

RURAL LIVELIHOODS DIVERSITY: COPING STRATEGIES IN WA WEST DISTRICT IN NORTHERN GHANA

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Abstract

It is evidence that for several years rural communities in Northern Ghana have been confronted with single rainfall season which is also unpredictable. The poor weather condition has cumulatively contributed to the high incidence of poverty among households. In the midst of this, the indigenes have stayed and persevered through other diversified means of survival with little or no external support. The study therefore seeks to identify traditional and diversified livelihoods coping mechanisms that these rural families have adopted to at least secure them, minimal food and other socio-economic security/assets. Participatory Rapid Appraisal (PRA) techniques were mostly used to collect data. Some of the techniques used were group discussions, wealth ranking, structured and unstructured questionnaires, and observation. The data analysis employed both qualitative and quantitative approaches to examine the key issues identified. The study reveals that, most communities are living in difficult condition but are resilient to make ends meet. They have done this through diversification of their livelihood portfolios which include diversified crop cultivation, livestock rearing, dry season gardening, petty trading and especially out-migrant remittances. This strategy adopted also enable them cope with other competing demands in terms of food, healthcare, education, farming and shelter among others. The study observed that farmers/households will do better if they are incentivized (inputs and extension service) to boost subsistence farming, diversify more into income generating activities (animal rearing).

Keywords: Livelihood diversity, coping strategies, food security and Northern Ghana

Background

There is the perception that the majority of Ghanaians who live in squalor and misery are rural people. Indeed rural poverty has become so serious that if care is not taken the impact of it will perpetually and negatively affect growth and development of children who are the future leaders. This development is especially precarious in the savannah regions of Ghana due to the absence of deliberate pragmatic government policy initiatives to address poverty. According to Coulembe, et, al. (2007: 10) “The evidence [of poverty] shows that the northern savannah area, which is by far the poorest of the ecological zones, has been left behind in the national reduction in poverty, even though poverty was smaller in 2005/06 than in 1991/92. The poverty phenomenon has been exacerbated as a result of the cumulative effects of drought and floods. The combined occurrence of the drought and flood made the three northern regions susceptible to famine. This was the situation during the year 2007 and 2008. In the midst of the entire poverty nightmare, the rural folks have been able to absorb the effects though with some costs in terms of loss of human lives and personal assets. The objectives of this paper therefore is first, to examine the livelihood diversification/portfolios as a survival strategy for rural households in northern Ghana, the cultural dynamics on rural livelihood coping strategies and third, to advance the policy understanding of diverse rural livelihoods.

Research Approach

Participatory Rural Appraisal (PRA) tools were used to capture information on the livelihood portfolios and security, coping strategies, assets and capabilities of households. Wealth ranking was applied in identifying the most affected. This tool was used to define criteria used by local communities for identifying the most vulnerable for undertaking mitigation measures at the individual homestead, and community level. A number of focus group discussions and platforms were used in gathering information. In depth data was generated on crop and livestock production, production levels and size of holdings, income and expenditure, gender and land accessibility/holdings, taboos/culture and food security. Other methods include the use of structured and semi structured questionnaires and key informant interviews to capture a wide range of data on the issues of livelihood portfolios, the most vulnerable in changing weather conditions and how people are differently affected. These triangulation data collection approaches proved useful in unravelling critical issues that could never have been obtained through the use of any one data collection instrument. Major sources of secondary data included documentary review.

Data was analyzed qualitatively and quantitatively. In the qualitative data collection process, field notes captured on daily basis on historical

events, conversations, interviews and stories on livelihoods issues during group discussions and interactions with specialized groups were analyzed after the day's work. The rationale was to keep track of important events/ issues that cropped up daily and prepare adequately for the next day. With the quantitative analysis, simple quantitative operations from questionnaires were tabulated and processed using SPSS. The use of graphs, charts, frequencies, percentiles, and averages attracted statistical considerations using SPSS.

