

UNIVERSITY OF GHANA

COLLEGE OF HUMANITIES

**PERCEIVED IMPACT OF RURAL-URBAN MIGRATION ON FOOD
SYSTEMS: A CASE STUDY OF FARMERS IN NKORANZA SOUTH
MUNICIPALITY, GHANA.**

BY

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DECLARATION

I, George Fiifi Botchey, hereby declare that, except for references to other people's work, which have been duly acknowledged, this thesis is the outcome of my independent research conducted at the Centre for Migration Studies, University of Ghana, Legon, under the supervision of Prof. Agnes Budu and Prof. Christina Nti. I, therefore, declare that this thesis has neither in part nor in whole been presented to any other institution for academic award.

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DEDICATION

This thesis is first and foremost dedicated to the Almighty God through whose blessings, protection and love I have gotten this far. I also dedicate it to my family especially my parents Mr and Mrs Botchey and my siblings Aba, Araba and Ekua for their support and constant encouragement.

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TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
ABSTRACT	xi
CHAPTER ONE	1
1.0 Introduction	1
1.1 Background	1
1.2 Statement of problem	4
1.4 Research questions	7
1.5 Operational definition	7
1.6 Justification and significance of the study	8
1.7 Organisation of the study	8
CHAPTER TWO	10
LITERATURE REVIEW	10
2.0 Introduction	10
2.1 Conceptualization of major terminologies	10
2.2 Rural-urban migration	12
2.3 The Ghana migration literature	14
2.4 Migration and food systems	15
2.5 Effect of migration on labour availability	19
2.6 Food systems sustainability	22
2.7 Theoretical perspectives	25
2.8 Conceptual framework	29
2.9 Summary	32
CHAPTER THREE	33
STUDY AREA AND METHODOLOGY	33
3.0 Introduction	33
3.1 The research design	33
3.2 Description of the study area	34
3.3 Target population	37

3.3.1 Inclusion and Exclusion Criteria.....	37
3.4 Sample and Sampling Procedure	38
3.4.1 Sample size	38
3.4.2 Sampling procedure	39
3.5 Data collection	41
3.5.1 Instruments for data collection.....	41
3.6 Pretesting of instrument	43
3.6.1 Procedure for data collection	43
3.7 Data analysis	44
3.7.1 Quantitative data analysis	44
3.7.2 Qualitative data analysis	44
3.8 Ethical consideration.....	45
3.9 Limitations	45
3.9.1 Summary	46
CHAPTER FOUR.....	47
SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE FARMERS.....	47
4.1.0 Introduction.....	47
4.1.1 Sex composition of the farmers	47
4.1.2 Age distribution of the farmers	48
4.1.3 Educational status of respondents	49
4.1.4 Marital status of respondents	50
4.1.5 Religious affiliation of respondents	51
4.1.6 Employment status of respondents	52
4.1.7 Respondent's place of birth.....	53
4.1.8 Migration of children who can contribute to food system activities.....	54
CHAPTER FIVE	56
PERCEPTIONS OF THE FARMERS ABOUT MIGRATION	56
5.1.0 Introduction.....	56
5.1.1 Community perceptions of migration in the municipality	56
5.1.2 Perception of respondents about pull factors of the destination	57
5.1.3 Number of migrants away from the households	59
5.1.4 Types of migrants from the households	60
5.1.5 Frequency of remittances received by households.....	61

5.1.6 Usage of remittances by respondents.....	62
5.1.7 Households assistances to migrants	64
5.1.8 Migration benefits to left-behind family	65
5.1.9 Reasons for migration by sex of farmers	67
5.2.0 Migration experience of farmers.....	68
5.2.1 Migration benefits by sex of farmers	69
5.2.2 Summary	71
CHAPTER SIX	72
EFFECT OF MIGRATION ON FOOD SYSTEMS AND HIRED LABOUR AVAILABILITY	72
6.1.0 Introduction.....	72
6.1.1 Ways in which migration affect food systems	72
6.1.2 Impact of migration on farming income	73
6.1.3 Modes of clearing farm land	75
6.1.4 Cost of weeding farmlands by sex of farmers.....	76
6.1.5 Sources of farm labour.....	77
6.1.6 Type of labour use for planting and harvesting	79
6.1.7 Crop types that need intensive labour	80
6.1.8 Storage facilities and duration of harvested foodstuffs before transportation	81
6.1.9 State of road network in the municipality.....	83
6.2.0 Modes of transport of foodstuffs and amount charged for transportation.....	84
6.2.1 Materials used for packaging foodstuffs for local market	85
6.2.2 Ways of solving labour shortage by sex of farmers.....	86
6.2.3 Use of hired labour.....	88
6.2.5 Impact of getting labour at the precise time for crop production.....	90
6.2.6 Evaluation of labour availability.....	91
6.2.7 Summary	92
CHAPTER SEVEN.....	94
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS.....	94
7.0 Introduction.....	94
7.1 Summary of findings.....	94
7.2 Conclusion	95
7.3 Recommendation	96
7.4 Areas for further research	97

