents said they were engaged in the farming of one crop or the other. The common phrase which was used when respondents were asked what they did to earn income was "as for us, we know only farming". Some women engage in food processing and agro-processing for income. Women in Kusawgu also engage in charcoal making. They know that felling trees for making charcoal degrades the environment but they say they have no choice. "Because we are hungry we have to exploit the forest" they said during discussions. A strong correlation could be established between the crops cultivated and staple foods of the communities. They grow what they eat which also depends on the soil properties and micro-climatic conditions prevailing in the community. Due to favourable climatic condition respondents in Kusawgu placed much emphasis on yam cultivation. Maize, sorghum and millet are more prevalent in Nasia, Batei and Nbanaayili. With abundance of valleys suitable for rice cultivation in all the communities it was discovered that rice cultivation is rather on the low side due to low levels of input use due to high input/output price ratios. Other causes include inadequate and expensive mechanization services.

Food security was mentioned as their top priority. Next to food security, access to good health was their objective. This state of affairs was not surprising against the background that in rural communities acquiring basic needs is a full time job. Getting money to educate their children was the third objective.

CHAPTER FIVE

5.0 FINDINGS AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the major issues that were revealed by the study. Several of the issues are relevant to discourses on rural livelihoods and development policy.

5.2 Findings

The study revealed a number of key development issues. Some of these issues merit special policy considerations in order to bring about rural development. They include the following:

5.2.1 Three Kinds of Poverty

The study revealed some precarious livelihoods of the study communities which could be attributed to three kinds of poverty; area poverty, resource poverty and people poverty. The area in which they live is under-developed. Rural people are frequently disadvantaged in where they live, and in access to basic services. Often they are geographically isolated, with roads, transport, telecommunications, lighting, access to information and markets that are inadequate or lacking altogether. Schools, clinics and hospitals are either far away or of low quality. Shelter, water, sanitation and fuel are inadequate and unsafe. It takes poor people long time, and often very much more energy, to fetch water, wash, find and collect fuel wood, maintain their shelter, get to market to buy and sell, get: information, gain access to government offices, contact friends and relatives, get treatment for sickness or accidents, and even to go to the toilet. Coupled with area poverty, poverty of natural resources was observed in the form of degraded land and infertile soils. People poverty was found to be in the form of lack of skills- no useful knowledge, no trained skilful people, and no academic qualification.

5.2.2 Vulnerability Settings of Rural Folks

Rural households are highly dependent on nature, leaving them vulnerable to droughts, floods and pests. Weather conditions position households in rural areas either above or below the thresholds of profit and food security. Erratic weather conditions are negatively affecting crop yields. Their lands are poor and fertility keeps dwindling and barely assures subsistence. They have few numbers of livestock.

5.2.3 No Buffer against Contingencies

Rural livelihoods have no buffer against contingencies such as social conventions (bride price, weddings, funerals and so forth) because they don't save and do not even think that saving is a habit they need to cultivate. Social contingencies have to be met by becoming poorer- no buffers and so assets have to be sold. Social conventions make heavy demand on resources. Funerals are made lavish occasions, the expenditure of which exceeds the resources of the sponsors and they sometimes rely on their social capital.

5.2.4 Body Energy as main Productive Asset

It was found that the main productive asset of rural households is the labour of its members which was mostly manual and unskilled. They lack the wherewithal to hire labour, neither do they have the requite farm machinery to boost their productivity.

5.2.5 Food Insecurity

Stocks and flows of food and cash were found to be very low, unreliable, seasonal and inadequate. Food and cash meet only immediate needs and are soon used up. During the lean season which coincides with food shortages, sickness and farm work their vulnerability heightens. Rural folks are net food buyers. Even in the agriculture-based rural economy a large number of the subsistent farmers are net food buyers and so agriculture is important for food security and a source of income for most rural people

5.2.6 Important Organisations and Institutions

Functional CBOs were found to be absent in the communities. All CBOs formed at the behest of NGOs became dysfunctional soon after they pulled out of the communities. No local organisations formed by the communities themselves, except PTAs, were found.