Theoretical Underpinnings

Introduction

In theorizing the intellectual precision and relevance of the study, we have reviewed concepts and theories that are relevant to the entire work taking into consideration the thoughts and debate put forward by scholars on livelihoods. Main concepts such as livelihoods, livelihood coping strategies, livelihood diversity and food security have been reviewed.

Livelihoods

Several conceptual frameworks have been put out there as a contribution to the understanding of rural livelihood. It is so because the concept “livelihood” is central in poverty alleviation and rural development discourse within the context of the individuals, households and social groups who are more vulnerable and are trying to make a living in difficult conditions and with limited assets. The approach provides a framework for understanding the opportunities and assets available to poor people and the sources of their vulnerability, as well as the effects of external organizations, processes and policies on such vulnerabilities (De Haan, 2000). Indeed, diverse opinions have attempted to explain the meaning and ramifications of livelihood within the context of vulnerability but Chambers and Conway (1992) were among the first to give a scholarly definition of livelihood. However, this study adopts Scoones' definition, which is a modified version of Chambers and Conway's as it captures most of the essential features of the model. Scoones (1998) explains that “a livelihood comprises the capabilities, assets, (including both material and social resources) and activities required as a means of living. A livelihood is sustainable when it can cope with, and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base”

Chambers and Conway (1992:41) argued that the ability of households to have access to sustainable livelihood strongly depends on whether or not they have access to five forms of capital assets, that is natural, physical, human, social and financial assets. It is important to add that in many developing countries and for that matter northern Ghana access to the

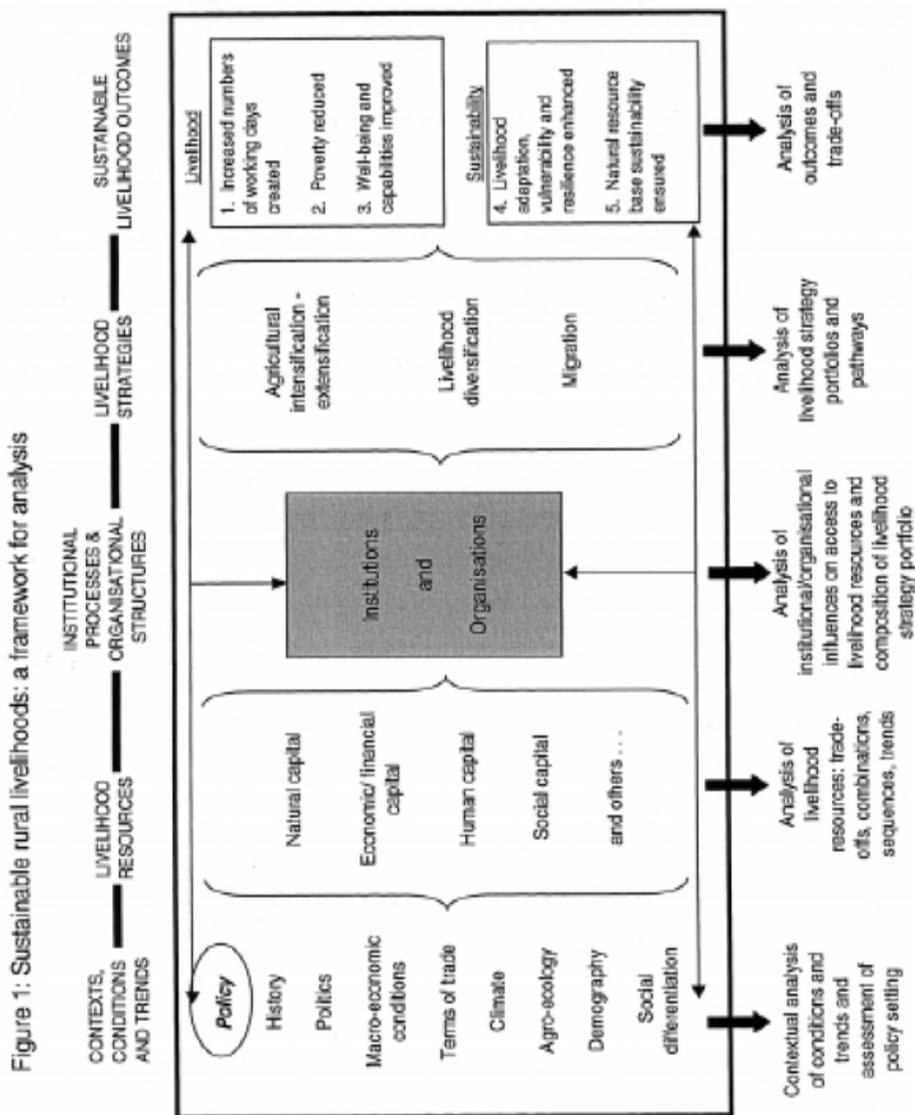
five forms of capital assets is problematic due to challenged environmental factors and lack of institutional policy support. The idea of a livelihood framework as a tool for analysis is simply to capture the main elements, which comprise the complex livelihoods of people at a given point in time, as well as the course and dynamics of change in livelihoods (Carney, 1998). According to Barrett et al., (2001), the basic elements of most livelihood frameworks are: livelihood resources: what people have, variously referred to as stocks and stores, assets and capital (both tangible and intangible); livelihood strategies: what people do (e.g. agriculture, wage labour, migration); livelihood outcomes: what goals they are pursuing, and the living that results from their activities. It is however important to note that the sustainability of disaster victims' livelihood will depend on their individual and collective levels of endowments and entitlements.

