

UNIVERSITY OF CAPE COAST

NON-FARM LIVELIHOOD DIVERSIFICATION IN SELECTED  
RURAL AND PERI-URBAN COMMUNITIES IN THE SUNYANI  
WEST DISTRICT

KOFI YEBOAH ASARE

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AND PERI-URBAN COMMUNITIES IN THE SUNYANI WEST DISTRICT

BY

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APRIL, 2018

DECLARATION

**Candidate's Declaration**

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature ..... Date: .....

Name:.....

**Supervisor's Declaration**

We hereby declare that the preparation and presentation of this thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature ..... Date .....

Name: .....

Co-Supervisor's Signature.....Date .....

Name:.....

## ABSTRACT

Non-farm activities are widespread and thought of as an important source of income and employment for some rural and peri-urban dwellers. This study sought to investigate rural non-farm livelihood diversification among farmers in the Sunyani West District. Cross-sectional survey design was used and data were collected from 251 farmers for the purpose of analysis. An interview schedule and FGD guide were used for collection of the data. The data were analyzed with descriptive statistics, binary logistic regression, independent sample t-test, Chi-square test and one-way analysis of variance. The study pointed out that the non-farm sector was heterogeneous and involved several activities with trading being the most prominent. Although farmers predominantly pursue agriculture as their livelihood strategy, they also pursue non-farm livelihood activities due to push rather than pull factors. Age, membership of association, farm income and market access significantly influences non-farm livelihood diversification. There was higher share of income for farmers who diversified into non-farm livelihood activities. In addition, income from this sector was mainly used for consumption and payment of bills. Non-farm activities are a major source of self-employment but not paid-employment. Inadequate access to credit and low business opportunities were major constraints that impede the development of the non-farm sector in the district. In view of this, it is recommended that the District Assembly must make budgetary allocations to support programmes that facilitate the non-farm sector and also give rural and peri-urban entrepreneurs tax rebate to support their businesses. Besides, the study recommends that banking and micro-finance institutions must design special credit programmes for rural entrepreneurs.

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DEDICATION

To my daughter, Elsa

TABLE OF CONTENTS

	Page
DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
DEDICATION	v
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ACRONYMS	xii
CHAPTER ONE: INTRODUCTION	
Background of the Study	1
Statement of the Problem	7
Objectives of the Study	9
Research Questions	9
Significance of the Study	10
Delimitation	11
Limitations of the Study	11
Definition of Terms	12
Organisation of the Study	13
CHAPTER TWO: REVIEW OF RELATED LITERATURE	
Introduction	14
Theoretical Review	14
Sustainable Livelihood Approach	20

Sustainable Livelihood Framework	21
Livelihood Assets	23
Institutional Context	24
Vulnerability Context	24
Livelihood Strategies	25
Livelihood Outcomes	25
Livelihood Diversification	26
Evolution and Forms of Livelihood Diversification	27
Non-farm Activities	28
Composition of the Non-farm Economy	29
Features of Non-farm Enterprises	30
Motives for Non-farm Livelihood Diversification	33
Non-farm Livelihood Diversification and Self-employment	36
Importance of Non-farm Livelihood Diversification	38
Constraints of Non-farm Livelihood Diversification	40
Empirical Review	42
Lessons Learnt	50
Conceptual Framework	51
Chapter Summary	54
<b>CHAPTER THREE: RESEARCH METHODS</b>	
Introduction	56
Research Design	56
Study Area	58



Target Population	61
Sample and Sampling Procedure	61
Data Collection Instruments	62
Pre-test	64
Field Work	64
Ethical Issues	65
Data Processing and Analysis	65
Chapter Summary	66
CHAPTER FOUR: RESULTS AND DISCUSSION	
Introduction	67
Background Characteristics of Respondents	67
Non-farm Livelihood Strategies in the District	71
Primary Occupation	74
Factors Influencing Non-farm Livelihood Diversification	76
Determinants of Non-farm Livelihood Diversification	80
Outcomes of Non-farm Livelihood Diversification	92
Income Outcomes	92
Use of Non-farm Income	96
Employment Outcomes	98
Constraints to Non-farm Livelihood Diversification	100
Summary	106

CHAPTER FIVE: SUMMARY, CONCLUSIONS  
AND RECOMMENDATIONS

Introduction	107
Summary	107
Major Findings of the Study	108
Conclusions	112
Recommendations	114
Suggestions for Further Research	115
REFERENCES	116
APPENDICES	
APPENDIX A: Statistical Tables	138
APPENDIX B: Interview Schedule	141
APPENDIX C: Focus Group Discussion Guide	148

LIST OF TABLES

Table		Page
1	Examples of Livelihood Assets	23
2	Types and Sex Composition of Non-farm Activities	30
3	Distribution of Sample by Community and Location	62
4	Sex of Respondents by Household Head	68
5	Educational Characteristics by Sex	70
6	Distribution of Non-farm Activities by Sex	72
7	Primary Occupation by Sex	75
8	Motive for Non-farm Diversification by Location	77
9	Reasons for Non-farm Diversification	78
10	Test of Collinearity	83
11	Model Summary for Binary Logistic Regression	85
12	Variables in the Binary Logistic Regression Equation	86
13	Use of Non-farm Income	97
14	Non-farm Income Crucial to Survival	98
15	Non-farm Employment by Location	99
16	Constraints to Non-farm Livelihood Diversification	102

## LIST OF FIGURES

Figure		Page
1	Sustainable Livelihood Framework	22
2	Conceptual Framework	53
3	Map of the Sunyani West District	60
4	Normal P-P Plot	84

LIST OF ACRONYMS

BAC	Business Advisory Center
DFID	Department for International Development
FGD	Focus Group Discussion
FOA	Food and Agriculture Organisation
GLSS	Ghana Living Standard Survey
GoG	Government of Ghana
GSS	Ghana Statistical Service
GRATIS	Ghana Regional Appropriate Technology and Industrial Service
ICT	Information Communication Technology
IFAD	International Fund for Agriculture Development
MASLOC	Microfinance and Small Loans Centre
NBSSI	National Board for Small Scale Industries
REP	Rural Enterprise Project
SLA	Sustainable Livelihood Approach
SPSS	Statistical Product and Service Solutions
SWDA	Sunyani West District Assembly

## CHAPTER ONE

### INTRODUCTION

#### **Background to the Study**

Rural households in developing countries have been viewed as if they were solely engaged in agriculture (Lanjouw & Shariff, 2004). Available literature suggests that over two-thirds of the World's poorest people are located in rural areas and are engaged in subsistence agriculture as their main source of employment and income (Djurfeldt, Larsson, Holmquist, Jirstrom & Andersson, 2008; Todaro & Smith, 2009). However, rural development literature posits that rural households make up their livelihood based on complex strategies and not just agricultural production (Kilic, Carletto, Miluka & Savastano, 2009). The livelihood structures in rural areas in developing countries have exhibited tremendous changes in the last few decades (Jan, Khattak, Khan, Hayat & Rahim, 2012).

While efforts to increase agricultural productivity is essential for food security and poverty reduction campaign (Tobin, 2009), non-farm livelihood diversification has been put forward as an equally important strategy for addressing rural poverty as well as in reducing vulnerability of poor people to livelihood insecurities (Ellis, 1998; Ellis & Allison, 2004; Khatun & Roy, 2012; Start, 2001). According to Swift, Hamilton, Devereux and Maxwell (2001), livelihood diversification remains the most effective weapon for addressing the seemingly high incidence of food insecurity and poverty across the globe. In Africa, it is viewed as a remedy to the failure of agriculture to provide sufficient

livelihood for a large number of rural dwellers (Bryceson & Bank, 2000). This could be deduced from the fact that with livelihood diversification, rural households, the majority of whom depend on subsistence farming are able to improve on their income and maximize consumption (Green, 2012).

Increasing the number of income sources is recognised as an important strategy for minimising risk and poverty among rural dwellers (Devereux & Maxwell 2001; Ellis 2000; Hussein & Nelson 1998; Møller 1998; Netting 1993; Pedersen, 1999). Diversification remains crucial for tackling rural poverty irrespective of the form it may take; either farm-based or non-farm or both. However, according to Warren (2002), in the context of rural development, non-farm enterprises' channel to diversification is preferred due to its potential for stimulating rural economic growth. In Sub Sahara Africa, about 30-50 percent of rural households earn income from non-farm diversification (Adams, 2001). In South Asia, research has proven that diversifying livelihoods to non-farm activities remains fundamental to the eradication of poverty amongst smallholder farmers (FAO & World Bank, 2001). In India for instance, unproductive farmlands have induced households to look out for non-farm activities to support their livelihoods (Hiremath, 2007). Non-farm activities have therefore become an important source of incomes and employment for the rural folks (David, 2010) especially for women (Ajani, 2012).

Scoones (1998) considers livelihood diversification as a choice to invest in order to accumulate assets or activities aimed at coping with temporal or permanent livelihood adversity and could be on-farm or non-farm. Diversification

in non-farm enterprises by households minimizes the effects of exposure of their livelihoods to extreme effects like variations in the weather, diseases, price fluctuation of agriculture commodities and lack of information precipitating market failures which are common in most developing countries (Ellis, 2000). Similarly, subsistence farmers may wish to reduce risk by participating in activities that generate relatively stable returns (Barrett, Reardon & Webb, 2001). Non-farm livelihood diversification is widespread and found in all locations and across the poor and wealthy households, and is not only a characteristic survival strategy in rural areas, but also present in urban areas of developing and rural areas of developed countries with diverse motivation (Perz, 2005). Non-farm diversification can either be distress driven (Atamanov & Berg, 2012) or demand driven (Cinner, McClanahan & Wamukota, 2010; Thulstrup, 2015).

Non-farm` livelihood diversification can be explained by the asset-based and insurance-based diversification theories (Ellis & Freeman, 2004), and the structural transformation theory (Chenery & Syrquin 1975; Clark, 1940; Fisher 1939; Kuznet, 1973). According to the asset-based diversification theory, the degree and level of diversity in a farm household's livelihood mix indicates the degree of diversity in the resources or assets it has access to or owns. The insurance-based diversification theory on the other hand posits that income failures and shocks dictate and pushes the farm household to diversify its activities into the non-farm sector. The structural transformation theory also indicates that, economic development in rural communities results in re-allocation of resources from low productive wage sector (agriculture) to high productive



wage sectors (manufacturing and service) of the economy. This theory is appreciated much in peri-urban diversification where traditional farming activities come into conflict with alternative economic and residential land use interests (Appiah, Bugri, Forkuo & Boateng, 2014; Busck, Kristensen, Præsthalm, Reenberg & Primdahl, 2006; Mandere, Ness & Anderberg, 2010).

In Ghana, like most other Sub Sahara African countries, agriculture remains an important source of livelihood for millions of people. According to the Ghana Living Standards Survey (GLSS) 6 report, approximately 52 percent of households derive their income from agricultural activities, including incomes from cash and food crops farming, and fishing (Ghana Statistical Service (GSS), 2014). It is observed that, while agriculture continues to occupy an important place in terms of livelihoods systems in Ghana, the adoption of non-farm activities has gained massive acceptance in both urban and rural areas due to the constraints households engaged in farming face (Asmah, 2011). There are evidences that more people are moving into the non-farm sector (Dary & Kuunibe, 2012; GSS, 2014; Owusu, Abdulai & Abdul-Rahman, 2011). The GLSS 6 reported that, approximately 3.7 million households (44.3%) operate non-farm enterprises in Ghana. According to the report, about half of these non-farm household enterprises (50.4%), are located in urban localities, while a little over one-third (36.8%) are in rural areas (GSS, 2014).

By way of illustration, non-farm diversification in rural Ghana increased by nine percent points (from 76 to 85 percent) during the period 1991 to 1998 with a static share of income at 38 percent while share of income from farming

reduced from 57 percent in 1991 to 55 percent during the same period (Lay & Schuler, 2008). Also, the dominant sources of livelihood for urban households comprise of wage employment and non-farm activities (GSS, 2013). In a related study in three ecological zones in Ghana, Oduro and Osei-Akoto (2007) found that rural households' engagement in non-farm enterprises has increased. In Northern Ghana, some 20 percent of households earn income from non-farm employment (Al-Hassan & Poulton, 2009).

The situation is similar for the Brong Ahafo Region and for that matter the Sunyani West District where rural households depend on rain-fed farming for subsistence production with their livelihoods vulnerable to climatic shocks, market volatility, rising prices of agricultural inputs, limited land and post-harvest losses (GSS, 2013). Farming in the district can generally be described as subsistence in nature and homogeneous as most farmers engage in similar activities (SWDA, 2017). The District Assembly considers farming as the mainstay of the district economy. In view of that, since 2012, an appreciable portion of the district composite budget has been devoted towards the promotion of agriculture related programmes in the district. One of such programmes is the e-agriculture programme initiated in 2015 (SWDA, 2017). The programme sought to promote delivery of agricultural information and knowledge services such as market prices and extension services through the use of ICT and media to disseminate agriculture information to registered farmers.

Despite the investments by the District Assembly in the agriculture sector, the state of farming and the plight of farmers in the district have not improved.

Diversifications into non-farm enterprises can therefore fulfill a risk management and survival function for these farmers especially where lack of sufficient formal employment is also prevalent (Ackah, 2013). Some of the inhabitants are engaged in small scale businesses such as leather production, bricks and tile, sachet water and carpentry and joinery. Others are also engaged in service provision including tailoring, dressmaking, hairdressing and catering services (SWDA, 2016). It is however not clear whether these activities are undertaken as a livelihood diversification strategy by farmers. Besides the above mentioned reasons, the Sunyani West District was the Social Laboratory for the Institute for Development Studies [IDS].

At the policy level, institutions and programmes like Ghana Regional Appropriate Technology and Industrial Service (GRATIS) Foundation, National Board for Small Scale Industries (NBSSI), and the Rural Enterprise Programme (REP) play an important role in encouraging non-farm diversification (Tetteh & Frempong, 2009). For example, the joint implementation of the Rural Enterprises Project (REP 1 & 2) by government of Ghana, IFAD and the African Development Bank between 1995 and 2011 contributed tremendously to the entrepreneurial transformation taking place in rural areas in Ghana. As per its objective, the REP sought to contribute to the reduction of rural poverty through enterprise development. By targeting rural districts, REP sought to improve the livelihoods and incomes of rural poor non-farm entrepreneurs (GoG, 2012). However, according to Agyei-Mensah (2010), households more especially rural

dwellers, have not taken full advantage of these institutions that provide skill training and basic working tools for non-farm start-ups.

### **Statement of the Problem**

The economy of the Sunyani West District is traditionally viewed as agrarian in which households are mainly engaged in farming (GSS, 2013). According to GSS (2013), about 60 percent of the households in the district are engaged in agriculture. However, due to small farm size, dependence on rainfall and low returns from farming activities, majority of the farmers are exposed to unstable income and poverty (GSS, 2013) although a huge amount of money has been invested in the sector by the District Assembly. Available evidence also suggests that the peri-urban expansion due to immigrations has also contributed to decreasing land holding size as a result of sale of portions of land to new developers for residential use (Appiah et al., 2014; GSS, 2014). Therefore, if there are no alternative means of livelihoods substituting agriculture, most of the farmers would be subjected to abject poverty.

The literature on non-farm livelihood diversification highlights the importance of non-farm activities to the welfare of farmers especially in situations where credit and farming activities are constrained (Man & Sadiya, 2009). Therefore, if farmers in the Sunyani West District diversify into the non-farm sector, they will be able to raise additional income to supplement their income. However, studies done on livelihood diversification in Ghana (Ackah, 2013; Owusu-Boateng, 2011) have concentrated much on livelihood diversification as a

whole with less emphasis on non-farm diversification and also focused on rural areas and neglected peri-urban areas.

Some studies have also surfaced to highlight the determinants of non-farm livelihood diversification (Asmah, 2011; Babatunde & Qaim, 2010; Saha & Bahal, 2010) but empirical evidence on it are mixed (Nagle & Naude, 2014). For instance, the positive influence of education on non-farm livelihood diversification was reported by Saha and Bahal (2010) in Bangladesh, Asmah in Ghana, and in Southern Ethiopia by Eneyew and Bekele (2012) contrasting earlier studies that education was not a significant determinant of non-farm diversification (Beyene, 2008; Man & Sadiya, 2009). Other determinants such as gender, land, income and age are highly contested in literature (Babatunde & Qaim, 2010; Beyene, 2008; Khatun & Roy, 2012).

The contribution of social asset to non-farm livelihood diversification is also relatively an unexplored area in the literature (Johnny, Wichmann, & Swallow, 2017). The knowledge gap in respect to peri-urban areas coupled with the contrasting empirical findings on non-farm livelihood diversification and the limited evidence with respect to social assets may affect the formulation of policies since generalization of earlier findings to cover all communities may not necessarily be applicable. The study therefore seeks to fill this knowledge gap and make appropriate recommendations to improve non-farm livelihood diversification in the Sunyani West District.

## **Objectives of the Study**

The general objective of this study was to investigate non-farm livelihood diversification in selected rural and peri-urban communities in the Sunyani West District.

The specific objectives were to:

1. Describe the types of non-farm livelihood diversification strategies adopted by farmers in the Sunyani West district.
2. Examine the factors influencing farmers' decision to diversify into the non-farm sector in the study area.
3. Explore the outcomes of non-farm livelihood diversification.
4. Examine the constraints to non-farm livelihood diversification in the district.
5. Make recommendations that will enhance non-farm livelihood activities in the district.

## **Research Questions**

The research questions that the study sought to respond to are as follows:

1. What are the non-farm livelihood diversification strategies adopted by farmers in the Sunyani West District?
2. What factors influence farmers' decision to diversify into the non-farm sector?
3. What are the outcomes of non-farm livelihood diversification?

4. What are the constraints to non-farm livelihood diversification in the district?

### **Significance of the Study**

The concentration of efforts on the farming sector to generate income and reduce poverty would not achieve much result due to the limited opportunities it offers, coupled with the numerous challenges farmers face in their work. The non-farm sector is therefore an important sector that deserves attention in order to eradicate rural poverty. Non-farm livelihood diversification provides alternative sources of income and employment for the rural poor and also stimulates agricultural production. This study seeks to investigate empirically, non-farm livelihood diversification. The results of the study will help both policy makers and donors interested in rural development to direct attention and support to the non-farm sector. Policies targeted at poverty reduction and the rural economy most often have not taken into consideration the non-farm sector.

This study is particularly significant because it complements and validates previous studies on livelihood diversification in Ghana. A number of studies have analyzed livelihood diversification in rural areas but little is known of non-farm livelihood diversification especially in the peri-urban areas, which this study addresses. The study serves as a good basis for upcoming researchers who have a strong desire to conduct a study on this or related topics in the Sunyani West District or elsewhere.