5.2.7 Very Inadequate Extension Services

Agricultural extension services which help farmers to learn how to augment their productivity, raise their incomes, and collaborate with one another and with agribusinesses and agricultural research are woefully inadequate or absent in some communities.

5.2.8 Major Employment Activity

Households contrive livelihoods with a range of activities. Subsistence farming is the major employment activity. Rural employment is a daunting challenge. Even though diversification of activities was found it did not did not mean corresponding diversification in income sources.

5.2.9 Government is the Saviour

Sample household heads were unanimous in their belief that only government could help them out of their difficult situation. This belief has two angles to it. On one hand, surely the nation state remains responsible for creating the enabling environment for the agriculture for development agenda- for the private sector and civil society to thrive. On the other hand over-reliance on the state as noticed in the communities can however lead to apathy.

5.2.10 Household Activities are for Survival

Another revelation of the study is that the types of activities households pursue are not designed to move out of poverty but just for survival. Many respondents complain of declines in affordability of agricultural inputs, distant markets, and lack of credit, but the number one objective of their activities is to attain food security for the household.

Moving away from poverty to a life that includes assets and livelihood security will require integrated actions:

5.3 Recommendations

The analysis of rural livelihoods systems gives food for thought and also makes a call for action for local change depending on national and local contexts. The multi dimensions of deprivation and vulnerability demand multiple interventions.

5.3.1 Policy Recommendations

The agenda for change in rural communities should be looking at making shifts in the following areas;

a) Phase agricultural policies

Due to the multifaceted nature of the challenges of agriculture in the rural areas policy support to agriculture should be phased. During the first phase the basics should be established- roads, irrigation systems, research and extension and land reforms where necessary. The second phase should look at seasonal finance, extension, input supply systems, reliable output markets and so forth. And finally the state should withdraw gradually.

b) Intensify Agricultural Extension

To helps farmers to augment their productivity, raise their incomes, collaborate with one another, and with agribusinesses and agricultural research and extension should be intensified. Provision and public financing of extension services should increase, incentives to extension staff, strong political commitment to agricultural extension and agriculture generally, extension workers be made abreast of new technologies, fiscal sustainability and evidence of impact be made felt.

c) Set in motion prevention strategies

Irrigation reduces the risk from droughts, as do soil and water conservation investments. Developments in agricultural science, such as breeding livestock resistant to disease and crops resistant to pests, diseases and drought can eliminate the impact of some pests and diseases.

d) Improve health delivery services

Improving health service delivery, including public health measures, can reduce morbidity rates and reduce the spread of HIV/AIDS. Risk-reduction strategies minimize the downside variance in income profiles and increase the overall expected average income.

e) Intervene to cushion against climate variability

Interventions aiming to support agriculture should, *inter alia*, be designed to assist farmers in cushioning the impact of climatic variability. Climate change is increasing production risks in many farming systems, reducing the ability of farmers and rural societies to manage risks on their own. This could be achieved through improvements to food storage infrastructure (allowing existing food stocks to last longer), the

establishment of rural credit facilities, and the extension of markets for livestock (giving households the opportunity to raise cash by selling during lean periods).

f) Intensify public Infrastructure Investment in rural areas

Public infrastructure investments can do much to reduce the risk exposure of rural households. Rural feeder roads can do much to integrate market economies, reducing some market price volatility as well as diversifying market opportunities for the rural poor.

g) Provide safety nets

When all else fails, poor rural households need safety nets to help them cope with sudden shocks. These take the form of social transfers and emergency assistance, in cash or in kind. The programmes should be specific to the particular risks and attendant vulnerabilities that rural households face. While the performance of the macro-economy may be outside the control of development practitioners, interventions can be designed so help households to buffer or cushion them against the adverse effects of some of the symptoms. For example, alternative livelihood opportunities need to be found for rural communities with very poor soils, and poor households need to be cushioned against the effects of rampant inflation.