Krantz (2001:96) also asserts that a key point of the sustainable livelihood approach is that it allows the consideration of various factors and processes, which either hinder or enhance poor people's ability to make a living in an economically and socially sustainable manner. Hugo et al (2001) on the other hand, assert that the sustainable livelihood approach is an analytical framework, which seeks to improve our understanding of how people use the resources at their disposal to make a livelihood

Carney (1998) pointed out that these livelihood strategies, however, will differ with regard to whether people have to deal with gradual changes or crises.

The common theme that runs through all these analyses is that the sustainable livelihood approach can be used as an analytical framework to identify and assess internal and external factors that affect the household's socio-economic survival strategies. Also the extent to which a community relies on each one of the possible alternative livelihood sources varies according to its portfolio of assets (Dugbazah, 2007). In sum the approach ought to help vulnerable groups withstand shocks and make useful and enhanced use of the available alternative local resources.

It is important to note that the success of all livelihood strategies depends on the systematic policy direction from the institutional levels to the individual and also the level of synergy between the formal and informal institutions as demonstrated in figure 1.



Source: Scoones (1998).

Livelihood Diversity (LD)

It is a strategic process of diversifying the livelihood sources of households in order to be self-sustaining and this approach is more useful in rural communities in developing countries. Ellis (1998) however, is of the view that “LD refers to divers portfolios of activities that households engage in over a long period of time...”. A household may wish to diversify to cope with an unexpected shock *by* engaging in a number of activities that generate other livelihood resources. Also, Carney (1998) puts it that “the notion of

livelihood diversity is based on a framework that considers the activities of the rural poor as being determined by their portfolio of assets, including social, human, financial, natural and physical capital”. But it is important to note that most rural community livelihood diversities in northern Ghana generally cannot fit into the requirements of Carney’s framework because their portfolio assets are simply problematic as a result of constant shock they face due to floods, drought, fire, conflicts or a combination of these. Again, Ellis (1998) thinks diversification does not have an equalizing effect on rural incomes overall, as families that are relatively better-off are typically more able to diversify their livelihoods than poorer rural families (ibid, 1998). But in general rural communities in northern Ghana often diversify their rudimentary livelihood sources due to all time unfavorable weather conditions and absence of non-farm employment. Rationally “In areas of greater risk household strategies are expected to be more diversified as a mean to minimize possible shocks from negative climate events....” (Dunn et al, 1996).

In the past it has often been assumed that increased farm productivity would create more non-farm income earning opportunities in the rural economy via linkage effects (Momsen, 1991). However, this assumption is no longer tenable for many poor rural families, as it is obvious that farming on its own is unable to provide a sufficient means of survival (Potts, 2000). Hence, households in rural Ghanaian communities diversify their livelihood activities to include farming, livestock rearing, hunting, charcoal burning, migration, sand winning, “child trading” and others. Even of late dirge singers move from one funeral house to another to sing for money.