### **Delimitations**

This study seeks to investigate empirically non-farm livelihood diversification in rural and peri-urban areas. Geographically, the study was undertaken in the Sunyani West District of the Brong Ahafo Region, Ghana. A number of factors influence the diversification into non-farm enterprises. However, the study was delimited to certain variables, namely: education, membership of association, age, market, farm income, sex and access to farm land. These variables were selected because some of them have received mixed findings in earlier studies while others have received very little attention in the literature. Also, the time available for the study was limited and therefore other variables could not be included in the study.

### **Limitations of the Study**

Among the limitations the researcher faced while conducting this study was scheduling appointments with the farmers to administer the interview schedule. During the period of data collection, the rains had started falling hence most respondents left the house to their farms early in the morning and returned in the evenings. The researcher had to call respondents on phone the previous day to schedule appointment and also left very early in the morning to the field. The researcher returned in the evenings to continue with the data collection exercise when those who were missed in the morning returned from their farms. As a result, nine respondents were not reached. Furthermore, even though there were many rural and peri-urban communities with similar characteristics as those selected for the study, time and financial constraints did not allow all of them to



be included in the study. Also, the study could not describe in detail the urban economy to which each respective peri-urban area pertained. Lastly, the findings on the income outcome of non-farm livelihood diversification were limited by authentic data as most of the respondents relied on recall for information on their monthly income.

### **Definition of Terms**

The following terms are operationalised in the study.

1. Rural: The term is defined as areas where majority of the residents are engaged in agriculture in a broad sense (including livestock farming, forestry, and fisheries) and/or localities with less than 5,000 persons.
2. Peri-urban: Places adjacent to areas of high population concentrations (urban), where traditional farming activities come into conflict with alternative economic and residential land use interests.
3. Livelihood: A set of activities undertaken by rural farmers which are predetermined by their capabilities and existing opportunities in deriving financial reward and improved standard of living.
4. Non-farm activities: refer to small, informal enterprises in the rural non-farm economy

## **Organisation of the Study**

The thesis is organised into five chapters. Chapter One as we have looked at, deals with the introduction of the study and covers the background to the study, statement of the problem, research objectives, research questions, significance of the study, delimitations, limitations, definition of terms and organization of the study. Chapter Two provides literature review which consists of theoretical, conceptual and empirical literature on non-farm livelihood diversification. The conceptual framework is also provided as a guide to the study. Chapter Three looks at the research methodology and present the research design, a brief description of the study area, sample and sampling procedure, data collection and analysis. Chapter Four deals with the analysis and discussion of the results of the study. The final chapter presents summary, conclusions and recommendations based on the major findings of the study.

## CHAPTER TWO

### LITERATURE REVIEW

#### **Introduction**

The chapter reviews relevant literature for the study and it is divided into three sections. This is aimed at getting supporting theories and empirical evidence for the study. The first section deals with the theoretical underpinnings for non-farm livelihood diversification. The second section dwells on the conceptual review and discusses livelihood diversification, non-farm enterprises, composition of the non-farm sector, determinants of non-farm diversification, constraints to the sector and the importance of non-farm livelihood diversification. The third section looks at the empirical literature on non-farm livelihood diversification and the conceptual framework guiding the study.

#### **Theoretical Framework**

There are three main theoretical foundations that underpin this study. These theories help to understand non-farm diversification as a livelihood option and a strategy for income generation and poverty reduction for farmers. The assets-based theory and insurance-based theory propounded by Ellis and Freeman (2004) are the main theories guiding the study. Besides, the structural transformation theory that postulates a shift from the predominant agriculture activities in peri-urban areas to non-agricultural activities as a result of economic development (Chenery & Syrquin, 1975; Clark, 1940; Fisher, 1939; Kuznet, 1971) also supports the study.

### Asset-based and Insurance-based Diversification Theories

Ellis and Freeman (2004) categorized non-farm livelihood diversification under asset-based or insurance-based diversification theories. Asset-based diversification theory argues that the degree and level of diversity in a farm household's livelihood mix indicates the degree of diversity in the resources or assets it has access to or owns. These assets include; financial, human, physical, natural and social. For example, a household which owns a large plot of land relative to the amount of labour will be expected to engage in cultivation while a farm household which has a large amount of labour relative to farmlands will be expected to specialize its activities in non-farm sector. Farm households who own some land but cannot employ fully all the families' labour supply will try to diversify their activities from own cultivation to include wage labor or non-farm activities. According to this theory, there is an expected inverse-U shape relationship between access to land and non-farm livelihood diversification. Similar argument can be extended to the ownership of other assets such as livestock, credit and non-farm livelihood diversification.

On the other hand, the insurance-based diversification theory argues that income failures and shocks dictate and pushes the farm household to diversify its activities. The levels of diversification vary across farm households according to their demand for this particular form of insurance, and its cost. The demand for non-farm livelihood diversification as a form of insurance will depend positively on how risk-averse the individual is, and on how much income volatility it is subject to, and negatively on the extent to which it has other ways of insuring

against or coping with risk, such as owning liquid assets (cash, food stock, livestock), access to communal credit/loan, crop insurance, state safety net or migrant remittances which is also consistent with economic theory.

Economic theory indicates that risk-neutral farmers will divide their labour supply between on-farm and non-farm employment opportunities such that the expected marginal returns to an extra hour of effort/work are equal. If farmers are risk-averse, either less time will be allocated to the riskier jobs if the expected returns to each sector are the same, or alternatively the farmer will be willing to accept lower wages in the less-risky environment (Mishra & Goodwin, 1997). Non-farm livelihood activities can be used by farmers to reduce the total variance of their income, that is, the overall risk, or to increase the total returns to labour. However, this does not necessarily mean that risks associated with non-farm opportunities are lower than, independent of, or inversely related to farming risks (Davis & Pearce, 2000).

According to the proponents of the asset-based and insurance-based theories, there are different views for the rationales of non-farm livelihood diversification by farmers and other individuals. Non-farm livelihood diversification could arise as a survival strategy against high vulnerability to disasters and shocks, asset shortages, and poverty. On the other hand, other scholars consider expanding choices and opportunities to improve income level and living standards as the rationale behind livelihood diversification (Ellis, 2000). Consequently, Ellis (2000) rationalizes the reasons for non-farm livelihood diversification mainly to emanate from necessity versus choice conditions.

Dercon and Krishnan (1996) mentioned that there are biased arguments between coping versus risk, and voluntary versus involuntary strategies of the farmers in respect of non-farm livelihood diversification. The difference between risk and coping strategies as non-farm livelihood determinant could be interpreted as ex-ante and ex-post of risk management and coping with shock crisis actions, respectively. The author mentioned that while risk management is the voluntary strategy of individuals from the intended failure of income, coping strategy is the involuntary action of the household to the unintended failures of income. The theories are also critiqued for being limited to the individual or the household and placing little emphasis on the influence of economic development. These shortcomings are addressed by the structural transformation theory.

#### Structural Transformation Theory

Economic growth is said to be characterized by patterns of changing shares of different sectors in the national income and labour force. The common structural transformation observed in the economic development of nations, have been mentioned in the works of Fisher (1939), Clark (1940), Kuznet (1971), and Chenery and Syrquin (1975). These researchers posited a shift of predominant share of agriculture to manufacturing activities and a moderate to high level of increase in the share of services both for the national product and the work force as an area develops.

According to Fisher (1939) and Clark (1940), income elasticity of demand for agricultural products is low while there is rising levels of income in other

sectors. As a result, the demand for agricultural products relatively declines; while on the other hand, income elasticity for industrial and service products increases. In view of that, the demand for industrial goods increases and, after reaching reasonably high levels of income, demands for services also increases sharply. On the supply side, agriculture being mainly dependent on a fixed factor of production (land) faces a limit on its growth due to operation of the law of diminishing returns whereas industry on the other hand, offers large scope for use of capital and technology to augment its productivity. Kuznets (1971) also agreed that income elasticity of demand was a primary reason for change in the labour structure, but recognized that other factors like technology and institutions play an important role in facilitating these changes.

According to the proponents, with the decline in the share of agricultural output, a decline in the share of agricultural employment can also be expected by shifting of labour from agriculture to non-agriculture activities. Lewis (1954) explained this shift in livelihood by his theory of unlimited supplies of labour. He proffered a dualistic economy characterized by modern industrial sector where production involves use of capital and labour, and a large traditional agricultural sector using only labour and simple tools and natural resources. In the modern sector, there is profit and investment whereas, producers in the traditional sector are subsistence oriented and do not save or invest. Consequently, the real wage in the modern sector is substantially higher than the average real earning of workers in the traditional sectors which result in the transfer of labour from agriculture to the non-agriculture sector. Behera (2015) corroborates the view that livelihood

diversification from agriculture to non-agricultural activities is positively influenced by non-agricultural income, non-agricultural investment, rural-urban real wage differential and human capital variables like urban population.

Over the years, various theoretical frameworks have been used in analysing livelihoods. However, most of them failed to look at diversification. The entitlement approach by Sen (1975) focused on poverty and famine and tried to understand how endowments were transformed into commodities. Key to this approach was the phenomenon of entitlements; the effective command and control an individual has over a commodity or alternative commodity bundles that can be acquired. In late 1980, the concept of sustainable livelihood securities was also used to analyse household livelihoods. It argued that tangible and intangible stocks and capabilities are transformed into flows by livelihood activities which contribute to the wellbeing of a household. This was further refined into a livelihood entitlement framework in the mid-1990s where households were seen as balancing sources of entitlements with utilization of the same entitlements.

The asset-based and insurance-based theories (Ellis & Freeman, 2004) are still very relevant in fighting poverty sustainably by emphasizing on livelihood diversification as an important strategy for rural dwellers (Clark & Carney, 2008). With this study focused on non-farm livelihood diversification in rural and peri-urban communities in the Sunyani West District, the asset-based theory, insurance-based theory and the structural transformation theory are the most appropriate. This is because the study centers on the determinants and outcomes of non-farm livelihood diversification which are fundamental to the asset-based



and insurance-based theories. Also, with competing land use in peri-urban communities as a result of the economic development and population growth, the structural transformation theory provides the basis for such analysis.

## **Conceptual Review**

### **The Sustainable Livelihood Approach**

Chambers (1983) work, 'Rural Development: Putting the Last First' was the starting point towards the search for a better approach for eradicating poverty in developing countries. This became necessary due to the failures of past development approaches such as the modernization theory to significantly eradicate poverty (Ashley & Carney, 1999). Chambers posited that the state of rural development practice was awful, as there seemed to be a complete disjoint between the reality of poverty and how development professionals approached it. Based on the recommendations in his book, Chambers and Conway (1992) came together to proffer a new trajectory known as the sustainable rural livelihoods approach.

The approach is conceptually founded on the evolving thinking about poverty reduction, the way the poor live their lives, and the importance of structural and institutional issues (Ashley & Carney, 1999). According to its proponents, Chambers and Conway (1992) and later Scoones (1998), the SLA responds to the failures of modernization to effectively reduce poverty, positing that the latter overlooks the capability of poor people to access and harness the opportunities economic growth offer (Krantz, 2001). It employs a holistic

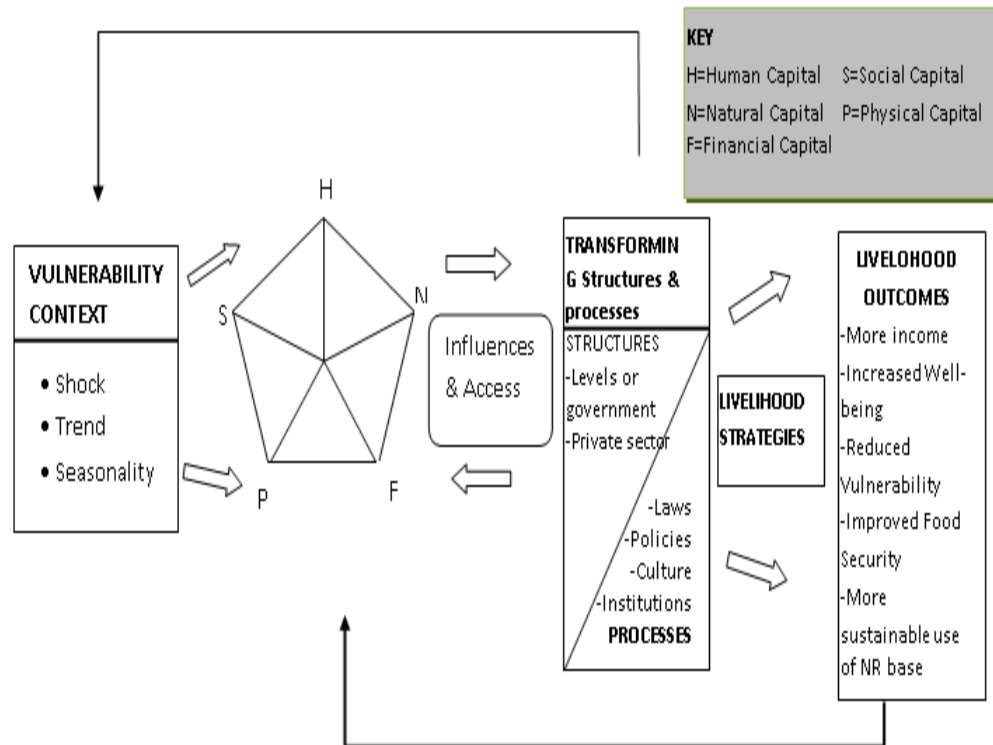
approach to development by focusing on the assets that poor people use and the strategies they employ to make a living (Yaro, 2004). In addition, it challenges the single sector approach to solving complex rural development problems (Scoones, 2009). A key feature of SLA is the Sustainable Livelihoods Framework, a tool for practical application of the approach, discussed in the next section.

#### The Sustainable Livelihood Framework

The Sustainable Livelihood Framework was postulated by British Department for International Development (DFID) (2000) for the analysis of livelihood strategies by aiming at harmonizing poverty reduction policies in developing countries. It is the guiding framework used for this study. Building upon prior work by organizations such as the Institute for Development Studies at the University of Sussex, the DFID Sustainable Livelihoods Framework was developed in order to organize and improve the organizations' efforts to eliminate poverty. Other organisations such as Oxfam, FAO, CARE and UNDP have also developed similar frameworks based on the DFID (2000) framework.

According to the framework, rural livelihoods are influenced by three factors that determine the outcomes of a households' portfolio of activities and income sources (DFID, 2000). First, the capital stock a household is endowed with comprise; natural, physical, human, financial and social capital. The second is the livelihood activities the household chooses based on the capital stock endowment. The third factor is the external environment determined by the institutional and policy arrangement, exposure to shocks, economic trends as well as the social context. These three factors determine the success of a household in

creating a livelihood (Ellis, 2000). The focus of this research is non-farm livelihood diversification in rural and peri-urban areas. The literature has identified a number of drivers of non-farm livelihood diversification, separated into voluntary and involuntary diversifications. Reardon, Berdegue and Escobar (2001) referred to the factors as Distress-push vs. Demand-pull, while Atamanov and Berg (2012) call it Survival-led vs. opportunity-led. Figure 1 provides a picture of the sustainable livelihood framework. A brief discussion of the components of the framework is provided.



**Figure 1: Sustainable Livelihood Framework**

Source: DFID (2000)

## Livelihood Assets

The DFID (2000) framework outlines assets in terms of five categories necessary for the pursuit of positive livelihood outcomes. These assets include; physical, social, natural, financial and human capital. The framework is founded on a belief that people require a range of assets to achieve positive livelihood outcomes and also no single category of asset on its own is sufficient to yield the many and varied livelihood outcomes that people seek. The vulnerability context in the framework influences the capital endowments; but it does not however imply that all livelihoods start from a vulnerable background (Scoones, 2009). Some examples of each asset are presented in Table 1.

**Table 1: Examples of Livelihood Assets**

Livelihood assets	Some examples
Human	Education, skills, knowledge, capacity to work, health, capacity to adapt etc.
Social	Networks and connections, relations of trust, common rules & sanctions governing exchange and reciprocity, membership in formal and informal groups, collective representation and leadership etc.
Financial	Availability of cash or its equivalent (savings, bank deposit, livestock, jewelry), credit, cash flow in form of; pension, remittances, wages.
Physical	Basic infrastructure (transport, secure shelter, water supply and sanitation, affordable energy, access to information) and producer goods such as tools, equipment and technology
Natural	Land and its produce, water resource, forest, wildlife, biodiversity etc.

Source: Compilation based on available literature, 2017

Among the five assets presented above, human capital is the asset which lacks transferability and therefore limits the chances of perpetuating certain livelihood strategies (Andrade, 2008).

#### Institutional Context

The institutional context consists of; legislations, policies and initiatives by governments, international or local organizations and institutions which shapes the livelihood framework (DFID, 2000). The institutional context affects all the components of the livelihood framework. Fiscal policy, economic trends and health policies can either positively or negatively influence the vulnerability context, livelihood strategies, livelihood assets and livelihood outcomes. Asmah (2011) found in a study in Ghana that the role of institutions in the transfer of information and knowledge to rural dwellers is very weak and affects livelihood diversification.

#### Vulnerability Context

The vulnerability context describes the external uncontrollable factors that influence people's assets and livelihood opportunities. DFID (2000) posit that people exist in the context of vulnerability characterized by trends, shocks and seasonality that result in direct and indirect hardship. The availability of livelihood assets is affected by trends and changes in population, natural resource, national and international markets (Scoones, 2009). Shocks are also explained to mean the unexpected happenings in life which often destroy assets directly. These shocks may include conflicts, diseases, floods, bush fires and death of bread

winners. Lastly, seasonality in prices, crop yields, and employment opportunities tend to compromise the livelihoods of rural folks who spend large proportions of their income on food consumption (Collier & Goderis, 2009).

#### Livelihood Strategies

Livelihood strategies as used in the framework is the combination of assets and activities that are required for a living (Ellis, 1998). The rural economy in developing countries is not confined to the agricultural sector, but embraces all other forms of economic activities (Csaki & Tuck, 2000). Scoones (2009) stated that the three main livelihood strategies available to rural dwellers include; agriculture intensification/extensification, livelihood diversification and migration. The literature has however grouped livelihood strategies along the line of income sources including; agriculture, off-farm and non-farm (Alemu 2012; Assan, 2014; Babatunde, Omotesho, Olorunsanya & Owotoki, 2008; Barrett et al., 2001; Ellis, 2000; Eneyew & Bekele, 2012).

#### Livelihood Outcomes

Livelihood strategies are usually constructed to achieve specific ends in life known as livelihood outcomes. Livelihood activities like agriculture, non-farm and a combination of activities are aimed at achieving among other things; employment, improved income, increased wellbeing, reduced vulnerability, improved food security and a more sustainable use of the natural resource base (DFID, 2000; Scoones, 2009). In respect of employment as a livelihood outcome, Sen (1975) as cited in Scoones (2009) notes three aspects of outcomes: income (a wage for the employed), production (employment providing a consumable

output) and recognition (where employment provides recognition for being engaged in something worthwhile).