h) Strengthen Public Institutions

Public institutions need to be strengthened in their capacity to develop an appropriate blend of policy, regulatory frameworks and investments to re-launch and support the agricultural sector. At the same time, the role of private sector institutions in agriculture needs to be strengthened to help address a range of problems including limited access to financial services including credit and risk management instruments, to key inputs such as seed and fertiliser, and to output markets. Traditional forms of rural organisation have failed, and new, more effective organisational support is needed. Decentralised structures and more genuinely representative organisations will help provide stronger voice and better market access for these poorer producers. Government should ensure that institutions exist to facilitate the flow of information to rural producers.

i) Make Local government structures operational

Much room exists for improving the efficacy of district assemblies and local governance. The focus here should be on making the substructures functional ensuring that minimum acceptable standards of participation of rural communities and service provision and infrastructure are achieved and maintained. Agriculture policy has traditionally been highly centralised, with sector strategy determined and implemented by the line ministry. Decentralised structures of government and service provision provide poor people with a greater say in the design and implementation of policy. These structures, more responsive to local needs, can provide a forum for investment in the infrastructure and services to support agriculture and non-agriculture enterprises activities in rural areas.

j) Integrated actions

To take the rural poor from illness and incapability to health, information and education action has to be taken in a multi-sectoral fashion. Innovative means of providing protection during health and other income-related shocks is greatly needed.

k) Reduce direct costs of schooling

Eliminating direct costs of schooling, including costs of school supplies and uniforms, and offsetting indirect costs, such as loss of children's labour through scholarships, would encourage many more poor families to send their children to school. That is why FCUBE policy is very important.

l) Put in place early warning systems of conflicts

Solving community problems through joint action across previously warring ethnic lines is difficult. Therefore preventing conflicts is a better option than resolving them.

m) Increase rural people's participation

It will be profitable to move rural people from exclusion and impotence to inclusion, organization and empowerment. Rural people's evaluations of institutions show that by and large they are excluded from participation in decision making and in equal sharing of benefits from government programs as well as from those of NGOs.

n) Fuel economy from below

Fuelling the economy from below; supporting producer organizations of the poor and provide social protection; and enhance access to savings, credit and venture capital services which are all lacking in rural communities.

5.3.2 Recommendations for Future Research

Segmenting the rural people into income or wealth groups will be important in identifying the types of risk they face and how they might be vulnerable to them and also targeting interventions. This study lumped together all rural households into a broad group of the poor due the fact that rural people are generally poor. Disaggregating rural households using PRA methods can reveal useful information for planning purposes. Also rural livelihood systems have so many components which can be investigated individually into greater depths.

CHAPTER SIX

6.0 SUMMARY AND CONCLUSION

The precarious nature of the livelihoods of rural people the world over pricked the imaginations of the researcher to want to investigate into how rural people in Northern Region of Ghana (one of the poorest regions) make their living. This thesis examined the livelihoods systems of four randomly selected rural communities of the region. It sought to describe the broad livelihood issues the rural people in the study area, through the eyes of the rural people themselves by sitting, asking, listening and learning from them. The study used the sustainable livelihoods framework as the theoretical background. It reviewed the components of the generic framework and other relevant literature. It approached the analysis by; investigating the nature of the vulnerability contexts, describing the communities' natural and physical capital, identifying a number of key livelihood determinants, and analysing household assets and livelihood strategies among others. What rural people aspire to in carrying out their livelihood activities were also looked at. The study revealed some kinds of poverty by virtue of their location, the skills they possess and the resources they have. The livelihood challenges of rural people are multi faceted and range from local through national to international. Supported by literature and empirical evidence it was found that even though livelihoods are diverse, the main livelihood activity of the rural folks in the study area is food crop farming and their main aim is to achieve food security. It is also their main source of income. Natural resources are their main assets but there was however no evidence of a sustainable management of these assets. Rural livelihoods are at the mercy of natural climatic conditions such as rainfall pattern and distribution. Social capital is important in rural settings by helping to ameliorate hardships but not adequate to move them out of poverty. Conflict prevention and timeous resolution was emphasised. It was realised that integrated solutions are needed to address the multi-dimensional challenges of rural dwellers in Northern Region

The findings were derived from a relatively small sample of four communities from a big rural region to illustrate the livelihood systems and so the researcher is cautious in generalising to the bigger picture. However, without doubt the study has contributed both theoretically and empirically to the growing literature on rural livelihoods, and to development planning in the study area in particular.