Livelihood Coping Strategies

Livelihood (coping) strategies are the range and combination of activities and choices that households opt for in order to survive. They encompasses not only activities that generate income, but many other kinds of choices, including cultural and social choices, that come together to make up the primary occupation of a household (Ellis 1998). These strategic options may include short term considerations such as ways of earning a living, coping with shocks and managing risk, as well as longer-term aspirations for the future of the family. “People adopt coping strategies in response to livelihood crises. Slowly, the system recovers and households employ a new adapting strategy composed of elements from the former adapting strategy and the coping strategy to develop a new portfolio of livelihood activities” (Benedikt, 2002.).

Livelihood strategies can be positive, helping households become more resilient and less vulnerable, or negative when they result in the further erosion and decrease of the asset base. Elli (1999) asserts that the strategies

are also “.... composed of a range of activities, both the access to assets and the use to which they can be put are mediated by social factors (social relations, institutions, organizations) and by exogenous trends (e.g. economic trends) and shocks (drought, disease, floods, pests).” This subject has become central to development practice in recent years and has attracted centre stage in the development discourse. In the study communities apart from the tangible assets there are some intangibles in the form of social capital that have become a reliable source of coping strategies and many have survived through that support.

Food Security

"A household is food secure when it has access to the food needed for a healthy life for all its members (adequate in terms of quality, quantity and culturally acceptable), and when it is not at undue risk of losing such access" (SCN News, Number 07. 1991, p. 6). Some salient features of this concept need a little elaboration. In the study area households have diversity of food security portfolios but the quality and quantity of that cannot be guaranteed because from experience over the years the vagaries of the weather and ill health of the human capital and livestock have often exposed them to food security risk. Be as it may, Amartya Sen rather thinks otherwise. Sen's entitlement theory of famine (Sen, 1981) forms the conceptual basis of all agencies' (including the people in northern Ghana) approaches to assessing food security. Sen explained that "famines occur not because there is not enough food, but because people do not have *access* to enough food. Of course, the availability of food near to the household is a prerequisite of food security. Availability is influenced by factors such as a community's proximity to centres of production and supply, or by market forces, restrictions on trade and international policies that affect food supplies. All of these are key to food-security analysis".

Findings and Discussion

Household Characteristics

The composition and structure of households in the study areas are a reflection of the social formation of the societies. Unlike the typical nuclear family household one finds in larger settlements, the households in the study communities are still traditional in structure and often make room for persons outside the nuclear or immediate family. The distribution of households of different sizes is depicted in table 1. Only 22.5% of the households covered by the study contained 6 or less people. The existence of larger households reflects long established households, mostly polygamous families, with the traditional belief in large family sizes and who also consider children as livelihood assets.

Table 1: Distribution of Households by Size and Locality

Locality	Household Size						Total	Av. HH Size
	1-2	3-4	5-6	7-8	9-10	Above 10		
Gbaaliwob	1	2	1	3	1	2	10	9.0
Dabo	0	1	1	2	1	5	10	10.0
Tokali	0	1	0	3	2	4	10	9.5
Ga	0	0	2	3	0	5	10	10.5
Total	1	4	4	11	4	16	40	-
Percentage	2.5	10.0	10.0	27.5	10.0	40.0	100	

Source: Field survey 2012

Male household headship is a tradition in all the study communities. Of the households interviewed only 7 (17.5%) had female heads. Most (5) of the female household heads were however, temporarily heads owing to male out-migration in search of employment or the separation of the household members due to relocation, where some male household heads leave to settle in other parts of the same community. It was however observed that all female headed households contained more than 10 people. Education not only diversifies and broadens one's perspective on livelihood issues, but also opens up access to greater opportunities for improvement in one's living conditions. The level of education of household heads affects productive behaviours, the health of children and general standard of living at the household level. However, the households' interview conducted indicated that in all, none of the household heads had ever entered a post secondary institution, 20% had received primary education while 18.8% and 5% had schooled up to Middle School/Junior Secondary School (JSS) and Senior Secondary School (SSS) levels respectively.