### **Livelihood Diversification**

The concept livelihood diversification has been defined differently by authors in development studies. One of the early proponents of the concept, Scoones (1998), defines it as the development of a wide income earning portfolio to cover all types of shocks or the strategy may focus on the creation of responses to handle a particular type of common shock or stress through well-developed coping mechanisms. Start (2001) defined livelihood diversification in two components. First, it is seen as a progressive development tool that promotes economic growth within the rural economy. Second, livelihood diversification is simply a strategy for promoting secured livelihoods during adversities, termed “negative diversification”.

The most widely cited and operational definition adopted for this study, is from the work of Ellis (1999). For Ellis, livelihood diversification constitutes the process by which households construct a diverse portfolio of activities and social support capabilities for survival and to improve their standard of living. The process stated in this definition, may well refer to factors that induce people to engage in multiple livelihoods. The adoption of livelihood diversification may imply two things; one reason may be linked to increased vulnerability and the other reason being a deliberate attempt by individuals to broaden their income (Swift, Hamilton, Devereux & Maxwell, 2001). The common underlying theme

from these definitions is that diversification is either a proactive or reactive strategy that seeks to provide some sort of mitigation for household's livelihood security especially in rural areas.

#### Evolution and Form of Livelihood Diversification

Central to the sustainable livelihoods approach is the concept of livelihood diversification. According to Ellis and Allison (2004), it evolved as a response to the failure of the International Monetary Fund and the World Bank's Structural Adjustment Programmes to provide the catalyst for increased agricultural production in most developing countries. Its emergence is grounded on the fact that poverty and vulnerability are highly linked with over-dependence on subsistence agriculture, therefore the need for rural households to diversify into other activities (Ellis & Allison, 2004). Diversification includes one of the broad categories of livelihood strategies available to rural households within the sustainable livelihoods framework apart from migration and agricultural intensification/extensification (Scoones, 1998; Swift & Hamilton, 2001). Although the concept has over the years been studied from the lens of rural development, it is equally important for urban households (Njogu, 2009).

Generally, livelihood diversification takes three forms: on-farm, off-farm and non-agricultural or non-farm (Ellis & Allison, 2004; Khatun & Roy, 2012). From the perspective of rural development, self-employment in rural enterprises (non-farm) channel to livelihood diversification is preferred due to its potential for stimulating rural economic growth although it requires initial start-up capital and also involves higher risks of failure (Warren, 2002). Consequently, initiatives



by international NGOs such as the International Fund for Agricultural Development (IFAD) with support from governments have sought to create the enabling environment to mitigate some of the challenges rural households face in venturing into such enterprises. In the case of Ghana, some rural Districts have since the 1990s benefited from the Rural Enterprises Project (GoG, 2012).

### **Non-farm Activities**

The term non-farm activities refer to small, informal enterprises in the rural non-farm economy (Dary & Kuunibe, 2012). Fisher, Mahajan and Singha (1997) (as cited in Haggblade, Hazell & Reardon, 2010) defined rural non-farm activities as comprising of all non-agricultural activities, mining and quarrying, household and non-household manufacturing, processing, repairing, construction, trade, transport and other services undertaken in villages and rural towns having up to 50,000 populations and the enterprises varying in size from the household own account enterprises all the way to factories.

This includes all non-agricultural activities in rural areas including on-farm (but non-agricultural) activities such as agribusiness, trade and retail, rural industrialization, construction, tourism and mining (Nagler & Naude, 2014). The non-farm sector might be adaptive (switching to trading possibly in response to drought), coping, or be a survival strategy as a response to livelihood shock. The rural non-farm economy cannot be viewed as homogenous but rather it is categorized by its heterogeneity, incorporating self-employment, micro, small, and medium-sized enterprises (MSMEs) (Tuyen, 2014).

### Composition of Non-farm Economy

As mentioned in the previous section, the non-farm economy is composed of a highly heterogeneous collection of trading, agro-processing, manufacturing, commercial and service activities (Haggblade et al., 2010). Even within the same country, strong differences emerge regionally, as a result of differing natural resource endowments, labour supply, location, infrastructural investments and culture (Wiggins & Hazell, 2011). Nagler (2015) found in Ethiopia and Malawi that the non-farm sector was composed of: agricultural business, non-agricultural business, trade, sales, professional services, transportation, bars and restaurants.

Dary and Kuunibe (2012) found that by tradition and social orientation, non-farm activities such as blacksmithing, wood carving, masonry, carpentry, butchery, photography, grinding mill operation, tractor operation and mechanical repair works were strictly performed by men. Conversely, pito brewing, sheabutter processing, food vending, pottery, and charcoal/fire wood production were found to be performed by women. The share of the formal and informal sector in the study was 89 percent and 11 percent respectively, indicating that by far, the informal non-farm sector provides the bulk of non-farm activities for the rural households (Table 2).

**Table 2: Type and Sex Composition of Rural Non-farm Activities**

Activities Common to Men	Activities Common to Women	Activities Common to both sex
Blacksmithing	Pito Brewing	Trading
Wood Carving	Sheabbuter processing	Stone mining
Masonry	Food vending	Retail shop operation
Carpentry	Pottery	Drinking bar operation
Repair Works (Mechanical)	Charcoal/Fire wood	Teaching
Security Work	Tour work	Hair dressing/barbering
Traditional Healing		Dressmaking
Weaving		
Lotto writing		
Butchery		
Agro-Industrial Employment		
Photography		
Grinding Mill Operation		
Tractor Operation		
Building & Construction		
Sanitary Work		

Source: Dary and Kuunibe (2012)

#### Features of Rural Non-farm Enterprises

The previous section looked at the composition of the non-farm sector as heterogeneous and involves several activities with different features. This section looks at four most prominent features of the non-farm sector which are; size, seasonality, technology and capital requirement. First, with respect to the size of employment within the non-farm economy, Liedholm and Mead (1999) point out

that many enterprises operate with only one worker depending on their activities. In Sub-Saharan Africa, majority of rural non-farm enterprises tend to be very small scaled, rely largely on family labour and employ few workers (Kristiansen, 2004; Quatraro & Vivarelli, 2013).

### Capital Requirement

There are several sources of start-up capital for non-farm livelihood diversification in developing countries. It is known in literature that many rural non-farm activities require small start-up capital; hence many people use their personal savings to diversify into such enterprises (Owusu, Abdulai & Abdul-Rahman, 2010). Zuwarimwe (2011) confirmed this in Zimbabwe that people used low start-up capital ranging between 3,000 and 380,000 Zimbabwe dollars which is equivalent to 8,300 and 1,050.01 US dollars respectively. Another source of capital used for non-farm diversification is from friends and relatives (Zuwarimwe, 2011) because such loans are mostly interest free.

Aid has also been identified as a source of funding for livelihood diversification. Durham and Littrell (2000) stated that handicraft development in many African and Asian countries received assistance from American aid. Zuwarimwe (2011) indicated that non-governmental organisations in Zimbabwe gave start-up capital to about 16 percent of respondents used in a related study. Last but not least, micro-credit institutions are another source of start-up capital for non-farm diversification in Africa although the poor are largely excluded from their services (Gbandi & Amisah, 2014; Kleih et al., 2013).

### Use of Technology

The literature points out that rural non-farm enterprises use appropriate technology as against industrial technology used by modern enterprises (Durham & Littrell, 2000). According to Duncombe and Heeks (2002), the use of simple technologies gives non-farm enterprises the opportunity to absorb both unskilled and semi-skilled labour thereby creating employment for the rural people. Owusu et al., (2010) shared a similar view that non-farm enterprises are mostly labour intensive and generate more employment per unit of capital than large-scale enterprises. Rural industries in Pakistan for example, use elementary technology that ensures productive employment to a large number of people (Rantso, 2016).

### Seasonality

The literature argues that the farming activities in rural areas are seasonal in nature and therefore, many farm workers diversify in non-farm activities during the off-season (Senadza, 2012). Bezu, Barrett and Holden (2012) found in Ethiopia that farmers diversify into different kinds of non-farm activities, such as selling firewood, charcoal and weaving activities during the agriculture off season. However, the literature indicates that, even though many people participate in non-farm activities during the agriculture off seasons, this does not mean that the non-farm sector suffers from a lack of labour during peak season of agriculture (Bezu et al., 2012).

### Motives for Non-farm Diversification (Pushed or Pulled)

Growth in rural populations, declines in agricultural employment, and rising demand for quality products in Africa is making the non-farm sector increasingly important as a source of income generation and poverty reduction (De Brauw, Mueller & Lee, 2014; Rijkers & Soderbom, 2013). There is a common view that most self-employment in Africa is based on necessity (Herrington & Kelly, 2013). However, households in rural Africa are motivated to diversify in non-farm activities generally due to both ‘push’ and ‘pull’ factors (Barrett et al., 2001; Berdegue, Ramirez, Reardon & Escobar, 2001; Reardon, Berdegue, Barrett & Stamoulis, 2006). Barrett et al. (2006) recognized that multiple motives prompt households to diversify assets, incomes, and activities into non-farm enterprises. Brief discussions of these motives are presented below.

#### Push-factors

One key push factor is the high degree of risk in agriculture (Rijkers & Soderbom, 2013). Ackah (2013) found in a study in rural Ghana that in the presence of failures and imperfections in the markets for credit and insurance, risk averse farmers diversify their income from agriculture in anticipation that a crop may fail. Nagle and Naude (2014) also stated that households that have experienced food shortages due to crop failure are 2.3 percent more likely to operate a non-farm enterprise. Risk aversion is therefore an important reason behind some non-farm livelihood diversification in rural Africa.

Another important push factor that causes people to diversify in non-farm enterprises is inadequate access to land (Movahedi, Fathi & Latifi, 2012). It is clear in literature that people without access to land are mostly engaged in non-

farm enterprises whereas those with greater access to land seldom engage in the non-farm sector (Escobar, 2001). According to Fritzsche (2012), households with smaller landholdings depend too much on non-farm activities in Indonesia. Households with adequate landholding are usually food secured and as a result, participate less in non-farm activities whereas, households with limited or no landholding are mostly food insecure; therefore, non-farm activities are crucial to their survival (Rantso, 2016).

Other push factors include; adverse weather conditions (floods, drought), response to diminishing factor returns, fragmented land holdings, reaction to crisis, seasonality and high input cost (Babatunde & Qaim, 2010; Haggblade et al., 2010). The push factors have also been described as Distress-Push diversification (Reardon et al., 2001), Involuntary diversification (Freese, 2010) and Survival-Led diversification (Atamanov & Berg, 2012). Most people in rural Africa are poor and prone to these factors hence they diversify to the non-farm sector to meet basic needs.

#### Pull-factors

The second set of motives for non-farm livelihood diversification is called pull-factors. Individuals may diversify in rural non-farm activities because of their desire to utilize business opportunities, in response to demand in rural areas (Freese, 2010). The demand-pull factors are also described as voluntary diversification (Freese, 2010) or opportunity-led (Atamanov & Berg, 2012). Pull factors represent opportunities for livelihoods improvements in the non-farm sector which attract some individuals to participate in the non-farm economy.

This may be fueled by strategic complementarities between activities, such as crop and livestock integration, specialization, comparative advantage accorded by superior technologies, skills or endowments (Ackah, 2013).

Household factors, as well as individual characteristics have been identified as vital determinants for pulling individuals to diversify in rural non-farm enterprise (Nagle, 2015). These factors typically include gender, age, education, marital status, financial assets, household composition and the size of the household itself (Bhaumik, Dimova & Nugent, 2011). Among these factors, education is found to be relatively more important to find non-farm wage employment (Bayene, 2008; Malek & Usami, 2009). In China, to operate a non-farm business, an individual need to have skills in book keeping, management skills and also be literate (Liu, 2012). Therefore, people with higher education gain access to the most lucrative non-farm activities while those with low levels of education are found at the lower earning activities such as craft making and hat weaving (Escobar, 2001).

Another common pull factor is availability of infrastructure such as utilities, quality roads, market and proximity to urban centers (Abdul & Usami, 2009; Roepstorff & Wiggins, 2011). The inadequate access to infrastructural services, such as electricity and quality roads are major constraints to non-farm diversification (Isgut, 2004). Gibson and Olivia (2010) state that in Indonesia, people who diversify in the non-farm sector tend to live in communities where a high number of households have electricity. Consequently, the availability of



transport, electricity, ICT and water are important infrastructural facilities that attract many people to diversify livelihoods in non-farm enterprises (Ratso, 2016).

According to Reardon et al. (2006), rural entrepreneurs are pulled into non-farm activities under favourable agro climatic conditions that are good for agricultural activities and also in areas where natural resources are found. Owusu et al. (2011) stated in a study in Northern Ghana that, both push and pull factors are influenced by the state of agriculture development. However, the push factors account for the establishment of the enterprises. The push and pull factors discussed above lead to a discussion of non-farm diversification and self-employment in developing countries.

#### Non-farm Diversification and Self-employment

As developing countries develop economically, labour is relocated from agriculture into more productive sectors. Wage employment; however, continues to be difficult to come by for majority of the rural people (Malchow-Møller, Schjerning & Sørensen, 2011). In view of this, non-farm entrepreneurship and self-employment are usually the first steps within this economic transformation process for the rural people while wage employment remains an option for few better educated persons. Informal entrepreneurship is therefore widespread, with estimates suggesting that about half of all jobs in Sub-Sahara Africa can be found in this sector (Nagler, 2015). The numbers range significantly between countries, depending on a variety of factors, such as the level of economic development, institutions and government policies, as well as infrastructure and geographic location (Margolis, 2014).

Non-farm enterprises are well thought-out to be a major engine for countries to grow economically. Dejardin (2011) has explained that the formation of new enterprises plays a crucial role in facilitating competition, which stimulates innovation and the creation of new businesses. These new enterprises contribute enormously to income generation and poverty reduction (Malchow-Møller, Schjerning & Sørensen, 2011). However, the role of non-farm livelihood diversification in the development process lacks adequate understanding, especially in Sub-Saharan Africa (Naude, 2010). As to whether the role of non-farm entrepreneurship in the development process of developing countries is similar to that of advanced economies, continues to be unclear (Quatraro & Vivarelli, 2013).

Notwithstanding this gap, one clear difference is that in developing countries, non-farm self-employment is often compelled by poverty and the necessity to diversify sources of household income to survive, instead of perceived business opportunities (Naude, 2010). Himanshu, Lanjouw, Mukhopadhyay and Murgai (2011) argues similarly that, the acceleration of non-farm employment is likely to have been driven in part by particularly high levels of entry into this sector by women and young adults who were pushed into the non-farm labour force because of acute poverty.

Quatraro and Vivarelli (2014) stated that the informal type of developing countries entrepreneurship does not have the same potential to drive economic growth as it does in advanced economies. Individuals, who establish small informal businesses in rural Africa, rarely provide employment to external people

(Abor & Quartey, 2010; Quatraro & Vivarelli, 2013). Nevertheless, non-farm livelihood diversification still contributes to poverty reduction and can improve inequality and wealth distribution (Owusu et al., 2011). Efforts directed at increasing enterprise performance and achieving higher levels of productivity can lead to faster economic growth (Margolis, 2014).

#### Importance of Non-farm Diversification

The non-farm sector was given recognition as potentially important for rural development by policy makers only from the late 1970s onwards, after realising that mainstream industrialization had failed to trickle down to majority of the rural poor. Also, conflicting with expectations, the contribution of non-farm activities to rural development did not decline over time, but rather increased (Davis et al., 2010; Eapen, 2001). In order to earn a living, the rural poor resort to non-farm livelihood diversification (Bezu et al., 2012; Gunther & Launov, 2012). Therefore, non-farm livelihood diversification contribution to poverty reduction in developing countries cannot be ignored (Gibson & Olivia, 2009) in spite of the poor returns and low productivity (Movahedi et al., 2012). According to Mat, Jalil and Harun (2012), non-farm livelihood diversification reduced poverty by 42.9 percent in Kedah, Malaysia in the year 2008.

Non-farm livelihood diversification represents a potential source of employment and a route out of poverty (Ackah, 2013; Kijma & Lanjouw, 2005; Lanjouw & Lanjouw, 2001). According to Malek and Usami (2009), 66 percent of the rural labour force in Bangladesh participates in the non-farm sector, and about 93 percent of the labour time is allocated to non-farm activities. Available

literature also shows that the rural non-farm sector provides 30 percent of full-time rural employment in Asia and Latin America, 20 percent in West Asia and North Africa and 10 percent in Africa (Haggblade, Hazell & Reardon, 2010).

Nagler (2015) calculated the shares of annual net household income by household activities for five countries: Malawi, Niger, Nigeria, Tanzania and Uganda. It came out that the importance of non-farm diversification varies widely between African countries. While it contributes less than 9 percent to total household income in rural Malawi, the share is approximately four times as high in rural Niger (almost 36 percent). In the developing countries and economies in transition, between one third and half of the households generate their income from a non-farm source and the share of this type of income is between 20 and 70 percent of the total household income (Adams, 2001) as cited in Mat et al. (2012).

Non-farm activities are considered to play a crucial role in the distribution of income, particularly in the rural areas. The literature on the rural non-farm economy indicates that, non-farm activities reduce income inequality in rural areas (Ahmed, 1996). This is evidenced further by De Janvry, Sadoulet and Zhu (2005) in a study on the role of non-farm incomes in reducing rural poverty and inequality in China. They indicated that engaging in non-farm activities decreases income inequality. The same study observed that total income of the household would be significantly affected in the absence of non-farm incomes. However, despite the significance of non-farm income, there are still some uncertainties on whether rural non-farm activities are a significant channel to reduce income inequality in rural areas.

Another importance of non-farm livelihood diversification is that; it plays an important role in ensuring food security for majority of rural households especially during agriculture off season. In addressing food security needs in developing countries, Gibson and Olivia (2010) found that increasing food production as well as ensuring access to non-farm livelihood incomes will ensure food security during the lean seasons and harvest shortfalls. Owusu et al. (2011) found in Northern Ghana that, livelihood diversification in non-farm work exerts a positive and statistically significant effect on household income and food security status of farmers which supports the widely held view that income from non-farm diversification is crucial to food security and poverty alleviation in rural areas of developing countries.

#### Constraints of Non-farm Diversification

Despite the potential rural non-farm sector has to accelerate growth and speed up poverty alleviation in developing countries, they face several constraints in their day-to-day operations. The constraints to the non-farm sector includes: poor or costly access to credit, obsolete productive technologies, low levels of technical and managerial know-how, inadequate knowledge in record keeping, high levels of competition among enterprises, poor infrastructure and unfavourable macroeconomic conditions (Abor & Quartey, 2010; Bowen, Morara & Mureithi, 2009; Opong, Owiredu & Churchill, 2014). Additionally, SMEs in Africa are also limited by input constraints, undeveloped market channels and international market competition (Okpara, 2011).