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APPENDICES

Appendix A: Rural Livelihood Systems Questionnaire-Household Inquiry

Section A- Household Demographics

Serial Number:…….
Community/District:…….

Respondent (Household head):

1) Sex: Female [ ] Male [ ]

2) Age:……..

3) Ethnicity:……..

4) Religion: Islam [ ] Christianity [ ] Traditional [ ] other (specify)

5) Size of household (#):……..
a) Number of adult Males: ……
b) Number of adult Females:…….
c) Number of Children: ……
d) Number of Migrants:…….

Section B- Perceptions of Vulnerability Context

6) Have you noticed any changes in the climate during the last 10 years which have affected the living of the household? Yes [ ] – No [ ]

7) If 'yes' in 6) above what are the changes you have noticed?

8) Do you do something to mitigate the effects of these changes on your (household) living?

9) What economic trends (prices, fees, levies, etc) have you noticed that affect your (household) living?

10) What events (bad times/disturbances (eg conflicts etc) have occurred abruptly and have affected the living of your household in the past 10 years?
Ethnic conflicts [ ] chieftaincy conflicts [ ] land conflicts [ ] party political conflicts [ ] other (specify)

11) How many times did disturbances take place during the period?.....

12) How did it/they affect the household?

13) What shortages do you experience during the course of a year?

a) Cash [ ]
b) Food [ ]
c) Water [ ]
d) Other (specify)

14) What do you do to address such shortages when they occur?

Food security

15) How is feeding catered for in the household?

Household head provides grains and ingredients to wife/wives to cook [ ]
Household head provides grains and wives/wife provide ingredients to cook [ ]
Wives/wife provides grains and ingredient [ ]
Others (specify)

16) How does the household acquire foodstuffs?

a) Farm produce [ ]
b) Purchases [ ]
c) Gifts [ ]
d) Others specify [ ]

17) For how many months of the year is there enough food for the household?
All year round [ ]
9- 11 months [ ]
6-8 months [ ]
3-5 months [ ]
0-2 months [ ]

18) How many meals does the household take daily during the period of enough food?
3 [ ] 2 [ ] 1 [ ]

19) Which are the most difficult months with regard to household feeding? (specify)

20) How do you cope during the difficult periods?

a) Selling of small ruminants to raise money for purchases
b) Selling of fowls to make food purchases
c) Selling cattle to make food purchases
d) Wives assist us in food acquisition
e) Seeking assistance from friends and relations
f) Taking less expensive foods
g) Taking of less preferred foods
h) Taking loans from well to do community members
i) Other (specify)

21) How many meals does the household take daily during the most difficult period?

3 meals [ ], 2 meals [ ], 1 meal [ ].

22) What will you say about the quantity of food per each household member per meal during periods of food scarcity as compared to food secure periods?

The same across board [ ]
Reduced across board [ ]
Same for children but reduced for adults [ ]
Other (specify)

23) What is your daily consumption of the staple cereals (maize etc) in Kgs.

24) How will you generally assess the quality and quantity of the food the household takes?
Very bad [ ] Bad [ ] Okay [ ] Good [ ] Very good [ ]

Section C- Livelihood assets

Human capital

25) How often do members of household fall sick?
Very often [ ], often [ ], less often [ ]

26) What is the commonest ailment which afflicts members of your household?
Malaria [ ]
Respiratory tract ailments [ ]
Convulsion in children [ ]
Diarrhoea [ ]

27) Where do you seek treatment of the ailments?
a) Community clinic/health centre [ ]
b) District hospital [ ]
c) Traditional/spiritual healers [ ]
d) Herbalists [ ]
e) Self medication
f) Other (specify) [ ]

28) How does sickness affect household income?