Table 2: Highest Educational Attainment of Household Head by Locality

Locality	Level of Education			TOTAL
	None	Primary	Middle/JSS	
Gbaaliwob	9	1	0	10
Dabo	4	2	4	10
Tokali	7	3	0	10
Ga	8	2	0	10
Total	28	8	4	40
Percentage	70.0	20.0	10.0	100

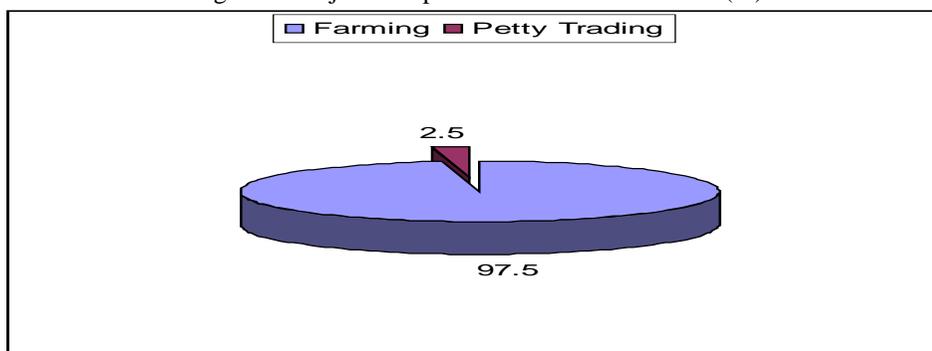
Source: field survey, 2012

The share of illiterates and those without middle/JSS and secondary education was far higher in the Wa West District. This indicates the differences that exist in access to education across northern Ghana particularly in the Upper West Region.

An important predisposing factor of livelihood, which is directly related to income earning, is the type of economic venture one engages in.

The level of one’s income has a direct effect on livelihood. Employment opportunities in the study areas are limited to subsistence agriculture. The occupational distribution of the household heads is given in the pie chart in Figure 1 below.

Figure 1: Major Occupations of household Heads (%)



Only 2 (1 male, 1 female) out of the 40 household heads interviewed engage in petty trading, and therefore earn some income throughout the year. Since farming is mainly carried out for 5 months, 97.5% of the household heads remain unemployed for most parts of the year. A further indication of the lack of economic opportunities in the study communities is the fact that 59% of the respondents do not have any other income earning avenues besides farming in the main cropping season (table 3).

Table 3: Major and Minor Occupations.

Major Occupation	Minor Occupation (%)					Total (N)
	Off-season farming	Petty trading	Charcoal production	Pito brewing	None	
Farming	17.2	18.8	1.6	3.0	59.4	100 (38)
Petty Trading	0	0	0	0	100	100 (2)

Source: field survey, 2012

The main off-season farming, which is the cultivation of vegetables in small gardens, is the dominant (15%) economic activity during the dry season. However, off-season farming is largely dependent on the availability of water and as such it is done mainly in Ga which has a dam with enough water. In other communities where there are no dams, off-season farms are watered with borehole water. It was also evident that the distribution of minor occupations across the study communities shows the availability of income earning opportunities in relatively larger communities.

Household Assets

A household’s holdings determine largely its productive capacity and hence standard of living. In the study communities, where food crop farming

is the major economic activity, access to land is critical for survival. These communities are a homogeneous unit in matters of land tenure and landownership, as the land always belongs to the family and households are given specific plots to farm on. Traditionally, land acquisition is through inheritance. Across the study communities, as it is in all parts of northern Ghana, women do not own land. However, a woman may obtain a plot of land from her husband for cultivation. The least family land for the households covered in this study was 10 acres with 1 acre being the smallest plot available for farming by a household. However, the spatial distribution of family lands indicate that families located in smaller and remote communities usually have large tracks of land, some with unknown sizes, than their counterparts in larger and opened areas. The observation made was that farmlands per custom, were not sold but given to strangers to farm while they maintained the title deed. Today however, as families struggles to cater for their members (livelihood coping) amidst insufficient farm yields, selling of land is a common thing in all communities in northern Ghana.