Abor and Quartey (2010) observed in their study in Ghana and South Africa that one major problem that non-farm enterprises often face is access to credit. Inadequate access to institutional credit is a deterrent to non-farm livelihood diversification in many developing countries. In the absence of credit support from institutional agencies, the resource poor households are not able to start their own non-farm enterprises (Khatun & Roy, 2012). Ntiamoah, Li and Kwamega (2016) observe that, notwithstanding the recognition of the role of small enterprises in the development process in many developing countries, their development is always constrained by the limited availability of financial resources to meet a variety of operational and investment needs. As a result, many operate with elementary equipment which results in low productivity.

Another constraint to non-farm livelihood diversification is poor assets base (Scoones, 2009). According to Khatun and Roy (2012), possession of even a small asset enables households to take opportunities in the non-farm sector, particularly in the self-employment sector. For example, ownership of a sewing machine may induce a person to start his own tailoring business. Similarly, possession of a bicycle may help the worker in going to the nearby town for non-agricultural employment. Most of the landless and small farmers do not have asset which acts as a barrier to non-farm livelihood diversification

With the opening up of national markets to all types of producers under globalisation, the non-farm enterprises generally find it difficult to effectively compete with the large multinational companies, on the basis of cost, pricing, quality, market reach and appeal (Acharya & Acharya, 1995). According to

Weatherspoon and Reardon (2003), trade liberalisation is an obstacle to viable rural non-farm livelihood diversification since the local enterprises are out-competed by the giant multinational companies. Kristiansen (2004) also argues that lack of knowledge of and access to business information makes small-scale businesses in developing countries vulnerable to liberalisation and increased global competition.

In addition to the above, due to low specialization, rural non-farm enterprises are not innovative. In the capitalist world, competition is very important and as such firms must adapt new technologies and exploit labour to accumulate more profits to stay in business (Saith, 2001). However, this is not the case with rural non-farm enterprises where household-based techniques and forms of production are used (Saith, 2001). According to Kristiansen (2004), small-scale African entrepreneurs copy the brands of other imported products rather than being innovative and this presents them with stiff competition with the imitated companies.

### **Empirical Review**

In Ghana, almost 3,200,000 households representing 46.4 percent of the total households operate non-farm enterprises with 48 percent of these enterprises located in the rural areas (GSS, 2008). Also, about 72 percent of the non-farm activities are operated by females. Dary and Kuunibe (2012) made a similar argument in a cross-sectional study on incidence of participation in rural non-farm enterprises in Ghana. Out of the 172 respondents randomly sampled for the study, 83 percent were engaged in rural non-farm activities while the rest (17%) were

not into it. The study found that, out of an average household size of 7 members, 3 members, on average, were engaged in rural non-farm enterprises.

Smith, Gordon, Meadows and Zwick (2001) studied livelihood diversification in Uganda. A variety of qualitative research techniques were employed for the study. The data for the study were collected with semi-structured interviews, key informant discussions, participatory observation and transect walks. The analysis of the determinants of livelihood diversification across the two districts revealed the importance of social capital. It was found that, whilst there are many strands to social capital, the most noticeable means for non-farm livelihood diversification, enhancement and differentiation within the communities studied was the small informal groups or associations which rely upon norms, obligations, reciprocity and trust to survive. Similar finding was reported by Langouw, Quizon, and Sparrow (2001). Membership of associations and social ties were used to the economic benefit of the members and related households. Davis (2002) also noted the importance of friendship or kinship relationship for non-farm livelihood diversification.

Beyene (2008) studied the determinants of non-farm participation decision of farm households in Ethiopia. The survey research design was used and data were taken from the 1999 Ethiopian Rural Household Survey. A total of 1681 farm households were randomly selected from 18 rural peasant associations from four administrative regions. Using a bivariate probit model, he sought to find the determinants of household diversification in non-farm activities. The results found that, health condition, credit, farm size and training in non-farm activity were



significant determinants for non-farm livelihood diversification. Education was however, not a significant determinant of non-farm livelihood diversification.

Similarly, Man and Sadiya (2009) studied the relationship between the determinants of non-farm employment and non-farm participation decisions. Their study also examined the income level of farm households which are attributed to farming activities and non-farm work with a further look at the effect of participation in non-farm work on paddy farmers. The study used descriptive and logit models for its analyses and estimation. A total of 500 paddy farmers were selected using a stratified random sampling technique. The findings of the study reported that, farmer's age, gender, family size, income type were significant variables that influenced the likelihood of farm households to diversify in non-farm activities. Conversely to Beyene (2008) findings, farm size however, was not a significant determinant for non-farm diversification.

Babatunde and Qaim (2010) equally studied the driving forces and household access to non-farm labour market participation in Nigeria. The objectives of the study was to look at the determinants of farm household diversification in non-farm work and the factors influencing the magnitude of incomes from different sources. A cross-sectional survey of 220 households in Kwara State which was collected in 2006 was used. A multivariate probit model was then used for estimation and analysis of the disaggregated non-farm activities. Variables used included household size, sex, education, infrastructure, market and productive assets.

The results of the study indicated that 90 percent of farm household sampled had some non-farm income which accounted for 50 percent of total household income. Also, the share of non-farm income was positively correlated with overall income. Household members with little or no education and no access to market were constrained in their ability to diversify in non-farm economic activity. The positive influence of education on non-farm diversification has also been reported by Saha and Bahal (2010), Asmah (2011) in Ghana, and in Southern Ethiopia by Eneyew and Bekele (2012) opposing earlier studies that education was not a significant determinant of non-farm livelihood diversification (Beyene, 2008; Man & Sadiya, 2009). Again, the positive influence of market is reported by Asmah (2011).

Nasa, Atala, Akpoko, Kudi and Sani (2010) conducted an analysis of factors influencing livelihood diversification among rural farmers in GIWA local government area, Nigeria. Multi-stage sampling technique was used to select 120 households for the study. The study applied the quantitative research design and data were collected with questionnaires. The analysis was done using descriptive statistics (percentage, frequency counts and means), logistic regression model and chi-square test. The study found that the main reason why rural people practice non-farm livelihood diversification was to raise household income portfolio which corroborates that of Gordon and Craig (2001). Other reasons cited by the respondents for non-farm diversification included; food security (19.7%), risk aversion (18.8%) and family necessity (14%).

With respect to the factors influencing farmer's livelihood diversification, the researchers grouped the variables into two categories; institutional and environment factors. Proximity to cities, market, credit and farmer organizations were variables used for the institutional factors. It was found that, market and proximity to cities did not significantly influence livelihood diversification at 5% probability levels. Amount of credit and belongingness to farmer organization were found to significantly influence rural people decision to diversify activities from farming. In analyzing the environmental variable, factors such as natural resource, access to land, natural disaster, physical proximity and season of the year were used. All the variables were found to significantly influence rural household's decision to diversify activities. Among the environmental factors, natural disaster had the highest probability of influencing rural household diversification. Lastly, chi-square test was used to determine whether diversification had a relationship with rural poverty reduction. It was found that livelihood diversified households adopt less severe coping strategies to cope with food insecurity than non-diversified households.

In a much recent publication, Ifeanyi-Obi and Matthews-Njoku (2014) studied socio-economic factors affecting choice of livelihood activities among rural dwellers in South East Nigeria. A multi-stage sampling technique was used to select 160 rural dwellers for the study. Data was collected with the aid of structured interview schedules, focused group discussion and personal observation. The data were analyzed using descriptive statistical tools such as mean, frequency count and percentages. Also, ordinary least square multiple

regression analysis was used to identify the socio-economic factors influencing choice of livelihood in the area. The study revealed that only two livelihood activities; farming and trading were significant in the area which corroborates the finding of Kristiansen (2004).

On the socio-economic factors affecting choice of livelihood, the results of the ordinary least square multiple regression showed that the coefficient of gender, marital status and household size did not significantly explain livelihood diversification. Age was positively significant at both 1% and 5% probability level implying that older people were engaged in farming. Education and income correlated negatively with farming activities and was significant at both 1% and 5% probability levels. This meant that more educated rural dwellers abandon farming for non-farm diversification as postulated by Khatum and Roy (2012). Also, rural dwellers who earn higher income diversify from farming to non-farm activities as found by Adi (2007).

Nagle and Naude (2014) studied non-farm entrepreneurship in rural Africa, using the World Bank's unique LSMSI-SA dataset in six countries; Ethiopia, Malawi, Niger, Nigeria, Tanzania and Uganda. A regression analysis was used with a sample of 11,064 non-farm enterprises in 8,137 rural households. The findings of the study cast doubt on the job creation potential of rural non-farm entrepreneurship. The vast majority of non-farm enterprises surveyed were small household enterprises with over 80 percent of the enterprise owners reporting that they do not employ any non-household worker, and less than 3 percent employ 5 or more non-household members. Also, between 91 and almost

100 percent of non-farm enterprises studied were operating informally without a license. It was further found that, households that have experienced food shortages were 2.3 percent more likely to operate a non-farm enterprise comparatively.

Appiah et al. (2014) studied the determinants of peri-urbanization and land use change patterns in peri-urban Ghana. Household questionnaires were proportionately administered to 270 respondents in 14 communities in the Bosomtwe district of Ashanti Region. The data were analyzed with binary logistic regression and Chi-Square test. It was found that, the likelihood of respondents to change their land use from agriculture was about 66 percent. Increasing rate of peri-urbanization was caused by increasing demand for residential, recreational (Hotels and Guest houses) and commercial land use at the expense of agro-forest land use.

This supports earlier studies by Mandere et al. (2010) that the growing population in the peri-urban area was as a result of the positive economic development (banking, health care, education, roads) which has resulted in a reduction in agriculture land holding size. They advanced that most of the households have adopted non-farm activities and draw over 80% of their income from the sector. Lanjour et al. (2001) reported similar results in Tanzania and further stated that overall non-farm income in the peri-urban areas were not different from that of rural communities. However, they noted that men earn higher income in non-farm livelihood activities than females.

Katega and Lifuliro (2014) assessed the role of rural non-farm activities on poverty alleviation in Tanzania. A cross-sectional field survey was administered to 341 households in two villages in Dodoma Region. Interviews were also conducted with key local informants. The main findings of the study were as follows: (1) the principal factors affecting the performance of non-farm activities included inadequate capital, lack of business education, poor business premises, inefficient transport to and from markets, and women's household gender roles; and (2) rural non-farm activities contributed a significant share of total income in participating households and enabled these households to purchase food and consumer goods, pay for medicine and health care, pay for the education of children, as well as invest in farm inputs to enhance the productivity of agricultural activities such as crop farming and livestock keeping. The study concludes that rural non-farm activities play an important role in alleviating both income and non-income poverty. The findings are consistent with those found by Madaki and Adefila (2014) in rural Nigeria.

Mesele (2016) assessed rural non-farm livelihood diversification in Saharti Samre Woreda, Ethiopia with a cross-sectional survey design of farm households. Both purposive and simple random sampling techniques were employed and the data were gathered with key informant interview, focus group discussions and interview schedule. The data were analyzed using descriptive statistics (frequencies, distributions and percentages) and Chi-Square. The study found that, although farming households predominantly pursue agriculture as their major livelihood strategy, they also pursue non-farm livelihood activities.

Factors regarded as push rather than pull were significant determinants of non-farm livelihood diversification. These factors included; household size, land holding size, seasonality and increasing price of agricultural inputs. On the constraints of non-farm livelihood diversification, the study noted credit, low opportunities, skills deficiency and capital as major constraints. Other constraints were low means of income and fear of loss of land. The support of government towards the development of the non-farm livelihood activities was found to be very weak.

### **Lessons Learnt**

The study draws important lessons from the empirical review with respect to non-farm livelihood diversification. Most of the studies (Ifeanyi-Obi & Matthews-Njoku, 2014; Katega & Lifuliro, 2014; Mesele, 2016) on non-farm livelihood diversification used the mixed method approach of research. The sampling procedures also conformed to the use of the mixed method approach. The empirical review indicates the use of proportionate, purposive and simple random sampling in which primary data were sought for analysis. However, few studies employed secondary data and hence did not employ sampling as a technique in the methodology. The analytical tools used for quantitative analysis included regression analysis, Chi-square test and descriptive statistics, while qualitative narratives and themes were also used to support the quantitative analysis.

The empirical studies established that both 'push' and 'pull' factors influence rural households decision to diversify into non-farm livelihood activities. For instance, some individuals are attracted by the incentives offered in the non-farm sector while others are pushed into the non-farm sector due to inadequate opportunities in farming. A number of variables covering; human, physical, natural, financial and social capital contribute to non-farm livelihood diversification though some of these variables are contested in the literature. Again it came out that livelihood diversification into non-farm activities plays a vital role in enhancing household income and poverty reduction. The non-farm sector, although very important for rural development, faces some constraints such as; credit, low opportunities and poor infrastructure. The dual relationship between economic growth and non-farm livelihood diversification was also pointed out in literature. However, after a careful study, it was noticed that most of these studies were limited to the rural communities in Africa.

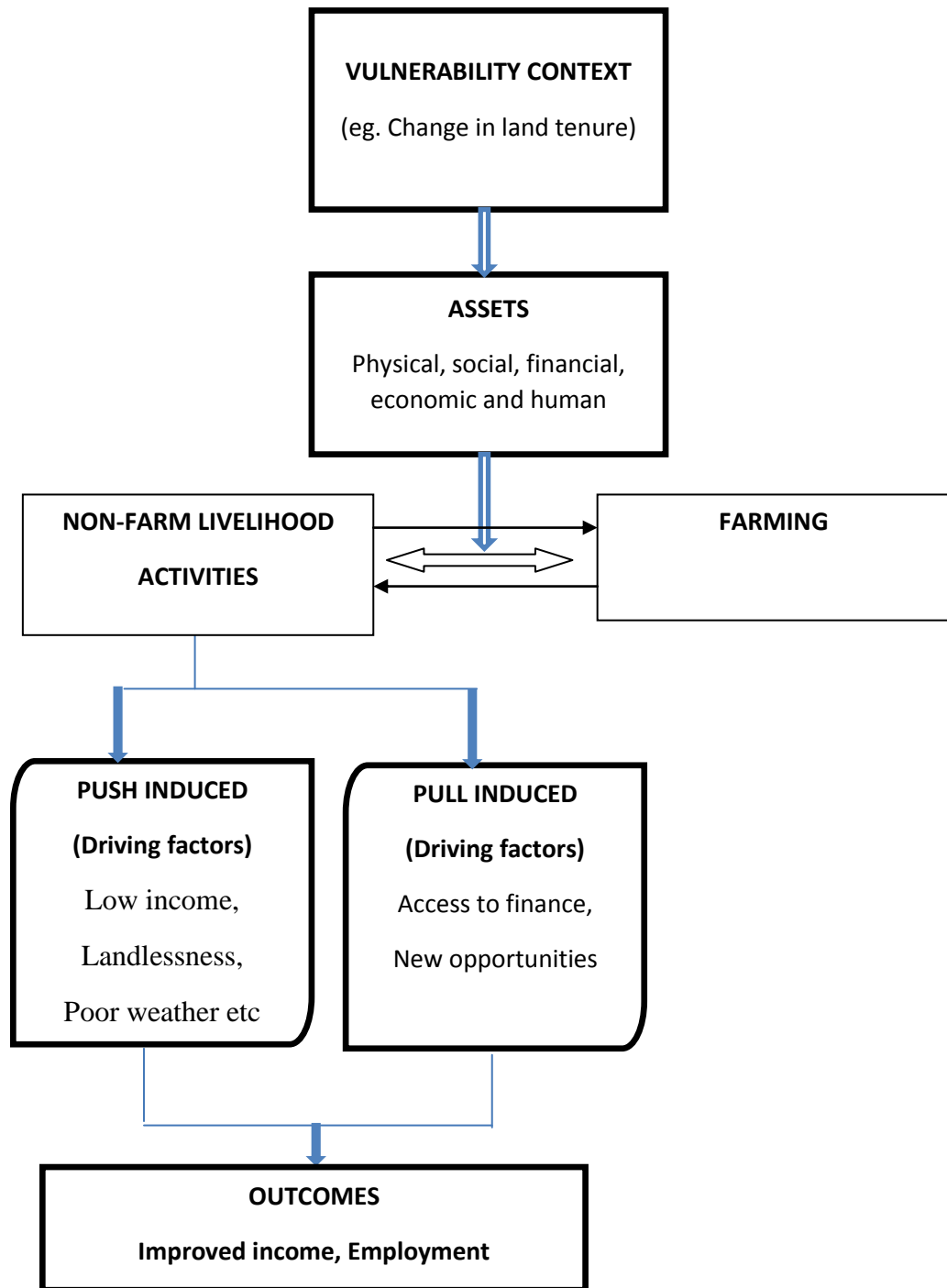
### **Conceptual Framework**

The conceptual framework for the study of non-farm livelihood diversification is adapted from the sustainable livelihood framework (DFID, 2000). In the adapted framework, livelihood strategies have been categorized as either being farming or non-farm livelihood diversification. The study perceived non-farm livelihood diversification as a mechanism that the rural and peri-urban farmers in the Sunyani West District consciously adopt for survival and improvement in their standard of living either as a result of low returns from



farming or in an attempt to capture new business opportunities (asset-based or insurance-based). Most rural households decide to engage in non-farm activities as a strategy to raise their income (Assan, 2014). Other studies show that adaptation of non-farm livelihood diversification strategies is based on efforts to create alternative enterprises that can mitigate shocks and stress (Barrett et al., 2001; Dary & Kuunibe, 2012; Ellis, 2000).

According to Freese (2010), changes in factors such as human capital, household characteristics, external and local factors, and financial capital endowment affects an individual's choice of livelihood. The sustainability of livelihood strategies of rural farmers is determined by their access, use and establishment of different type of resources (Katega & Lifuliro, 2014). The said resources cover diverse stocks of capital including; financial, human, social, natural and physical capital that can be applied either directly or indirectly in livelihood generation (Ellis & Freeman, 2004). The availability and application of these resources is vital for rural farmers' participation in non-farm activities which results in improvement in income and employment. Based on the individual's endowments, mediated by the institutions, the person will either seek to accumulate income to increase well-being (demand-pull) or engage in a survival strategy to smoothen income and consumption (distress-push).



**Figure 2: Conceptual Framework on Non-farm Livelihood Diversification**

Source: Adapted from DFID (2000)

## Summary

The chapter provides an overview of the theoretical and empirical literature on non-farm livelihood diversification in Africa. It started with the theoretical section where three theories were reviewed to explain why people may opt for livelihood diversification in non-farm enterprises. First, the asset-based diversification theory which focuses on the assets that people have and the strategies they adopt to make a living formed the base of the study. The insurance-based diversification theory which also posit that individuals diversify in order to mitigate the shocks and income failures was reviewed. The aforementioned theories are linked to the sustainable livelihood framework (Key feature of SLA) which explain that rural livelihoods are influenced by three factors (capital stock a household is endowed with, livelihood activities the household chooses and the external environment) that determine the outcome of a households' portfolio of activities and income source. Third, the structural transformation theory that postulate a shift from agricultural to non-agricultural activities as an economy develops was also considered for the study.