29) What are the Educational levels (Qualifications) of HH members? How many attained;

a) Primary and KG …….
b) JSS…….
c) SHS……
d) Tertiary……
e) Other (specify)……

30) What skills do household members have?

a) Dressmaking,
b) Hairdressing,
c) Masonry,
d) Carpentry,
e) Driving
f) Other (specify)

31) What will you say about the qualifications and skills levels of household members in terms of enabling household achieve much income?
Adequate [ ]
Very adequate [ ]
Inadequate [ ]
Very inadequate [ ]

Natural Capital

32) Which of the following natural assets does the household have that assist in making a living?
a) Small ruminants
b) Cattle
c) Fowls
d) Economic Trees
e) Fish ponds
f) Land
g) None
h) Other (specify)

33) In what ways do the natural assets assist you in your livelihood?

Physical capital (Assets)

34) What personal household (productive) assets do you have which assist to enhance your income?
a) Hoes
b) Cutlasses
c) Tractors
d) Sewing machines
e) Cars
f) Commercial vehicles
g) Bicycles
h) Cell phones
i) Refrigerator
j) Others (specify)

35) What are the personal consumption items (that do not enhance income) does household own?
a) Radio set
b) TV set
c) Jewellery

d) Other (specify)

36) Type of house

37) Is your house able (strong enough) to give you shelter throughout the year? Yes [] No [ ]

38) If 'No' in 37) why?
a) Roof sometimes ripped off by storm [ ]
b) Rooms sometimes collapse during rainy season [ ]
c) Roof leaks badly during the rains
d) Other specify [ ]

39) What facilities do you have in your house?
a) Electricity
b) Tap water
c) Bulk rainwater storage facility
d) Borehole
e) Pit latrine
f) KVIP
g) Water closet
h) Other (specify) ……

40) If no toilet in the compound where do you attend nature's call?
a) Open defecation ('free range') [ ]
b) Public toilet [ ]
c) Neighbours' toilet [ ]

41) If no water source in your house, where do you (household) draw water?

a) Village dugout [ ]
b) Community borehole [ ]
c) Public tap [ ]
d) Other (specify)

42) What other infrastructure in your community does the household use to facilitate livelihood?

Financial Capital

Savings

43) Do you have savings? Yes [ ] No [ ]

44) If yes in 42) is it individual savings [ ] group savings [ ] both [ ]?

45) Where do you save if 'yes' above?
Commercial banks [ ]

Rural bank [ ]
Susu (mutual savings schemes) [ ]
Other (specify).

46) If yes in 42), have you used your savings within the last year? Yes [ ] No [ ]

47) If 'yes' in 45) how did you use it?
Investment [ ] Consumption [ ]

Credit

48) Do household members have access to credit? Yes [ ] – No [ ]

49) If yes, what are your sources of credit?
a) Moneylenders [ ]
b) Banks [ ]
c) NGOs [ ]
d) Neighbours [ ]
e) Micro credit organisations
f) Other (specify)

50) What is the maximum amount of credit that one can get?.....

51) How do you use the credit if yes? Investment [ ] consumption [ ]

52) What is the repayment Period of credit?.....

Social capital

53) Do you get any assistance from other households and individuals in the community to facilitate your livelihood? Yes [ ] No [ ]

54) If yes, what is the nature of the assistance? Cash [ ] In kind [ ] Both cash and in kind [ ] other specify……

55) In what situations is the assistance offered?
a) Bereavement [ ]
b) Wedding [ ]
c) Out-doorings of babies [ ]
d) When overwhelmed by farm work [ ]
e) Construction of house [ ]
f) Other (specify)

56) How is the assistance important to the HH in making a living?

57) Do community members offer assistance voluntarily [ ] or they feel obliged [ ]?

Section D- Institutions, organizations, Policies and Services

58) What organizations, institutions and associations in the community do household members participate in?

59) What role do they play in them?

60) What services do they render?

61) What benefits do they yield?

62) How are decisions reached in these institutions and organizations?

63) Which of the following broad groups of organisations is the most important to you with regard to solving your livelihood problems?

Governmental/Public organizations [ ]
NGOs [ ]
CBOs [ ]
Private organisations [ ]
Other (Specify)

64) What services does your choice in 63) above render?

65) Do you participate in their decision making? Yes [ ] No [ ]

66) How do you participate, if 'yes' in 65) above

67) Which of the following (norms, cultural practices, rules or regulations) at the community level affect the household **negatively** with regard to household income?
a) Taboo days
b) Brideprice
c) Betrothal of girl children
d) Funerary expenditure

68) How do they affect you?