In northern Ghana, livestock are major family assets. Cattle in particular have traditionally been used as a measure of a family's wealth and source of livelihood. The number of cattle, sheep and goats a household possesses determines the size of their assets. But more than half of the households studied did not have cattle. The outcome indicates that there were 166 cows belonging to the 16 households that had cattle, giving an estimated average of 10 cows per household. Table 4 shows households' ownership of cattle by communities. Only 4 of the households had more than 15 cows, an indication of extreme concentration of wealth typical of many Ghanaian communities. What was surprising is the fact that one (1) household in Dabo had about 200 cows.

Table 4: Number of Cows Owned by Households by According to Locality.

Locality	Number of cows (No. of households)						
	0	1 – 5	6 - 10	11 – 15	16 – 20	21 - 25	26+
Gbaaliwob	5	4	0	1	0	0	0
Dabo	8	0	0	0	0	1	0
Tokali	4	3	3	0	0	0	0
Ga	7	2	0	1	0	0	0
Total	24	9	3	2	1	1	0

Source: field survey, 2012

Similarly, more of the households did not have sheep. The total number of sheep for the 13 households was a miserable 38, giving an estimated average of 3 sheep per household.

However, about 148 goats were accounted for belonging to 34 households with an average number of 4 goats per household. Only 8 of the households owned more than 10 goats each.

Crop Production

Food crops farming are mostly embarked on a smaller scale. Crops grown are mostly staple crops like millet, maize, groundnuts, guinea corn, yams, and cowpea and in some cases, rice as well as vegetables of all kinds. Soya bean is the only cash crop grown in some of the communities. The primary aim of crop cultivation is for consumption and both men and women engage in the cultivation of various foodstuffs. Yam cultivation is however, a purely masculine activity given its tedious nature. On the other hand, females dominate in the cultivation of vegetables.

Table 5: Ranking of Crops Cultivated

Crop	Percentage	Ranking
Yams	88.8	1 st
Groundnuts	86.5	2 nd
Maize	85.0	3 rd
Guinea corn	66.3	4 th
Vegetables	53.8	5 th
Rice	42.2	6 th
Cowpea	40.0	7 th
Millet	30.0	8 th

Source: field survey, 2012

As already indicated, the main reason for selecting a crop to cultivate is to get food for the household. Except rice, households also do sell part of the yields to take care of other family needs besides food. Groundnut is the only crop that more households said they produce to sell. The hoe remains the most important farming implement across the study communities. Tractor services are not available so bullocks are used for ploughing in all the communities. Farmers, however, complained that bullock ploughing has become expensive these days because of the shortage of bulls.

Livestock Rearing

Other animals reared in addition to cattle, sheep and goats are fowls, guinea fowls and pigs. Fowls are the most common and easiest livestock reared in northern Ghana. But surprisingly, 22.5% of the households did not have any fowls (table 6). The average number of fowls per household was 6 indicating a low level of fowls' ownership in the communities.

Table 6: Households' Ownership of Fowls by Locality.

Community	Number of fowls (No. of households)							
	0	1 – 5	6 - 10	11 – 15	16 – 20	21 – 25	26 - 30	31 - 35
Gbaaliwob	2	2	6	0	0	0	0	0
Dabo	3	1	3	0	2	0	0	1
Tokali	4	1	5	0	0	0	0	0
Ga	0	3	3	0	0	2	2	0
Total	9	7	17	0	2	2	2	1