With the conceptual literature, livelihood diversification and non-farm activities were reviewed. The importance of non-farm diversification, emphasizing the vital contribution of self-employment to rural household income was discussed. The determinants of non-farm diversification were also presented with a focus on the two motives for diversification: either due to necessity or in pursuit of opportunities. The composition of the non-farm sector and the constraints of rural non-farm livelihood diversification were also discussed. The

available literature points that empirical studies on non-farm livelihood diversification in the context of peri-urban communities in Africa continue to be scarce and only inadequate knowledge exists on livelihood diversification in rural areas of Sub-Saharan Africa.

## CHAPTER THREE

### METHODOLOGY

#### **Introduction**

The successful outcome of the report of any scientific study largely depends on, and is a direct function of, the quality and accuracy of data collected and used during the research. This chapter covers the research procedure used in the study which include; the research design and profile of the study area. Also discussed in the chapter are the data requirements, sampling procedures, data collection and how the data were processed and analysed.

#### **Research Design**

Considering the nature of the research problem and purpose of this study, the mixed research design was used. All the objectives of the study were analysed with some form of quantitative approach. However, much of the analysis in respect of the constraints to non-farm livelihood diversification were analysed qualitatively. Nonetheless, the study was tilted towards the quantitative approach of research. Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques (Muijs, 2010). Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon (Babbie, 2010).

Specifically, the cross sectional survey design was employed because of the limited time and inadequate funds to embark on extensive survey. The cross sectional survey is usually designed to study a phenomenon, situation or issue by taking a cross section (representative) of the population at one point in time (Becker, Bryman & Ferguson, 2012). Using a survey design implies that the researcher has a clear view of the phenomena being investigated before the data collection was done. A major strength of using a survey design, according to Krosnick, Presser, Fealing, Ruggles and Vannette (2015), is that a survey work can be used for both exploratory and descriptive purposes and also allows for direct contact between the researcher and the respondents of the study during the process of data collection. It further helps in obtaining detailed and precise information from the respondents.

Though the survey design comes with these advantages, it has also got its weakness. Respondents might not give true responses to some or all of the questions posed. This is due to the fact that survey design depends on reports of behaviour rather than observation of the behaviour. Sometimes respondents find it difficult to give answers to questions they find sensitive such as age and sexual behaviour. According to Singleton, Straits & Straits (1993), the result of this problem is that of measurement error brought about by respondent's lack of truthfulness, not understanding the questions or worse of all not being able to recollect past events and situations accurately. To address this weakness, the purpose of the study was well explained to the respondents.

## Study Area

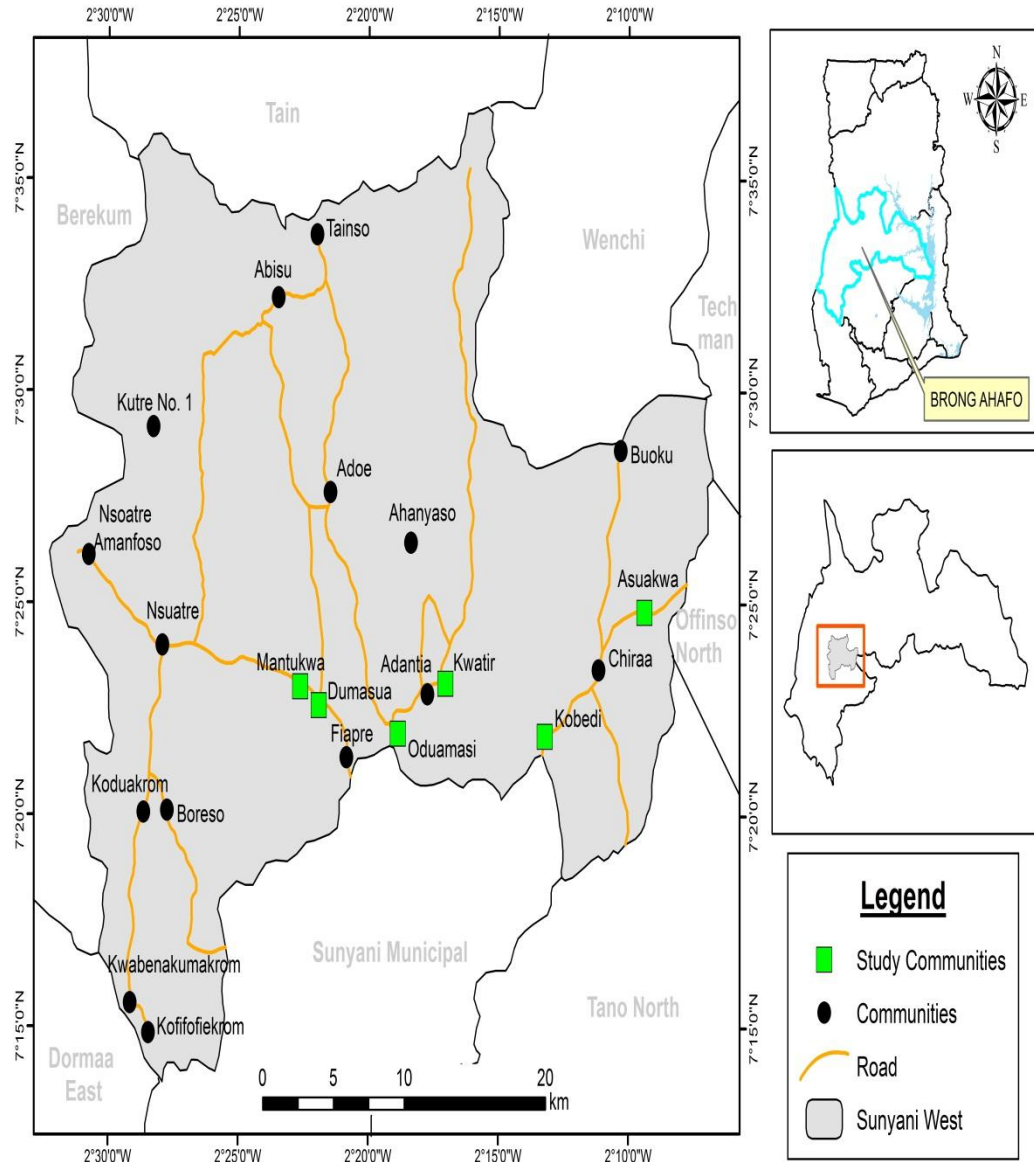
The study area is the Sunyani West District. The District was carved out of Sunyani East District (now Sunyani Municipal), and is one of the 27 Districts in the Brong Ahafo Region of the Republic of Ghana. The administrative capital of the District is Odomase. Geographically, the District lies between latitude  $7^{\circ}19'N$  and  $7^{\circ}35'N$  and longitudes  $2^{\circ}08'W$  and  $2^{\circ}31'W$  and shares boundaries with Wenchi Municipal to the North, Offinso North to the East, Sunyani Municipal to the South, Berekum Municipal to the West, Dormaa Municipal, Dormaa East to the South-West and Tain District to the North-West (GSS,2014). The District has a total land area of 1,059.33 square kilometers and occupies 4.2 percent of the total land area of the Region. The population of Sunyani West District is at an annual growth rate of 2.2 percent is projected to be 96,527 as at 2016. Females constitute 51.5 percent and males represent 49.5 percent. The total age dependency ratio (dependent population to population in the working age) for the District is 74.9. The district has a household population of 84,630 with a total number of 10,715 households and an average household size of 4.3 people (GSS, 2014).

Administratively, the secretariat of the district forms the central administration. The Assembly has two Urban Councils (Nsoatre and Chiraa), one Town Council (Fiapre) and four Area Councils (Koduakrom, Awuah-Dumase, Odomase No.1 and Dumassua). These substructures ensure that governance is brought closer to the people. The District is cosmopolitan with a cross section of many ethnic groups including foreigners with Boron (Brong) being the major

ethnic group in the District. The traditional authority is the embodiment of the culture and customs of the people of the area. Sunyani West District has three paramountcies (Odomase I, Awua-Domase and Nsoatre), Fiapre Traditional Area and a divisional area of Dormaa Traditional Council at Chiraa. In spite of the ethnic and religious diversity of the population, the inhabitants coexist in peace and unity which has supported the socio-economic development of the District (SWDA, 2016).

With respect to occupation, about 47.1 percent of the employed population in the District are engaged as skilled agricultural, forestry and fishery workers, 20.0 percent in service and sales, 12.0 percent in craft and related trade, and 9.6 percent are engaged as managers, professional, and technicians. As a dominant occupation, about 60.4 percent of household in the district are engaged in agriculture. The District has been technically and agriculturally divided into three zones, namely Chiraa, Nsoatre and Odumase. The zones have an average of about 35-40 communities, with many rural dispersed settlements. Ninety-five percent of the communities are engaged in farming (SWDA, 2017). Most households in the district are involved in crop farming whereas many more others are into livestock production. Cash crops grown in the district also include cocoa, oil palm, citrus and lately mango and Cashew (MoFA, 2017). Figure 3 is the map of the District.





**Figure 3: Map of Sunyani West District, Showing the Study Communities**

Source: Department of Geography and Regional Planning, UCC, 2017

### **Target Population**

The population for the study was made up of farmers in the Sunyani West District in the Brong-Ahafo Region of Ghana. The target population was composed of farmers who had registered in the e-agriculture programme undertaken by the Department of Agriculture of the Assembly (SWDA, 2017). This is made up of farmers from the 3 agriculture operational zones. The e-agriculture programme was not restrictive and opened to all categories of farmers in the district. It was the only sample frame on farmers available at the time of the study. Other farmers who were not registered in the e-agriculture programme were included in the Focus Group Discussions.

### **Sample and Sampling Procedures**

The multistage sampling technique was used to select the subjects for the study. A combination of purposive, proportional, and simple random sampling procedures was applied to select the specific study communities, and sampled farmers. First, the district was stratified into three based on the operational zones of the Department of Agriculture (Nsoatre, Odumasi and Chiraa). Second, one rural and peri-urban community were purposively selected from each of the zones. The selection criterion was dependent on the communities with the highest numbers of persons registered on the e-agriculture programme. The six communities sampled (Odumasi No. 1, Kwatri, Dumasua, Mantukwa, Chiraa-Asuakwaa and Kobedi) had a total of 770 registered farmers. The Krejcie and Morgan's (1970) table was used to determine the sample size of 260 respondents

for the study. A proportion was given to each of the three zones depending on the population of farmers in the given sample frame. Additionally, proportions were assigned to the communities (rural or peri-urban) within each zone base on their population in the sample frame. Finally, a simple random sampling technique was used to select a sample of 260 farmers for the study (Table 3). Again a group of 16 comprising officers of the Assembly, representatives of the FBOs, persons operating non-farm enterprises were used for two focus group discussions [FGD] at the Odumasi and Chiraa zones. The average participation was 8 persons per FGD.

**Table 3: Distribution of Sample by Community and location**

Zone	Population in sample frame			Sample per location		Total Sample
	Rural	Peri-urban		Rural	Peri-urban	
Nsoatre	277	101	176	34	60	94
Odumasi	276	196	80	66	27	93
Chiraa	217	119	98	40	33	73
Total	770	416	354	140	120	260

Source: Field survey, Asare (2017)

### Data Collection Instruments

The data for the study were gathered from both primary and secondary sources. Primary data were collected from the sampled farmers using a structured interview schedule and FGD guide. The interview schedule was chosen over the

questionnaire because the study was done in the rural and peri-urban setting where about 20 percent of the people were illiterate (GSS, 2014). This approach guarded against possible misunderstanding or misinterpretation of the items in the instruments, which might lead to erroneous conclusions.

The items on the interview schedule were based on the specific objectives of the study. The interview schedule had five sections (Appendix B). This allowed for a logical analysis of the objectives and to answer the research questions. All sections of the interview schedule comprised closed-ended and open-ended questions. The set of possible responses provided in the instrument were informed by literature. Section 1 gathered data on the background characteristics of respondents. Section Two identified the livelihood strategies in the study area. In Section Three, questions that sought data on the factors that influenced farmers' decision to diversify into non-farm livelihood activities were asked, while Section Four examined the outcomes of non-farm livelihood diversification. The last Section solicited the constraints of non-farm livelihood diversification in the district.

With respect to the qualitative data, FGDs were conducted to obtain supplementary information through a guide (Appendix C). The items in the guide covered issues relating to non-farm livelihood strategies in the district; factors that influenced non-farm livelihood diversification; constraints to non-farm livelihood diversification and the employability of the non-farm enterprises. Secondary data in the form of reports, medium term development plan, composite budget and list

of farmers were also collected from the District Assembly and the Department of Agriculture.

### **Pre-test**

Before the data collection exercise, the structured interview schedule was pre-tested on 10 conveniently sampled farmers at Effutu, a rural community in the Cape Coast Metropolis, to ensure consistence and clarity of the instrument. Effutu was selected for the pre-test because it had similar characteristics with the study area. This was to test the suitability and reliability of the research instrument as well as to check any inconsistencies in the instrument. The pre-test enabled the researcher to revise some questions that were difficult to be interpreted in the local dialect. Also, some open-ended questions were modified into close-ended questions.

### **Fieldwork**

The field work was undertaken from 13<sup>th</sup> February, 2017 to 26<sup>th</sup> February, 2017 and covered a period of 14 days. The data were collected by me with the help of a National Service Personnel of the Department of Agriculture who is knowledgeable about the research area. He assisted me in identifying the sampled farmers. The instruments were administered in the local dialect, Twi or Brong. The problem the researcher encountered during the field work was the difficulty in reaching out to the respondents because most of them left home early in the morning to their farm. The exercise was, however, successful despite the challenges.

### **Ethical issues**

The researcher was introduced to the management of the Sunyani West District Assembly by the Social Laboratory Coordinator of the Institute for Development Studies, University of Cape Coast (UCC) in order to gain their consent and to acquire permission to conduct the study. The researcher adopted an ethical community entry approach, where prior meetings were held with the Assembly Members of the communities of study to introduce the study to them and also to gain their approval and support to conduct the study in their area. Respondents who participated in the study were briefed on the objectives of the study and their consent was sought. Confidentiality was also adhered to.

### **Data Processing and Analysis**

The administered interview schedules were carefully edited and coded. The edited data were then processed and analyzed with the Statistical Product and Service Solutions (SPSS version 21). An analytical approach that comprised quantitative and qualitative methods were used. Quantitative data were analysed using statistical tools such as descriptive statistics (frequencies) and cross tabulation. Besides, binary logistic regression analysis was used to examine the factors that influenced non-farm livelihood diversification in the district. The difference in income for the respondents was examined using the independent samples t-test and the one-way analysis of variance. Thematic analysis was used to analyze the qualitative type of data to support the quantitative analysis.

## Chapter Summary

This chapter looked at the methodology used for the study. The mixed method with a tilt towards the quantitative research design rooted in the positivist paradigm of social science was used. Specifically, the cross-sectional survey design was used for the study. Primary data was collected from the Sunyani West District which happens to be the study area. Secondary data were also collected from relevant institutions to support the study. The instrument used for the data collection was an interview schedule and FGD guide. A pre-test of the research instrument was first conducted on 10 conveniently sampled farmers at Effutu, a rural community in the Cape Coast Metropolis. With respect to the analysis, statistical analysis such as cross tabulation, charts, binary regression analysis, independent sample t-test and Kruskal-Wallis test were employed.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### **Introduction**

This chapter deals with the analyses of the survey data and the interpretation of the results. Results of statistical significance and practical importance are explained as they pertain to non-farm livelihood diversification in the Sunyani West District. A total of 251 farmers from six communities in the district were available for the administration of the interview schedule. This represented a response rate of about 96 percent. The District Planning Officer, District Director of Agriculture, members of Farmer Based Organisations [FBOs] and some persons who owned non-farm enterprises were also available for the FGD. The first section presents background data about the respondents. The second section looks at the description of the non-farm activities in the study area, followed by the factors influencing non-farm livelihood diversification, the outcomes of non-farm livelihood diversification and the constraints to non-farm livelihood diversification in that order.

#### **Background characteristics of respondents**

The background characteristics of the respondents that were examined include sex, age and educational background. Other characteristics included the number of dependents. These variables were examined in order to provide a basis for differentiating between responses, since aggregated responses may exclude some pertinent isolated concerns. Besides, variable such as sex, age and education were examined as part of the determinants of non-farm livelihood diversification.



The sex of the respondents was examined in association with household head as one of the background information. This was done in order to establish a general overview of the characteristics of the respondents that were included in the study. All the 251 respondents provided information on their sex and their status in the household. The result shown in Table 4 depicts that, the respondents comprised 58.6 percent males and the remaining were females.

**Table 4: Sex of Respondents by Household Head**

Status in household	Sex		Total
	Female	Male	
	No (%)	No (%)	No (%)
Household member	44(42.3)	3(2.0)	47(18.7)
Household Head	60(57.7)	144(98.0)	204(81.3)
Total	104(100.0)	147(100.0)	251(100.0)

Chi-square = 62.2, df = 1,  $\alpha$  = 0.05, p-value = .000

Source: Field survey, Asare (2017)

The results further show that, a relatively greater proportion of the household heads were males (98.0%) compared to 57.7 percent of females who were household heads which indicates clearly the dominance of male household heads over female household heads in the study areas. The result is consistent with the traditional system pertaining to the Region and most rural and peri-urban areas in Ghana where men are bread winners of their families and as a result, control resources of their respective families.

The study also examined the age of the respondents. All the 251 farmers provided their age. While the youngest farmer was 20 years, the oldest was 84 years. The median age of the respondents was 42 years (mean = 45 years, skewness = .563) with a quartile deviation of 18 years. The skewness (.563) of the distribution of age shows that the majority of the farmers were younger than the mean age (45 years). These figures imply that majority of the respondents in the study area were young people. It suggests that in the Sunyani West District young people were also found in the agriculture sector.

Apart from sex and age, the study also looked at the educational attainments of respondents. The examination of the educational background of the respondents covered all the 251 respondents. As was expected, the majority (55.4%) of the respondents were educated up to the basic level (JHS/Middle school). About one-fifth (19.9%) of the respondents had no formal education. On the other hand, 12.4 percent of the respondents had either SSS/Voc/Tech. (10.4%) or Post-secondary (2.0%) education (Table 5). Generally, majority of the farmers in the district had low levels of education. This may be due to the relatively less technical expertise required for an individual to engage him/herself in farming. The number of respondents with no formal education reflects the 20.4 percent illiteracy rate of the district (GSS, 2014).