69) Which of the following (laws, norms, cultural practices, rules or regulations at the community level affect the household **positively** in making a living?
Work groups
Strong kinship relations
Both work groups and kinship relations
Festivals

70) How do they affect you?

Section E- Livelihood Strategies

71) What principal activities do members of household undertake towards earning a living?
a) Food crop farming
b) Foodstuff trading
c) Livestock rearing
d) Butcher
e) Fishing
f) Hunting
g) Blacksmithing
h) Other (specify)

72) If you practise crop farming how do you access land?
a) Communal resource
b) Sharecropping
c) Inheritance
d) Renting
e) Purchasing
f) Other (specify)

73) How do you prepare your land for planting (mode of land preparation)?
a) By Tractor
b) By Hand ploughing
c) By animal traction
d) Zero tillage
e) Other specify

74) Do you use fertilisers? Yes [ ] No [ ]

75) If 'no' why?

I can not afford
Land is fertile enough
I use manure

76) Where do you get farm inputs (eg fertilizers, weedicides, pesticides etc) to purchase if you use them?
From Community
From the urban centre
From both community and urban centre
Other (specify)

77) How do you get labour for your farming activities?
a) Hiring [ ]
b) Family labour [ ]
c) Communal labour [}

78) What is your major source of seed for planting?
Selection from previous harvest [ ]

Purchase of improved seed [ ]
Other Specify

79) Do you get technical advice in your farming activities? Yes [ ] No [ ]

80) If 'yes' in 79) who gives you the advice?
MoFA staff [ ] NGO staff [ ] Fellow farmers [ ] other (specify)

81) How will you describe the acreage you put under cultivation yearly for the past 10 years: Substantially decreased [ ] somewhat decreased [ ] remained stable [ ] somewhat increased [ ] substantially increased [ ]

82) Why this state of affairs (the response chosen above)?

83) Which of the following crops is your priority crop?
Maize
Yam
Rice
Millet
Sorghum
Other (specify)

84) Why is it your priority crop?
a) Staple crop
b) That is what the soil is suitable for
c) It is less expensive to cultivate
d) Other specify

85) Which of these other crops do you cultivate in addition to your priority crop?
Groundnuts
Nerri
Soya beans
Cowpeas
Cotton
Pigeon pea
Okra
Pepper
Others (specify)

86) Why do cultivate these other crops?
a) They are cash crops we can sell to make income
b) They don't require a lot of chemical inputs
c) To avoid risks of total crop failure
d) Other (specify)

87) How will you assess the trend of crop yields in general for the past ten years? Substantially decreased [ ] somewhat decreased [ ] remained stable [ ] somewhat increased [ ] substantially increased [ ] no trend [ ]

88) What could have contributed to that crop yield situation (state of affairs)?

89) How do you store your farm produce?

90) What other activities do you (household members) undertake as a way of earning income?
a) Shea nut picking
b) Sheabutter extraction
c) Groundnut oil extraction and 'kulikuli' (cake) making
d) Charcoal making
e) Petty trading
f) Other (specify)

Section F- Livelihood outcomes

91) What is the **major reason** why you undertake all these livelihood activities mentioned above?

To be able to get food to feed the household all year round [ ]
To get money to educate the children [ ]
To get money to take care of health needs of household [ ]
To get money to invest in trading [ ]
To get money to expand my farming activities [ ]
Other (specify)

92) Which of the following facilities and services do you require **most** to assist you in attaining your aim?

Affordable farm inputs [ ]
Affordable tractor services [ ]
Access to affordable credit [ ]
High yielding cultivars [ ]
Drought resistant varieties of crops [ ]
.
93) Who should provide this assistance?
Government [ ]
NGOs [ ]
Community based organisations/associations [ ]
Other (specify)

Thank you.

Appendix B: Issues Discussed with Focus Groups

- Cattle ownership
- Sanitation (building of toilets in the house)
- Land
- Migration
- Funerary Expenditure
- District Assembly Substructures