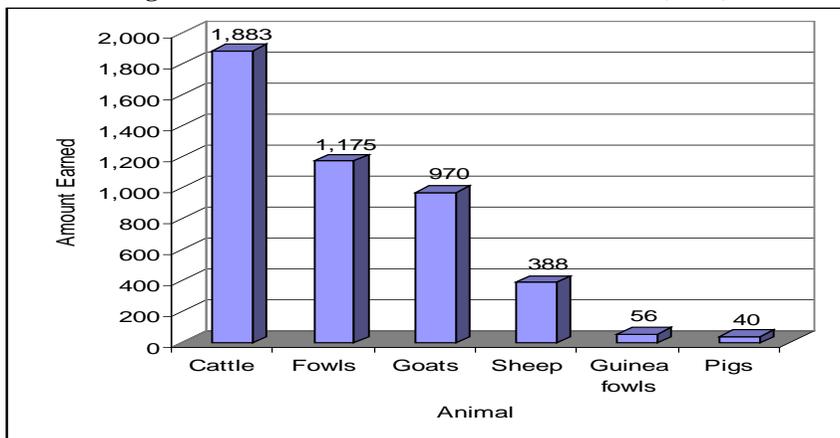
Source: Field survey, 2012

Again, households’ ownership of guinea fowls was even far lower than that of fowls. As many as 32 (80%) of the households did not own fowls. Besides, livestock are reared for several purposes. Home consumption does not appear to be a major reason of livestock production but livestock are sold during the lean season to buy additional foodstuffs. They are also sold to cater for other family basic needs, such as building materials, health care and children education. Cows, sheep and goats particularly, are also important for the performance of funerals, naming ceremonies and other traditional/religious sacrifices. Fowls and guinea fowls are given as gifts to friends during particular occasions, such as childbirth, and for preparing meals for important visitors..

Household Income

The estimated total income for the households studied was GH¢18,176.40.00, giving an average annual income of GH¢454.41. It was however noted that some households could not earn this annual average income. Sale of foodstuffs is the most important source of household income in all the communities studied representing 85% of the total earnings, followed by livestock selling (12.4%) and petty trading. Various amounts are earned from the sale of the different types of foodstuffs across the studied communities. However, groundnuts and maize are the most important crops regarding their contributions to the household income of 23.6% and 23% respectively of the total income from the sale of foodstuffs in 2012. Cattle are the most important source of household income from the sale of livestock. Cattle rearing is however limited to 16 of the households covered in the study, implying that earnings from animal rearing is not widespread. Earnings from the sale of fowls are second to cattle regarding the total income from the sale of animals as shown in figure 2.

Figure 2: Income from Sale of Animals in 2012 (GH¢).



Source: Field survey, 2012

It was observed that much of the income that was generated from farm products and livestock was for men/husbands who determined how to spend it. Many of the women made income through basketry and other minor trading including fuel wood.

Household Expenditure

The expenditure of households showed that the estimated total spending for all the communities studied in 2012 was GH¢38,363.00. The average household expenditure was GH¢984.00. While the reported annual household expenditure may be an exaggeration of actual spending, it is generally the case that households are not able to earn enough on their own to meet their budget for the year. An additional source of household income is remittances. The expenditure centers include the following major items on table 7;

Table 7: Total and Average Household Expenditures by Items.

Item	Total Expenditure (GH¢)	Average Expenditure (GH¢)
Food	11,837.50	295.94
Agriculture inputs	7,263.00	181.58
Funerals	4,422.50	110.56
Health care	4,313.00	107.83
Children's schooling	3,107.50	77.69
Clothing	2,276.00	56.90
Energy (kerosene, etc.)	1,242.50	31.10
Gift/donations	827.50	20.69
Alcohol	686.00	17.15
Payment of water levies	280.00	7.00
Total	38,363.00	984.00

Source: field survey, 2012

From the income and expenditure information presented above, it is not surprising that the level of savings is very low across the studied communities. Only 3 of the households interviewed said they saved GH¢1,000.00, GH¢450.00 and GH¢84.00 from their earnings in 2012. Awareness of saving institutions was, however, high (78%) among the respondents. Of all the expenditure items discussed, acquiring inputs for farming has been the priority of all households. Households usually sell animals or gather and sell shea nuts to generate income to meet their farming needs.

As it is in most cross-sectional studies of this nature, in which respondents make estimations of their annual incomes and expenditures, accurate figures are hard to come by, and expenditure usually exceeds income. Moreover, in rural communities, such as those covered by the study, people do not readily disclose their actual earnings. Income and expenditure estimates were mostly done by proxy.