**Table 5: Educational Characteristics of Respondents by Sex**

	Sex		Total
	Male	Female	
Educational attainment	No (%)	No (%)	No (%)
No school	26(17.7)	24(23.1)	50(19.9)
Primary	16(10.9)	15(14.4)	31(12.4)
JHS/Middle school	82(55.8)	57(54.8)	139(55.4)
SSS/Voc/Tech	19(12.9)	7(6.7)	26(10.4)
University/Post-sec	4(2.7)	1(1.0)	5(2.0)
Total	147(100.0)	104(100.0)	251(100.0)

Chi-square = 4.719, df = 4,  $\alpha = 0.05$ , p-value = .317

Source: Field survey, Asare (2017)

The disaggregated result shows that more than half of both male respondents (55.8%) and female respondents (54.8%) had attained JSS/Middle school level of education. However, the males who had attained secondary education (12.6%) and University education (2.7%) were more than the females who had attained same. The distribution with a Pearson Chi-square test of independence showed no statistically significant difference in respondents' sex and their educational attainments ( $\chi^2 = 4.719$ , df = 4,  $\alpha = 0.05$ , p – value = 0.317). The data collected revealed that the non-farm activities undertaken in the study area were small scale which does not require higher levels of education. This suggests that the farmers in the district had better chances of engaging

themselves in non-farm livelihood activities although they had little chance of gaining paid non-farm employment which requires a relatively higher level of education.

The number of dependents on the farmers was also studied as part of the background characteristics. All the 251 respondents provided responses on the number of dependents they had. While some of the respondents had no dependents, the highest number of dependents per farmer was 15 persons. The median dependents on a farmer was four persons (mean = 5, skewness = .838) with a quartile deviation of four persons. This implies that majority of the respondents had dependents less than five persons.

### **Non-farm livelihood diversification strategies adopted by farmers**

This section of the study describes the non-farm livelihood diversification strategies adopted by farmers in the study area. Farmers participate in different types of non-farm livelihood activities due to various reasons influenced by either push or pull factors. The types of non-farm livelihood activities that farmers engage in vary from one area to another depending largely on the type of resources found in the area. A total of 192 farmers provided responses on their non-farm livelihood activities. The descriptive statistics indicates that a greater percentage (36.5%) of farmers had diversified into trading activities. About 9 percent were into driving/transport activities while food vending and dressmaking recorded 8.3 percent each. Alcohol brewing and craftwork had the least responses of less than one percent (Table 6).

**Table 6: Distribution of Non-farm Livelihood Activities by Sex**

Non-farm livelihood activities	Sex		Total No (%)
	Female No (%)	Male No (%)	
<b>Commerce sector</b>			
Trading	49(57.0)	21(19.8)	70(36.5)
Food vending	16(18.6)	0(0.0)	16(8.3)
Lotto	0(0.0)	3(2.8)	3(1.6)
Firewood/ Charcoal	1(1.2)	2(1.9)	3(1.6)
Drinking spot	1(1.2)	3(2.8)	4(2.1)
<b>Manufacturing sector</b>			
Processing of farm produce	0(0.0)	2(1.9)	2(1.0)
Soap making	2(2.3)	0(0.0)	2(1.0)
Alcohol brewing	1(1.2)	0(0.0)	1(0.5)
Craft work	0(0.0)	3(2.8)	3(1.6)
<b>Service sector</b>			
Masonry	0(0.0)	15(14.2)	15(7.8)
Carpentry	0(0.0)	9(8.5)	9(4.7)
Driving/Transport	0(0.0)	19(17.9)	19(9.9)
Dressmaking	10(11.6)	6(5.7)	16(8.3)
Electrician	0(0.0)	3(2.8)	3(1.6)
Vulcanizing	0(0.0)	2(1.9)	2(1.0)
Milling	0(0.0)	3(2.8)	3(1.6)
Hairdressing/ Barber	6(7.0)	1(0.9)	7(3.6)
Metal fabrication	0(0.0)	6(5.7)	6(3.1)
Bicycle/Motor repair	0(0.0)	7(6.6)	7(3.6)
Other	0(0.0)	1(0.9)	1(0.5)
Total	86(100)	106(100)	192(100)

Chi-square =108 .19, df = 19,  $\alpha = 0.05$ , p-value = .000

Source: Field survey, Asare (2017)

It appears that trading and farming were the most prominent livelihood activities in the district. This might be as a result of the fact that there were less entry barriers in terms of skill and start-up capital required for these activities. This supports earlier findings by Ifeanyi-Obi and Matthews-Njoku (2014) and

Mbah and Igbokwe (2015) that farming and trading are the major livelihood activities pursued by rural dwellers. Other non-farm activities mentioned during the focus group discussion included pottery, photography/videoing, decorations, shoe making, scrap work, clay molding and blacksmith.

Dary and Kuunibe (2012) found that, by tradition and social orientation, some individuals are restricted from certain non-farm livelihood activities because of their sex. The disaggregated results, as shown in Table 6, shows that, non-farm activities such as masonry, carpentry, driving/transport, electrician, vulcanizing, lotto, milling, metal fabrication and bicycle/motor repairs were activities performed by males only. On the other hand, activities such as soap making and food vending were reserved for females. Trading and dressmaking were non-farm livelihood activities performed by both sexes, with females, however, dominating with a greater proportion (57.0% and 11.6% respectively) as compared to only 19.8 percent for trading and 5.7 percent for dressmaking. The difference in the distribution was found to be significant ( $\chi^2 = 108.19, df = 19, \alpha = 0.05, p - \text{value} = 0.000$ ). This implies that the sex of rural farmers prevented them from diversifying into certain non-farm activities. The result corroborates that of Dary and Kuunibe (2012) finding that cultural orientation on sex affects the livelihood activities for males and females.

It came out at the focus group discussions that this trend may not change anytime soon as males and females preferred to operate in their dominant activities. A 49 year old male participant from the Farmer Based Organisation (FBO) indicated that:

*It will be funny if I start preparing and selling cooked food. The people will even laugh at me because women are supposed to cook and do the easy work while men are to engage in the hard work like masonry. I do not think my wife will also attempt driving or masonry as a livelihood option even though she complains that the petty trading is not lucrative. I believe that men should do men work and women also allowed to do their work. This is how it has been from one generation to the other (Farmer at Odumasi No. 1; February, 2017)*

#### Primary occupation

As part of identifying the non-farm livelihood activities pertaining in the study area, this section examines the primary occupation of the respondents. Out of the 236 farmers who provided responses, evidence in Table 7 shows that, the majority (53.4%) of them considered farming as their primary occupation. The rest of the respondents were into non-farm livelihood activities as their main occupation with farming as their secondary occupation. However, those with non-farm livelihood activities as the primary occupation mentioned that they switched their occupation due to the constraints (unfavourable rainfall pattern, cost of farm inputs, low demand) in the farming sector. From the results it appears that, farming is the primary occupation for majority of the respondents but the productivity of the sector is less and risky in such a way that most of the farmers

have diversified into non-farm livelihood activities as postulated by the insurance-based diversification theory (Ellis & Freeman, 2004). It further suggests that, majority of the respondents were not confined to only farming but rather combined non-farm livelihood activities. This result agrees with the findings of Ekong (2010) which stated that farming is the major occupation for rural dwellers.

**Table 7: Primary Occupation of Respondents by Sex**

	Sex		Total
	Female	Male	
Primary occupation	No (%)	No (%)	No (%)
Farming	44(43.1)	82(61.2)	126(53.4)
NF activity	58(56.9)	52(38.8)	110(46.6)
Total	102(100.0)	134(100.0)	236(100.0)

Chi-square = 6.880, df = 1  $\alpha$  = 0.05, p-value = .009

Source: Field survey, Asare (2017)

Ajani (2012) argued that females prefer non-farm livelihood activities to farming. The disaggregated results also confirmed that, farming was considered as the primary occupation for a greater proportion of male respondents (61.2%) compared to 43.1 percent of female respondents. In contrast, the primary occupation of the majority (56.9%) of female respondents was non-farm. The reason may be that, a greater proportion of farmland are owned by men, coupled with their position as household heads which allows them to engage more in



farming as compared to women. It could also be because women preferred household enterprises to farming so that they could have time to honour their reproductive roles. A Pearson Chi-square test of homogeneity showed significant difference between respondents' sex and their primary occupation ( $\chi^2 = 6.880, df = 1, \alpha = 0.05, p - \text{value} = 0.009$ ).

### **Factors influencing farmers' decision to diversify to the non-farm sector**

This section of the study examines the specific factors that influence farmers' decision to diversify into non-farm activities. A number of factors influence farmers' decision to diversify their livelihoods to the non-farm sector. Driving forces of non-farm livelihood diversification might be seen as either push or pull, or choice or necessity induced (Atamanov & Berg, 2012; Cinner et al., 2010; Thulstrup, 2015) as postulated by the asset-based and insurance-based diversification theories (Ellis & Freeman, 2004). Some farmers also diversify their livelihoods to the non-farm sector because they encounter forcing economic circumstances while others diversify due to opportunities brought about by economic development as proposed by the structural transformation theory (Chenery & Syrquin, 1975; Clark, 1940; Fisher, 1939; Kuznet, 1971).

The analysis began with respondents' view about whether they diversified into the non-farm sector to tap opportunities in their communities (pull) or to meet a necessity (push). The respondents were made to indicate what affected their decision to diversify their livelihood into the non-farm sector. The examination covered a total of 193 farmers (Table 8). It was found that about 80 percent of the

respondents were forced into non-farm livelihood activities due to necessity. The remaining farmers diversified into the non-farm sector to take advantage of business opportunities in their communities. The result implies that most farmers in the study area diversified into non-farm livelihood activities due to hardship and the desire to improve their standards of living.

**Table 8: Motive for Non-farm Livelihood Diversification by Location**

	Location		Total
	Rural	Peri-urban	
Motive for non-farm diversification	No (%)	No (%)	No (%)
Necessity	84(82.4)	72(79.1)	156(80.8)
Opportunity	18(17.6)	19(20.9)	37(19.2)
Total	102(100.0)	91(100.0)	193(100.0)

Chi-square = .149; df = 1; p-value = .699

Source: Field survey, Asare (2017)

Given the fact that the study was undertaken in both rural and peri-urban communities, a Pearson Chi-square test of homogeneity was conducted to establish the significance of the differences in the motive for non-farm livelihood diversification with respect to the location of the farmer. The results show that, the motive for non-farm livelihood diversification were similar with respect to location (rural and peri-urban) as 82.4 percent of diversified farmers in the rural communities and 79.1 percent of their peri-urban counterparts cited necessity as the main factor that drove them into the non-farm sector. At the five percent level

of significance, the Chi-square result ( $\chi^2 = 0.149$ ,  $df = 1$ ,  $\alpha = 0.05$ ,  $p - \text{value} = 0.699$ ) showed no significant association between motive for non-farm livelihood diversification and location. It appears that peri-urban and rural farmers in the study area diversified their livelihood into the non-farm sector mainly due to necessity induced factors.

The motives behind non-farm livelihood diversification were further investigated to find the specific reasons for the farmers' decision to diversify into non-farm livelihood activities. This was useful in order to triangulate and confirm the earlier responses the farmers gave on their main motive for non-farm livelihood diversification. Table 9 presents the reasons the farmers gave which were pre-coded based on the literature. The result represents multiple responses from 193 farmers.

**Table 9: Reasons for Non-farm Livelihood Diversification**

Reasons for diversification	Frequency	Percent
Farming risk	190	54.6
Food security	56	16.1
Family necessity	42	12.1
Income	36	10.3
Business opportunity	24	6.9
Total	348*	100.0

\*Multiple responses

Source: Field survey, Asare (2017)

The reasons for non-farm livelihood diversification, as evidenced in Table 9, show that 54.6 percent of the reason for non-farm livelihood diversification is related to risk involved in farming. This was followed by food security (29.0%). The least cited reason for non-farm livelihood diversification in the study area was business opportunities (6.9%). It appears that farmers in the study area diversified their livelihoods into the non-farm sector in order to mitigate risk associated with the farming activities as posited by the insurance-based diversification theory (Ellis & Freeman, 2004). A further study of the reasons given by the farmers revealed that, about 80 percent of them fall under the necessity induced factors (push factors) as found by Naude (2010), Herrington and Kelly (2013) and Mesele (2016) that most self-employment, especially in non-farm livelihood activities in Africa were induced by necessity.

The result can therefore be explained on the following grounds. First, farmer's diversification into non-farm livelihood activities in the study area can be attributed to agricultural risk. It appears that farmers were pushed to diversify their livelihood into the non-farm sector with the aim that when farming failed, the other might provide an alternative. They, therefore, adopted non-farm livelihood diversification as an option to serve as insurance against a possible failure of farming. Second, the adoption of non-farm livelihood activities might provide a sure way of smoothing income and expenditure since reliance on one livelihood activity alone may not be good enough to sustain them.

The above finding from the survey was further corroborated by the focus group discussions. A 46 year old widow who is also a food seller stated that:

*For the past two years the rains always fail us. All the money I spent to cultivate maize including a loan I picked from the savings and loan institution got lost. If some church members had not intervened with the resettlement of the loan, I don't know what would have happened to me by now. I decided from that time to add food vending to the farming since the rains are unpredictable in recent times and also because the returns from the farming activities cannot sustain me. The food vending is less stressful for me as compared to the farming activities (Food vendor at Chiraa Asuakwa; February, 2017)*

The implication of the above quotation is that the non-farm sector may continue to grow in farming communities in view of the limitations in the farming sector.

#### Determinants of non-farm livelihood diversification

This section considers the key determinants of non-farm livelihood diversification in the study area. Several variables are cited in the literature as influencing non-farm livelihood diversification. However, the researcher selected some of the variables that have produced varied results in the literature to verify their effect on the non-farm sector in the Sunyani West District. Binary logistic regression was performed to examine the factors that affect the diversification of livelihood from farm to non-farm activities. The binary logistic regression allows

for easy testing of models to predict categorical outcomes with two categories. The predictor (independent) variables can also be either categorical or continuous or a mix of both in one model (Pallant, 2005). With respect to this study, the dependent variable (non-farm diversification) was coded as:

Non-farm diversification No = (0)

Yes = (1)

The model contained six independent variables (age, membership of association, access to market, monthly farm income, sex and education). The Logit model is presented as:

$$P = \frac{e^{xp(z)}}{1+e^{xp(z)}} \quad - (1), \text{ where } P \text{ is the proportion of occurrence.}$$

$$Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_n X_n \quad - (2)$$

Where  $X_1, X_2, \dots, X_n$  are the explanatory variables. The inverse relation of Equation 1 is:

$$Z = \ln \frac{p}{(1-p)} \quad - (3)$$

That is, the natural logarithm of the odds ratio, known as the logit. It transforms  $P$  which is restricted to the range  $[0, 1]$  to a range  $[-\infty, \infty]$ .

The independent variables are coded as:

$X_1$  = Age (in years)

$X_2$  = Membership of association (0 = no, 1 = yes)

$X_3$  = Access to market (0 = no, 1 = yes)

$X_4$  = Monthly farm income (in GHS)

$X_5$  = Sex (0 = female, 1 = male)

X<sub>6</sub>=Education (0 = no education, 1 = educated)

To be able to use the binary logistic regression, the assumption of multicollinearity, sample size and normality were tested.

Multicollinearity test was performed on the variables as a way of eliminating any correlation between two or more independent variables which may cause error with the research findings. Multicollinearity exists where two or more independent variables are highly correlated with each other such that they measure the same thing but in a different way. When this occurs, the estimated regression coefficients can fluctuate widely, making it precarious to interpret the coefficients as an indicator of the predictor variable (Pallant, 2005). According to Field (2009) when the tolerance values is less than 0.1, it indicates a serious collinearity problem. Field further indicated that when the VIF (Variance Inflated Factor) values for the independent variables exceed 10 then there is a cause for concern. From Table 10, it can be seen that all the tolerance values are higher than the acceptable limit of 0.1 and all the VIF values are essentially less than 10. This gives an indication that the data was free from the problem of multicollinearity.

**Table 10: Test of Collinearity**

Independent variables	Collinearity Statistics	
Model	Tolerance	VIF
Sex	.967	1.034
Age	.889	1.125
Membership of association	.959	1.043
Access to market	.965	1.037
Farm income	.932	1.073
Education	.919	1.088

Source: Field Survey, Asare (2017)

According to Tabachnick and Fidell (2001) the sample size for a regression analysis is given by the formula;  $N > 50 + 8m$  where  $m =$  number of independent variable. For the purposes of this study, the independent variables are 6 in number. By calculation  $N = 50 + 8(6) = 98$ . This indicates that, in order to carry out a regression analysis for this study a sample size of 98 will be sufficient. The sample size of 260 used for this study is therefore sufficient enough to avoid violation of the assumption of sample size for binary logistic regression analysis.

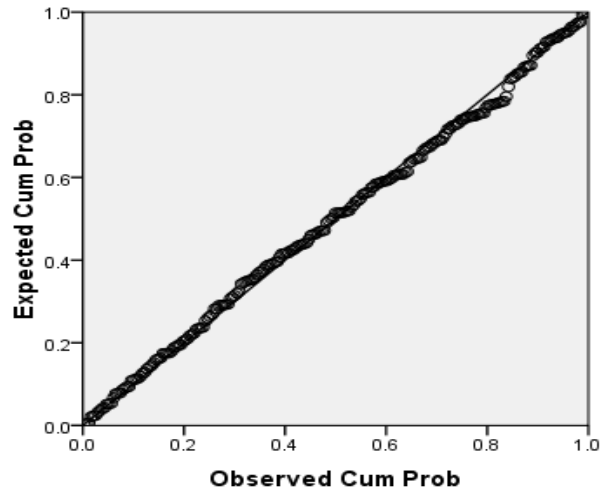
The assumption of normality according Pallant (2005) can be checked by inspecting the residuals scatter plot and the Normal probability plot generated through regression standardized residuals. Pallant noted that for normal probability plot all the points will lie in a reasonably straight diagonal line from



bottom left to right. This will suggest no major deviation from the normality. From the Figure 4 below the data suggest normality.

**Normal P-P Plot of Regression Standardized Residual**

**Dependent Variable: LIVELIHOOD DIVERSIFICATION**



**Figure 4: Normal P-P Plot**

Source: Field survey, Asare (2017)

The model was better than SPSS’s original guess which assumed that every household head will respond “NO” to diversification into non-farm activities  $P(0.00) < 0.05$  and a Chi-square value of 37.570 with 6 degree of freedom. The fitness of the model was supported by Hosmer and Lemeshow test  $\chi^2(N = 251) = 5.49, P(.704) > 0.05$ . The pseudo  $R^2$  shows that the model, as a whole, explained between 13.9 percent (Cox and snell R Square) and 21 percent (Nagelkerke R Squared) of the variance in non-farm livelihood diversification

whiles the remaining percentage was due to factors not specified in the model (Table 11).