Perceived Effects of Taboos and Cultural Practices on Food Security

Several negative taboos and belief systems were mentioned by respondents as negatively affecting food production, which are all related directly to rainfall availability. These are:

- ◆ Having sex in the open or on the farm
- ◆ Not performing sacrifices before women harvest shea nuts
- ◆ Fighting on the farm
- ◆ Women going to the stream during menstruation
- ◆ Washing in the rain etc.

These practices were generally believed to cause low rainfall, low crop yield and hence hunger. It came out that the practices were on the ascendency.

Culturally, funeral performance, an issue which became clear during focus group discussions is highly upheld in all the communities. In addition to money spent on funerals, food and animals are used. In all the communities, funerals are performed during the harvest period when food is generally available. It usually involves sacrificing of cows, sheep and goats. It is therefore not surprising that funeral performance was perceived by many people as being a major cause of food wastage. In mentioning the socio-cultural factors that wastes food, the following responses were gathered: funerals (54.2%), misuse of food during harvest (15.4%), festivals (13.6%), naming ceremonies (7.0%), marriage rites (4.8%), idol worship (3.4%), and destruction of crops by cattle (1.6%). Such culturally determined expenditure affects their livelihood portfolios. However, these communities prepare to go hungry in or to reverently celebrate the dead and meet other socio-cultural needs.

Conclusion and Recommendations

Livelihoods in the communities studied are often fragile and formed around subsistence crop and animal production. There are also comparatively wide gender gaps in access to livelihood assets. Agriculture-related risk can be categorized into:

a. Natural Causes of Vulnerability;

- ◆ Bad climate i.e. floods; insufficient rainfall affects the livelihood sources of the rural folks who are majorly farmers.
- ◆ Poor farm soils – negative nutrient balances every year on account of high population density and poor farming practices

b. National Policies on Farming;

- ◆ Lifting subsidies to agriculture – This makes it impossible for farmers and pastoralists to have easy and affordable access to farm inputs and extension services.
- ◆ Too few of farmers in the rural communities in Ghana particularly in the Wa West District have technical knowledge and financial means to overcome some of the risks.

Other risks that generally impact adversely on household livelihood diversification and securities are:

- ◆ Health security: unavailability of health care infrastructure and lack of income to secure health care, which is directly linked to lack of health insurance.
- ◆ Low level of education: this also negatively affects health care, nutrition and general livelihood diversification strategies.
- ◆ Weak social safety networks' caused by general poverty and youth out-migration.
- ◆ Much waste of livelihood assets on socio-cultural activities such as festivals, funerals and marriage ceremonies.

These factors affect:

- ◆ Households' ability to produce food and procure income amidst new challenges.
- ◆ Communities' ability to sustain social safety nets that could be used to relieve stress.

Notwithstanding of the above, households' responses to these developments have often taken the form of livelihood diversification between activities and across space, putting a premium on access to information and social networks, as well as to the state. Less reliable coping strategies adapted include:

- ◆ Ineffective off-season farming activities around dam sites, rearing and fishing.
- ◆ Compromising critical land conservation and soil protection for survival
- ◆ Sale of household assets including cattle and land
- ◆ Gathering and selling of wild shea nuts
- ◆ Reduction in quantity, quality/variety of food resulting in adult and child malnutrition.

In order to ensure that rural communities in northern Ghana have a more diversified and secured livelihoods there is the need to target them with poverty alleviation strategies in the following areas:

- i. Providing incentives (in the form of farm inputs) at the beginning of the farming season to strengthen subsistence production and marketing.
- ii. Assisting individuals and groups to identify real opportunities for diversifying into income generating activities on value addition shea butter processing, animal rearing and off-season farming.
- iii. Motivating rural farming households through training and education to analyze their situations and find solutions to those they can implement by themselves.
- iv. Encourage traditional institutions to embark on cultural transformation towards the avoidance of resource waste during ceremonial/ritual occasions.

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