**Table 11: Model Summary for Binary Logistic Regression**

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
233.797 <sup>a</sup>	.139	.210

Source: Field survey, Asare (2017)

The Wald test values with their associated probability values for each of the independent variables were as follows: Age = (8.057,  $p = 0.005$ ), Membership of association = (7.003,  $p = 0.008$ ), Access to market = (5.319,  $p = 0.021$ ), Farm income = (6.444,  $p = 0.011$ ), Sex = (2.572,  $p = 0.112$ ) and education = (0.136,  $p = 0.712$ ) (Table 12). The figures imply that, only four of the independent variables made significant contributions to the model. On the other hand, sex of the farmer and education did not contribute significantly to the model. The strongest predictor of non-farm livelihood diversification was membership of association (Exp (B) = 4.4), followed by access to market (Exp (B) = 2.264), monthly farm income (Exp (B) = .999) and age (Exp (B) = .963) in that order.

**Table 12: Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for	
							EXP(B)	
							Lower	Upper
Age	-.038	.013	8.057	1	.005	.963	.938	.988
Association(1)	1.489	.563	7.003	1	.008	4.431	1.471	13.346
Market(1)	.817	.354	5.319	1	.021	2.264	1.131	4.532
Monthly farm income	-.001	.000	6.488	1	.011	.999	.998	1.000
Sex(1)	-.547	.344	2.527	1	.112	.578	.295	1.136
Education(1)	-.148	.402	.136	1	.712	.862	.392	1.895
Constant	3.246	.779	17.375	1	.000	25.684		

Source: Field survey, Asare (2017)

The logistic regression model is presented as:

$$\text{Non-farm diversification} = 3.246 - .039(\text{Age}) + 1.489(\text{Association}) + 0.817(\text{Market}) - 0.001(\text{Farm income}) - 0.547(\text{Sex}) - 0.148(\text{Education})$$

From the model, the age of a farmer negatively explains diversification into non-farm livelihood activities. This implies that rural and peri-urban dwellers participate less in non-farm livelihood diversification and rather engaged in farming activities as they grow old. A unit increase in farmer's age leads to a decrease in the probability of diversifying into non-farm livelihood activities by 0.038, all things being equal. Farmers age significantly explain non-farm livelihood diversification with a p-value ( $0.005 < 0.05$  and Odds Ratio (Exp (B) = 0.963).

The result implies that; age is a determinant which negatively influences farmers' diversification into non-farm livelihood activity in the study area. The reason may be because farmers in the study area still employed local tools, depended on rainfall and were subsistent in nature. This discouraged many young people from farming which resulted in their diversification into the non-farm sector with reasons that farming involved hard work with little returns. On the other hand, the older farmers might lack the strength to combine different livelihood activities and therefore concentrated on farming. The result confirms the finding of Bryceson (2002) in Nigeria that, young farmers prefer to engage in non-farm livelihood diversification compared to older farmers.

Membership of an association positively influenced non-farm livelihood diversification ( $b = 1.489$ ,  $p\text{-value} = 0.008$ ). This suggests that farmers who

belonged to associations had better chances of engaging in non-farm livelihood diversification. The odds of diversifying into non-farm livelihood activities was (Exp (B) = 4.4) indicating that farmers who were members of an association were 4.4 times more likely to diversify into non-farm activities. The null hypothesis that predicts no significant relationship between membership of association and non-farm livelihood diversification was rejected.

The results can be explained by the fact that, social capital broadens the set of employment and entrepreneurial options for individuals. Some surveyed respondents indicated that they were members of associations that championed their welfare and facilitated in the sharing of ideas. Social capital creates mutual trust, improve the flow of information, provide individuals the opportunity to take collective decision and improve the possibility of engaging in partnership which positively contributes to non-farm livelihood diversification. The result is consistent with Smith et al. (2001) finding in Uganda that, small informal groups or associations which rely upon norms, obligations, reciprocity and trust promote non-farm livelihood diversification. It agrees further with Davis (2002) finding that certain non-farm activities do not require great deal of start-up capital, experience or skill, but a friendship or kinship relationship may be the important stimulant.

Likewise, access to market had a direct effect on non-farm livelihood diversification ( $b = 0.817$ ,  $p\text{-value} = 0.021$ ). The positive effect and the odds signify that farmers who have access to market were 2.26 times more likely to diversify into non-farm activities than those with limited access (Exp (B) =

2.264). The result can be explained in two ways. First, for rural and peri-urban farmers, having access to market promoted all kinds of economic activities, either agriculture or non-agriculture. It reduced the transaction costs and risks involved in selling goods and services. As expected, farmers who live in communities with better access to market do not have much cost to access market incentives for non-farm livelihood diversification. It is obvious that, if farmers are unable to reach the markets to sell their non-farm products, they could be discouraged from participating in these activities. Second, the predominant non-farm activity in the study area (trade) required market centres in order to flourish. This finding is consistent with those of Babatunde and Qaim (2010) and Asmah (2011) in Kwara State, Nigeria and Ghana respectively. The authors found that access to market increases the probability of engaging in non-farm livelihood activities. Longer distances to market centres have negative impact on the probability of non-farm employment.

Total monthly farm income had an inverse relationship with non-farm livelihood diversification in the study area ( $b = -0.001$ ,  $P\text{-value} = 0.011$ ). The negative effect shows that a unit increase in monthly farm income led to a decrease in the probability of adopting non-farm livelihood diversification by 0.001, all things being equal. As a farmer's monthly farm income increased, the probability of that farmer participating in non-farm livelihood activities decreased.

The finding implies that, rural and peri-urban farmers who earned higher monthly farm income had less likelihood of diversifying into non-farm activities.

Farmers who earned less income from farming activities rather diversified their livelihood into non-farm activities. This might be as a result of the fact that, having more income from farming activities reduced the pressure to diversify into non-farm activities as a survival strategy. The finding agrees with expectation because, most farmers in the study area engaged in non-farm activities to manage risk and cope with cropping shortfall and not as a result of investment opportunities. The result contradicts the investment linkage between the two sectors, in which case profits generated in one are invested in the other as was found by Reardon et al. (1994).

The structural transformation theory opine that peri-urban farmers have limited access to farm land as a result of high demand of land for nonagricultural activities which pushes farmers into the non-farm sector. It therefore became important for respondents to state whether they had access to farm land. Out of the 251 responses, the majority (53%) related to easy access to farm land while the remaining was on the difficulty in getting farm land. A Pearson Chi-square test of homogeneity further showed no significant difference between respondents' location and their ability to access land for farming ( $\chi^2 = 0.027, df = 1, \alpha = 0.05, p - \text{value} = 0.972$ ). The result implies that the structural transformation theory does not necessary hold in respect of access to farm land in the peri-urban communities in the Sunyani West District.

Farmers who indicated that it was easy to have access to land for farming mentioned sharecropping and rent of land as means of getting farm land. Another interesting source of land given by respondents, especially those from the

Odumasi and Chiraa zone, was forest cultivation. According to the respondents, one could easily move into the forest and cultivate without any form of restriction. A study of reports of the Department of Agriculture confirmed this practice with concerns that it had contributed to the depletion of some acres of forest reserve in the district. On the other side, those who indicated that it was difficult to access farm land cited expensive cost, unfavourable land arrangements and land being used for residential purposes as reasons.

A nonparametric (chi-square) test was used to test the association between access to farm land and non-farm livelihood diversification. All the required assumptions for Chi-square test of homogeneity were met. The chi-square test (with Yates Continuity correction) showed no significant association between access to farm land and non-farm livelihood diversification,  $\chi^2 (1, n = 251) = .009$ ,  $p\text{-value} = 0.925$ . This may be as a result of the low earnings and risk associated with farming activities in the district which equally pushes farmers who have access to land to also diversify into non-farm livelihood activities as a way of insurance. The results support the insurance-based diversification theory while it contradicts the structural transformation theory. This implies that the structural transformation theory does not necessarily hold in the study area in respect of access to farm land and non-farm livelihood diversification.



## **Outcomes of Non-farm Livelihood Diversification**

The previous section analyzed the determinants of diversification into non-farm livelihood activities. In this section, will look at the outcomes of non-farm livelihood diversification by concentrating on income and employment.

A farmer's decision to diversify into non-farm livelihood activities in addition to farming may be induced by a set of incentives, key of which are: income, employment, food security and sustainable use of resources (Barrett et al, 2001; Reardon et al, 2006; Scoones, 2009).

### **Income Outcomes**

First, the effects of aggregate income (non-farm income plus farm income) for the non-farm livelihood diversified and the undiversified farmers are compared. Also, a specific analysis of the difference in non-farm income for the two locations, sex and education levels are investigated. A further analysis of the use of non-farm income by the farmers will be undertaken. With respect to income, while the minimum monthly income for the respondents was GHS 70, the maximum monthly income was GHS 5,700.00. The median monthly income of the respondents was GHS600.00 (mean = 784.86, skewness = 2.6) with a quartile deviation of GHS 720.00. The skewness (2.6) of the distribution shows that the monthly income of the majority of the farmers was less than GHS 784.86.

Also, the minimum monthly non-farm income was GHS 50.00 while the maximum was GHS 5,000.00. The median monthly non-farm income for the respondents was GHS 400.00 (mean = 640.77, skewness = 2.8) with a quartile

deviation of GHS 700. The skewness (2.8) of the distribution of monthly non-farm income shows that the majority of the diversified farmers had monthly non-farm income of less than GHS 640.77.

#### Differences in Income for Non-farm Livelihood Diversified and Undiversified Farmers

The section explored whether there were differences in income for farmers who had diversified and those who had not diversified. An independent sample t-test was conducted to compare the total monthly income for non-farm livelihood diversified farmers and the undiversified farmers. Preliminary analyses done indicated that the assumption of normality was violated. However, according to the Central Limit Theorem (CLT), with large sample size (e.g. 30+) the violation of this assumption cannot cause major problems (Pallant, 2005). Equal variance could not be assumed (Levene's test:  $F= 12.101$ ,  $P= .001$ ). The result of the test indicated that farmers who had diversified into non-farm activities had a higher significant monthly income ( $M=892.43$ ,  $SD = 785.14$ ) than the non-diversified farmers ( $M = 426.89$ ,  $SD = 380.96$ );  $t(199) = -6.168$ ,  $p = .000$  (two-tailed). The magnitude of the differences in the means (mean difference =  $-465.53$ , 95% CI:  $-614.36$  to  $-316.70$ ) was very small (eta squared =  $.004$ ) per Cohen (1988) classification.

The results imply that, all things being equal, rural and peri-urban farmers who were able to secure additional income from non-farm activities in the study area had higher income and were able to smoothen their consumption than

farmers who had not diversified into the non-farm sector. This support Bryceson (2002), Mandere et al. (2010) and Green (2012) findings that non-farm activities result in an increase in income which lead to more lucrative poverty alleviation strategies in Africa.

It became important to examine whether the differences in income for the diversified farmers laid with location. An independent sample t-test was conducted to compare the monthly non-farm income for peri-urban diversified farmers and rural diversified farmers. Equal variance could be assumed (Levene's test:  $F = .709$ ,  $P = .401$ ). From the test, there was no significant difference in monthly non-farm income for peri-urban diversified farmers ( $M = 713.40$ ,  $SD = 677.91$ ) and rural diversified farmers ( $M = 575.98$ ,  $SD = 675.60$ );  $t(191) = -1.408$ ,  $p = .161$  (two-tailed). According to Cohen's (1988) formula, the magnitude of the difference in the means (mean difference =  $-137.42$ , 95% CI:  $-329.89$  to  $55.04$ ) was very small (eta squared =  $.005$ ).

The result of geographical difference in income shows that, non-farm income was not significantly higher in peri-urban communities than rural communities. Although there were relatively better infrastructural facilities in the peri-urban communities than in the rural areas, it does not contribute to a higher significant difference in non-farm income generation. The finding support results found by Lanjour et al. (2001) in Tanzania that peri-urban non-farm enterprises generate similar income as those in rural communities. Isgut (2004) and Gibson and Olivia (2010) opined that, education and access to electricity play particularly important roles in explaining differences in share of non-farm income in rural

neighborhoods. Data gathered from the respondents clearly points that, these important variables (electricity and education) were accessible to majority of the respondents in both locations with about 96 percent of electricity and 80 percent formal education. This might contribute to the similarity in monthly non-farm income for the peri-urban and rural communities.

The study examined further the differences in non-farm income for male and female livelihood diversified farmers with an independent samples t-test. The test revealed that equal variance could not be assumed (Levene's test:  $F= 5.257$ ,  $P= .023$ ). It was found that male farmers who had diversified into non-farm activities had a higher monthly non-farm income ( $M=775.60$ ,  $SD=724.53$ ) than female diversified farmers ( $M = 473.02$ ,  $SD= 577.60$ );  $t(190) = 3.228$ ,  $p = .001$  (two-tailed). The magnitude of the differences in the means (mean difference = 302.58, 95% CI: 117.70 to 487.46) was very small (eta squared = .005).

The result implies that male diversified farmers were able to gain a higher share of non-farm income in the study area than female farmers. According to Lanjouw et al. (2001), this difference in income may be as a result of sex restrictions in certain non-farm activities due to cultural and social orientation, lower returns from a given activity, and employment in different non-farm activities. The result is consistent with Canagarajah et al. (2001) evidence in Ghana and Uganda that non-farm activities lead to income inequality between women and men with men gaining significantly higher income than women. However, my inability to control for the time spent in non-farm activities could also imply that the variation in earnings from non-farm activities is likely

attributable to variations in time spent in such activities since women on most occasions allocate time for reproductive roles.

Apart from location and sex, the study further examined the differences in non-farm income across educational levels. Though the assumption of homogeneity was violated, the ANOVA test is reasonably robust to the violation of this assumption (Stevens, 1996). There were no statistically significant differences in monthly non-farm income across educational levels ( $F = 20206$ ,  $\alpha = 0.05$ ,  $p - value = 0.070$ ). The result contradicts Haggblade et al. (2010) and Asmah (2011) position that educational attainment was considered one of the most important determinants of non-farm earnings in rural Africa. This could be attributed to the fact that the sampled respondents were not engaged in paid non-farm employments as in the case of the above studies.

#### Use of Non-farm Income

Individuals use income earned from non-farm livelihood activities for different purposes. Questions were posed to illicit responses on the use of non-farm income. The distribution of the use of non-farm income, as presented in Table 13, shows that out of the 284 responses, consumption (64.7%) was the most important use of non-farm income. This was followed by payment of bills (18.3%), as some of the respondents used non-farm income to pay school fees, hospital bills and electricity bills. The least cited use of non-farm income was purchase of farm inputs (5.3%).

**Table 13: Use of Non-farm Income**

Items	Frequency	Percent
Consumption	184	64.7
Payment of bills	52	18.3
Invest in NF activity	33	11.7
Purchase inputs	15	5.3
Total	284*	100.0

\*Multiple responses

Source: Field survey, Asare (2017)

This finding is consistent with those of Katega and Lifuliro (2014) in Tanzania, and Madaki and Adefila (2014) in Nigeria, that rural non-farm activities contribute a significant share of total income in participating households and enable them to purchase food and consumer goods, pay for medicine and health care, as well as pay for the education of children.

The study further ascertained if non-farm income was crucial for the respondents' survival. As evidenced in Table 14, 75.7 percent of the 247 responses agreed that non-farm income was crucial to their survival. The rest of the respondents were either not sure (14.2%), or disagreed (10.1%) that non-farm income was crucial to their survival.

**Table 14: *Non-farm Income Crucial to Survival***

Survival	Frequency	Percent
Agreed	187	75.7
Not sure	35	14.2
Disagreed	25	10.1
Total	247	100.0

Source: Field survey, Asare (2017)

#### Employment Outcome

Employment, as an outcome of non-farm livelihood diversification, is the ability of such enterprises to provide paid work to people. Available literature suggests that the rural non-farm sector provides 30 percent of full-time rural employment in Asia and Latin America, 20 percent in West Asia and North Africa and 10 percent in Africa. To begin with, the researcher asked the respondents to indicate whether they provided employment to other people in their non-farm activities. A two-point scale, Yes and No, was used. Generally, out of the 201 responses, the majority (76.6%) did not provide employment in their non-farm enterprises or activities. The remaining farmers provided some form of employment to other people (Table 15). The finding met expectations because most of these enterprises/activities were small in size, informal and had low capacity to employ. The result collaborates that of Abor and Quartey (2010), Quatraro and Vivarelli (2013) and Nagle and Naude (2014) findings that non-farm livelihood diversification, especially in small informal businesses, rarely provide employment to external people.

**Table 15: Non-farm Employment by Location**

	Location		Total
	Rural	Peri-urban	
Non-farm employment	No (%)	No (%)	No (%)
No Employment	91(84.3)	63(67.7)	154(76.6)
Provides Employment	17(15.7)	30(33.3)	47(23.4)
Total	108(100.0)	93(100.0)	201(100.0)

Chi-square = 6.716, df = 1,  $\alpha = 0.05$  p-value = 0.010

Source: Field survey, Asare (2017)

The distribution of the employability of people in non-farm enterprises by location, as depicted in Table 15, clearly shows that employability of enterprises was proportionately higher in peri-urban communities (33.3%) as compared to 15.7 percent of rural communities. A Pearson Chi-square test of homogeneity (Yates continuity correction) showed statistically significant differences in non-farm employability in relation to the location of farmers ( $\chi^2 = 6.716, df = 1, \alpha = 0.05, p - \text{value} = 0.010$ ).

Responses from the focus group discussion confirmed the results in Table 15, that non-farm enterprises barely provided employment to other people. All operators of non-farm enterprises who participated in the FGD said that they did not provide employment to people. According to them, they were assisted by family members (children and sibling) when the need for additional hands arose. They cited low sales and its resultant low profit as the main reasons that prevented them from expanding the size of their businesses to employ people.



It also became important for the researcher to find out the number of persons employed in the non-farm enterprises. Findings from the study showed that the maximum number of persons employed in non-farm activities by the respondents was 10, while the minimum was one. The distribution of number of persons employed was not normal (skewness = 2.287 > 0.5). The median number of persons employed was two with a quartile deviation of 2.0. None of the few non-farm employers had formal employment contract with their employees. The result indicates that non-farm enterprises were not a major source of wage employment in the Sunyani West District but rather an important source of self-employment. The result is consistent with evidence found by Nagle and Naude's (2014) study in six African countries: Ethiopia, Malawi, Niger, Nigeria, Tanzania and Uganda that most non-farm enterprises employ less than five persons.

### **Constraints to Non-farm Livelihood Diversification**

In view of the fact that rural non-farm activities are heterogeneous by their nature, their constraints also have differing characteristics. The constraints to non-farm self-employed livelihood diversification are the main focus of this section. The study dwelt on the major constraints identified by the respondents of the interview schedule and also those found at the FGDs. To begin with, respondents were asked if they were constrained from diversifying into non-farm activities. The result showed that, the majority (95.6%) of the 240 respondents were constrained from running a non-farm enterprise.

The constraints, as evident in Table 16, show that out of the 361 multiple responses, about 41 percent of the responses related to credit. Similar concern was

raised by the participants of the FGD. One male participant of the FGD indicated that:

*Who is willing to grant credit to the farmer? They always ask for collateral which we don't have. When we tell them that we have parcels of land to guarantee, they are quick to ask for the indenture. These parcels of land were given to us by our forefathers without such papers. On few occasions that the savings and loans people grant us loan, we are required to make a daily or weekly payment which is a very difficult schedule to meet. Sometimes, they also ask us to form groups which are considered risky for some of us because we are made to pay for a member who default in repayment of the loan. The government has to find a special credit for small farmers like us to do business*

(Participant at Odumasi No. 1; February, 2017)

Respondents who mentioned credit as a constraint posited that it was as a result of absence of collateral/guarantee, high interest rate, unwillingness of creditors, unfavourable repayment schedule and fear of consequence of default payment. The implication is that, if farmers have access to credit, they can diversify their livelihood to improve their standards of living. This finding is similar to that of Assan (2014) that credit was a major constraint to non-farm livelihood diversification. The constraints found by the survey in the study area were consistent with those found by Katega and Lifuliro (2014) in Tanzania and

Mesele (2016) in Saharti Samre Woreda, Ethiopia. The authors found that credit, low opportunities, skill deficiency and inadequate capital were the constraints to non-farm activities.

**Table 16: Constraints to Non-farm Livelihood Diversification**

Aims	Frequency	Percent
Credit	151	41.8
Inadequate opportunities	63	17.5
Lack of training	39	10.8
Poor asset base	32	8.8
Fear of risk	30	8.3
Poor infrastructure	19	5.3
High rate impost	16	4.4
Inadequate time	6	1.7
Poor electricity supply	4	1.1
Influence of spouse	1	0.3
Total	361*	100

\*Multiple response

Source: Field survey, Asare (2017)

The second highly cited constraint was inadequate business opportunities (17.5%). The result was supported by the participants of the FGD. Some participants of the FGD indicated that there were fewer opportunities in the non-farm livelihood sector in the district. It came up strongly that sales were very low and also most people always preferred to buy on credit. Respondents from the rural communities specifically mentioned the absence of market facilities as a major contributing factor to the low opportunities in their communities. Some participants also reiterated that low patronage of non-farm activities resulted from the fact that most people engaged in similar activities (e.g. selling of cooked food) in the study area. One participant had this experience to share:

*In-between my house, two of my neighbours sell similar cooked food. I am always confused with who to buy from since I relate well with them. A lot of people sell similar food in our community. The moment someone starts a new thing here; within a short period, you will see many people doing that same thing. These practices discourage some of us from coming-up with new business ideas (Farmer at Chiraa Asuakwa; February, 2017).*

Also, about 10 percent of the responses from the survey related to lack of training. Lack of training was a major constraint mentioned at the FGD sessions. Some participants mentioned that before farmers could have engage in certain non-farm livelihood activities, they should have enough technical training and basic business advisory services about the field they want to venture into.

According to them, however, the only training they had received was agriculture related provided through the e-agriculture platform. Training geared towards the non-farm sector was virtually not available to them. An officer from the District Assembly indicated that:

*The Assembly believes that there is the need to train the local people to start their own businesses which will go a long way to improve the local economy. The Assembly is working assiduously to have its own BAC- NBSSI office to offer non-farm entrepreneurs the opportunity to receive some form of business advisory services and related trainings. As it stands now, we are unable to provide them with any form of training*

(Official of SWDA at Odumasi No. 1; February, 2017).

The finding was confirmed by the 2015 composite budget of the District Assembly, which highlighted inadequate capacity to design programmes for SMEs as a major challenge of the district (SWDA, 2015).

Likewise, 8.3 percent of the surveyed responses were in relation to fear of risk which was consistent with the views of participants of the FGD. According to a section of the participants, due to the absence of institutional support, the ability of rural and peri-urban farmers to tolerate risk was low. Most of the participants of the FGD exhibited fear of failure in investing into non-farm activities that required relatively higher initial start-up capital. A young farmer at the FGD had this experience to share:

*I wanted to operate a small sized boutique to supplement my income but I was afraid that the business may fail. I feared that if people refused to patronize my product, the money invested in this project will go to waste. Although, I had a supplier in Sunyani who was willing to supply the goods to me on credit, I declined after I considered it carefully with my mother. My mother advised me that our people preferred to travel to Sunyani to buy rather than buying from our town. I therefore decided to save that money at the bank (Farmer at Chiraa Asuakwa; February, 2017).*

The implication of the above statement is that fear of failure deters rural and peri-urban dwellers from exploring other opportunities. This finding is consistent with that of Roy and Khatun (2013) which explained that rural people's choice of livelihood activities was greatly influenced by fears. On the other side, inadequate time (1.7%), poor electricity supply (1.1%) and influence of spouse (0.3%) were among the least cited constraints to non-farm livelihood diversification in the study area.

## Summary

This chapter presented the results of non-farm livelihood diversification in selected rural and peri-urban communities in the Sunyani West District. It established that non-farm activities in the district were heterogeneous in nature. The chapter also revealed that age, membership of association, access to market and farm income influenced farmers' decision to diversify into non-farm livelihood activities. With respect to the outcomes of non-farm livelihood diversification, the study found that it leads to an increase in farmers' income. However, the employment outcome of the sector was mainly self-employment. Lastly, the chapter established that, majority of farmers were constrained from diversifying into non-farm activities. The next chapter presents the summary, conclusions and recommendations, which were drawn from the discussions.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### Introduction

This chapter presents a summary of the major findings of the empirical study undertaken on non-farm livelihood diversification in selected rural and peri-urban communities in the Sunyani West District in the Brong Ahafo Region of Ghana. The first section of the chapter summarises the entire study and also presents the key findings. This is followed by the conclusions and recommendations drawn from the findings. Suggestions for further research are also outlined for consideration.

#### Summary

The study set out to investigate non-farm livelihood diversification among farmers in six communities in the Sunyani West District of the Brong Ahafo Region. The specific objectives of the study were to: describe the types of non-farm livelihood diversification strategies adopted by farmers in the Sunyani West District; examine the factors influencing farmers' decision to diversify into the non-farm sector; explore the outcomes of non-farm livelihood diversification in the district; and assess the constraints to non-farm livelihood diversification in the study area.

In order to achieve the set objectives, the multi-stage sampling technique was used to sample 260 farmers from six communities in the Sunyani West District. However, 251 respondents were available for the study. The mixed



method research design was used for the study, with quantitative as the dominant approach. Data were gathered through the use of interview schedule for the sampled farmers and FGD guide for officials of the Assembly, members of FBOs and owners of non-farm enterprises. Analysis of the data was done using the Statistical Product and Service Solutions (SPSS, version 21) software. Data on non-farm livelihood activities and the constraints to non-farm livelihood diversification were presented by the use of descriptive statistics and cross tabulation. Also, independent samples t-test was used to explore the outcomes of non-farm livelihood diversification. Lastly, binary logistic regression and Chi-square test were employed to examine the variables that influence farmers' decision to diversify into non-farm activities.

### **Major findings of the study**

The main findings of the study were as follows:

The main non-farm livelihood strategies adopted by farmers.

- Non-farm activities in the study area were heterogeneous in nature and included: trading, driving/transport, food vending, dressmaking, vulcanizing, milling, sale of alcoholic drinks, carpentry and metal fabrication.
- Trading activities were the most predominant (36.5%) non-farm livelihood activity.
- The study found significant differences ( $\chi^2 = 108.19$ ,  $p - \text{value} = 0.000$ ) in non-farm activities performed by males and females. For

example, by cultural orientation, activities such as food vending and soap making were reserved for women.

Factors influencing farmer's decision to diversify into the non-farm sector.

- About 80 percent of the farmers in the study area diversified into non-farm livelihood activities due to necessity or push factors.
- The reasons for non-farm livelihood diversification included; risk aversion (54.6%), food security (16.1%) and family necessity (12.1%). Other reasons cited were income (10.3%) and business opportunity (6.9%).
- The study found a significant positive effect of membership of association (7.003, p-value = 0.008); access to market (5.319, p-value = 0.021) on non-farm livelihood diversification.
- There was a significant inverse effect of age (8.057, p-value = 0.005); farm income (6.444, p-value = 0.011) on non-farm livelihood diversification.
- Among the variables, sex (p-value = 0.112) and education (p-value = 0.712) did not significantly determine non-farm livelihood diversification.
- The strongest predictor of non-farm livelihood diversification was membership of association (Exp (B) = 4.4), followed by access to market (Exp (B) = 2.264), monthly farm income (Exp (B) = 0.999) and age (Exp (B) = 0.963) in that order.

- On the issue of access to land and non-farm livelihood diversification, it became evident that there was no significant effect of access to land and non-farm livelihood diversification ( $\chi^2 = 0.009, p - value = 0.925$ ).

#### Outcome of non-farm livelihood diversification

- The minimum monthly non-farm income was GHS 50.00, while the maximum was GHS 5,000.00. The median monthly non-farm income was GHS 400.00 (skewness = 2.8)
- The diversified farmers had a significantly higher income (M = 892.43, SD = 785.14) than the undiversified farmers (M = 426.89, SD = 380.96);  $t = -6.168, p\text{-value} = 0.000$ .
- Even though peri-urban farmers had a relatively higher non-farm income (M = 713.40, SD = 677.91) than rural farmers (M = 575.98, SD = 675.60), the difference was not statistically significant ( $t = -1.408, p\text{-value} = 0.161$ ).
- With respect to income from non-farm activities, males earned significantly higher (M = 775.60, SD = 724.53) than female (M = 473.02, SD = 577.60);  $t = 3.228, p\text{-value} = 0.001$ .
- There were no significant differences in non-farm income across educational levels ( $F = 2.206, p\text{-value} = 0.070$ ).
- The most common uses of non-farm income in the study area were consumption (64.7%) and payment of bills (18.3%).
- More than 75 percent of the respondents said that non-farm income was crucial for their survival.

- With respect to employment outcome, even though the majority (76.6%) of the respondents did not provide employment to people, a few (23.4%) did provide employment.
- While the minimum number of person employed was one, the maximum was 10. The median number of persons employed by respondents in their non-farm activities was two (skewness = 2.28).

#### Constraints to non-farm livelihood diversification

- The majority (95.6%) of the respondents were constrained from running a non-farm enterprise.
- Prominent among the constraints to the non-farm sector were: credit (41.8%), inadequate opportunities (17.5%) and lack of training (10.8%). Other constraints were: poor asset base (8.8%), fear of risk (8.3%), poor infrastructure (5.3%) and high rate impost (4.4%).

#### Conclusions

From the findings of this study, the following conclusions were drawn:

Non-farm activities in the study area were heterogeneous and involved small sized self-employment. Most importantly, farming and trading were the most predominant livelihood strategy pursued by farmers in the study area. Besides, the primary occupation of the respondents was farming but the sector was risky in such a way that majority of them had diversified into non-farm

activities. Female and male farmers diversified into different types of non-farm livelihood activities.

The determinants of non-farm livelihood diversification were age, membership of association, access to market and farm income. Membership of associations was the most important determinant of non-farm livelihood diversification since it broadened non-farm livelihood diversification options for farmers. Also, farmers who had access to markets were able to engage in non-farm livelihood activities than their counterparts who did not have access to market facilities. However, aging farmers diversified less into non-farm activities as compared to young farmers. Similarly, respondents who earned relatively higher farm income diversified less into non-farm activities. In addition, Non-farm livelihood diversification was practiced by most of the farmers due to both push and pull factors. The pull factors were not prominent because respondents were mostly induced to diversify their livelihood into low-paying non-farm activities to meet a necessity.

The outcomes of non-farm diversification in the study area were that: farmers who had diversified into non-farm activities had a higher income than those who had not diversified. Use of non-farm income for consumption and payment of bills was a common practice among the respondents. With respect to employment outcome, non-farm livelihood activities rarely provided paid-employment to other people. They were a major source of self-employment but not paid-employment. Although only few non-farm enterprises provided employment, peri-urban enterprises employed more people than rural enterprises.

Largely, farmers in the Sunyani West District were constrained from diversifying into non-farm livelihood activities. The prominent constraints included: inadequate credit, low business opportunities, poor asset base and lack of training. Other constraints were: poor infrastructure, fear of risk and high rate impost by the District Assembly.

### **Recommendations**

From the findings and the conclusions, the following recommendations have been made to improve non-farm livelihood diversification.

#### Farmers

- Since non-farm activities are heterogeneous in the district, it is recommended for farmers to do some form of analysis in order to diversify into highly remunerated activities.
- Informal associations contribute largely to non-farm livelihood diversification. Farmers are advised to form such associations to provide assistance to their non-farm activities.
- Since farmers who have diversified into non-farm livelihood activities had higher income, it is recommended for undiversified farmers to diversify into some kind of non-farm livelihood activities.

#### Policy makers interested in the non-farm sector

- Agriculture is no longer the only livelihood source for rural and peri-urban farmers in the Sunyani West District. The District Assembly must support the growing informal sector. This support may be given by allocating

more budgets for rural areas to initiate productive economic activities. For example, the construction of additional market centres will stimulate non-farm livelihood diversification.

- Rural financing must be developed and improved. Rural banks and microfinance institutions must be encouraged to establish branches in the rural and agriculture communities so as to make financing of non-farm projects much easier. This will help the people to obtain credit needed for investment in their various economic activities to improve their income levels and also smoothen their consumption.
- Owing to the fact that most farmers lacked training in non-farm activities, it is recommended for the District Assembly to establish an office for the NBSSI-BAC in the district to create avenues where farmers and other individuals could be trained in non-farm economic activities to enhance job creation.

### **Suggestions for further study**

In the course of the study, the undelisted issues were identified for further research:

- The factors that account for difference in income for male and female non-farm livelihood diversified farmers.
- The other components of social capital (e.g. kinship, tribal affiliations, time devoted to communal activities, trust etc) must be investigated further to verify their influence on non-farm livelihood diversification.
- New approaches and models for credit provision in rural and peri-urban areas must be explored.



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APPENDIX A

STATISTICAL TABLES

Table 17

*Independent Samples Test for diversified and undiversified farmers on monthly income*

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	Df
Total income	Equal variances assumed	12.101	.001	-4.360	249
	Equal variances not assumed			-6.168	199.086

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total income	Equal variances assumed	.000	-465.53868	106.78580
	Equal variances not assumed	.000	-465.53868	75.47407

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
Total income	Equal variances assumed	-675.85726	-255.22010
	Equal variances not assumed	-614.36988	-316.70748

Source: Field survey, Asare (2017)

Table 18

*Independent Samples Test for location on monthly non-farm income*

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	Df
Monthly NF income	Equal variances assumed	.709	.401	-1.408	191
	Equal variances not assumed			-1.408	188.369
		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	
Monthly NF income	Equal variances assumed	.161	-137.42620	97.57715	
	Equal variances not assumed	.161	-137.42620	97.59625	
		t-test for Equality of Means			
		95% Confidence Interval of the Difference			
		Lower	Upper		
Monthly NF income	Equal variances assumed	-329.89343	55.04103		
	Equal variances not assumed	-329.94824	55.09584		

Source: Field survey, Asare (2017)



Table 19

*Independent Samples Test for sex on monthly non-farm income*

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	Df
Monthly NF income	Equal variances assumed	5.257	.023	3.150	191
	Equal variances not assumed			3.228	190.991
		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	
Monthly NF income	Equal variances assumed	.002	302.58422	96.04405	
	Equal variances not assumed	.001	302.58422	93.73121	
		t-test for Equality of Means			
		95% Confidence Interval of the Difference			
		Lower	Upper		
Monthly NF income	Equal variances assumed	113.14099	492.02745		
	Equal variances not assumed	117.70292	487.46553		

Source: Field survey, Asare (2017)



4= University/ Polytechnic/ Post-secondary

6. Are you a household head?                    0= No                    1= Yes

7. What is the size of your household?.....

8. Please, indicate number of persons who depend on you for a living.

.....

**SECTION TWO: LIVELIHOOD STRATEGIES IN THE AREA**

9. Are you engaged in crop and animal farming?

0= No                    1= Yes

If no, please indicate what you do.....

10. Have you diversified into any economic activity apart from farming?

0= No                    1= Yes

If yes, what type of non-farm livelihood activity are you engaged in?

1= Trading

2= Processing of farm produce

3= Masonry

4= Carpentry

5= Driving/ Transport

6= Dressmaking

7= other (specify)

11. Which of the activities is your primary occupation? .....





**SECTION FOUR: OUTCOMES OF NON-FARM LIVELIHOOD  
DIVERSIFICATION**

25. What was your average income from farm activities per month?

Please, give estimate in Ghana Cedis (GHS).....

26. What is your average income from non-farm activities per month?

Please, give estimate in Ghana Cedis (GHS).....

27. How much did you spend when you had not diversified to non-farm activities?

Please, give estimate in Ghana Cedis (GHS).....

28. How much do you spend now after diversifying to non-farm activities?

Please, give estimate in Ghana Cedis (GHS).....

29. Non-farm income is crucial for your survival?

0=Disagree                      1=Not sure                      2=Agree

30. What is the purpose and use of your non-farm income? You may tick more than one answer.

1=Investment into non-farm activities                      4=Purchase of farm inputs

2=Consumption

3=payment of bills

31. Have you employed someone in your non-farm livelihood activity?

0=No            1=Yes

32. If yes, indicate number of persons employed by you.

Family member/s.....

Nonfamily member/s.....

Total.....

33. Do you pay salary to the family members working for you?

0=No            1=Yes

34. How much salary do you pay to your staff per month?.....

35. Do you work for other people in their non-farm enterprises for income?

0=No            1=Yes

If yes, indicate type of work.....

**SECTION FIVE: CONSTRAINTS TO NON-FARM LIVELIHOOD  
DIVERSIFICATION**

36. Do you have any constraint to non-farm livelihood diversification?

0=No            1=Yes

37. Which of these is the major constraint that prevents you from operating non-farm enterprise? You may tick more than one answer.

- |                            |                                 |
|----------------------------|---------------------------------|
| 1=no credit                | 5=poor infrastructure           |
| 2=poor asset base          | 6=no opportunities              |
| 3=lack of training         | 7= high rate impost             |
| 4=fear of risk             | 8=local government restrictions |
| 9= poor electricity supply | 10= other (specify).....        |

38. Explain why your choice is a constraint

.....

.....



## APPENDIX C

### FGD GUIDE

1. What are the main sources of income in the District?
2. Why do you engage in non-farm activities?
3. Do you have a strong social tie? How does it support your non-farm activities?
4. What are the major constraints that block or discourage rural households' entrance to diversify into non-farm enterprises in the area?
5. Do you think diverse activities (non-farm) helps the people to increase their income or improve employment situation of the District? How?
6. How many people on average do you employ in your non-farm enterprises?