REFERENCE.....	98
APPENDICES	112

LIST OF TABLES

Table 3.9.3: Systematic sampling technique process.....	40
Table 3.9.4: Data collection	41
Table 4.1: Sex distribution of respondents	48
Table 4.2: Age distribution of respondents	49
Table 4.3: Educational level of respondents	50
Table 4.4: Marital status of respondents	51
Table 4.5: Religious Affiliation of respondents	52
Table 4.6: Employment status of respondents	53
Table 4.7: Migration of children who can contribute to food system activities	55
Table 5.1: Community perceptions on migration in the municipality	57
Table 5.2: Perception of respondents about pull factors of the destination	58
Table 5.3: Number of migrants from the households	60
Table 5.4: Types of migrants from the household	61
Table 5.5: Frequency of remittances.....	62
Table 5.6: Usage of remittances.....	64
Table 5.7: Households assistances to migrants.....	65
Table 5.8: Migration benefits to left-behind family.....	66
Table 5.9.1: Migration experience of farmers	69
Table 5.9.2: Percent distribution of benefits of migration by sex.....	70
Table 6.1: Ways in which migration affect food system (Agriculture)	73
Table 6.2: Impact of migration on farming income	74
Table 6.3: Mode of clearing farm lands	75
Table 6.4: Amount charged for weeding farmlands by sex of farmers	77
Table 6.5: Sources of farm labour.....	79
Table 6.6: Type of labour use for planting and harvesting	80
Table 6.7: Crop types that requires intensive labour	81
Table 6.8: Storage facilities and duration of harvested foodstuffs before transportation.....	82
Table 6.9: State of road network in the municipality.....	84
Table 6.9.1: Modes of transport of foodstuffs and amount charged for transportation	85
Table 6.9.2: Materials use for packaging foodstuffs for local market	86
Table 6.9.3: Ways of solving labour shortage by farmers	87
Table 6.9.4: Use of hired labour	89
Table 6.9.5: Reasons for labour shortage.....	90
Table 6.9.6: Impact of getting labour at the precise time for crop production	91
Table 6.9.7: Evaluation of labour availability	92

LIST OF FIGURES

Figure 2.9.1 Conceptual framework	32
Figure 3.9.2: Nkoranza South Municipality Map	35
Figure 4.8: Respondent's place of birth	54

LIST OF ABBREVIATIONS

FAO	Food and Agriculture Organization
GSS	Ghana Statistical Service
GLSS	Ghana Living Standard Survey
IFAD	International Fund for Agricultural Development
LEDC	Less Economically Developed Countries
MoFA	Ministry of Food and Agriculture
NSMA	Nkoranza South Municipal Assembly
NCBI	National Center for Biotechnology Information
OECD	Organization for Economic Cooperation for Development
UN	United Nation
UNDP	United Nation Development Programme
SPSS	Statistical Package for Social Sciences

ABSTRACT

Rural-urban migration is a major challenge in traditionally migration prone areas such as Nkoranza South Municipality in the Brong Ahafo region of Ghana. Food system and its related activities embedded in agriculture, for example, non-mechanized farming suffer the most as a result of labour shortage associated with out-migration from farming areas. Some specific objectives of the study were to identify community perception about rural-urban migration and to determine perceived effects of rural-urban migration on some aspect of food systems (weeding, planting, harvesting and transporting) from the farmer's perspective in some communities (Ahyiayem, Asonkwaa and Nyinase) in Nkoranza. The research design that was adopted for the study was mixed methods. The sample size was made up of 270 farmers within the communities, selected through a multistage sampling procedure. Instruments used for the study were structured questionnaires and in-depth interview guides. The quantitative data was analysed using SPSS and the qualitative through the use of thematic analysis. The results show that decrease in food production, reduce farming income and loss of labour for farming activities were the most immediate impact of migration on food systems. The findings further indicated that non-mechanization type of farming in the area has made specific components of food systems such as weeding, planting, harvesting and transporting of produce labour intensive due to out-migration, with the majority (87.4%) relying on hired labour elsewhere in the absence of family labour for farm work. It again reveals that significant proportion of farmers attributed migration as the cause of decreased labour in the area with more than half of the farmers acknowledging a direct link on the impact of labour availability on food production. In spite, of the perceived negative impact of migration on food systems, migration also impacted positively on the left-behind families and their livelihood in general due to receipt of remittances. It is concluded that food production activities were affected by migration in the area of labour and income generation from farming. Based on the findings of the study, it is recommended that traditional agriculture and food systems should be improve by establishing agro processing factories to reduce the amount of food wastage during harvest. Mechanize farming should be supported by government in the absence of human labour for farm work. Finally, since agriculture is dominated by men in the study area, agricultural policies should mainstream women engagement and encourage them into the sector.

CHAPTER ONE

1.0 Introduction

This chapter introduces the background to migration, problem statement, objectives, research questions, significant of the study, organization of the chapters and other relevant issues related to the study.

1.1 Background

Rural-urban migration accounts for over half the growth of most African cities and at the same time, out-migration of labour from agriculture has been one factor leading to national food deficits as well as rising food prices in many African countries (Tacoli, McGranahan & Satterthwaite, 2015) including Ghana. This type of movement is fueled by economic opportunities as manifested in many African urban cities where infrastructural and industrial development continues to take place to the detriment of the rural areas (Pott, 2016).

Generally, women participate in some aspects of farming but the major areas, including weeding farms, sections of planting, harvesting and transporting from the farms are mostly dominated by young people especially males (Ibnouf, 2011). A large number of these youth migrating from the rural centers to urban areas will have significant impact on food systems, especially in developing countries (Lipton, 1980). Ghana, being a developing country, is highly dependent on agriculture for food and foreign exchange (World Bank, 2014). When these able bodied youth migrate, women, children and the aged left behind may not be in a position to compensate for the lost labour and may likely affect the number of hectares cultivated.

Prior to commercialization of agriculture, farmers who practiced subsistence farming made use of family members and sometimes communal labour. They had been used for purposes

including cocoa cultivation in the south, yam production in the north as well as maize production in other parts of the country. All these, to a large extent, attracted seasonal migrants to cocoa farms and other farms as well. Currently family labour is limited as a result of out-migration, seasonal migration and educational opportunities for children. Meanwhile, agriculture is not mechanized and it is therefore significant to examine the effect of out-migration on food systems in such places where food production has been important.

According to Regmi (2014), urban areas are likely to absorb all the future population, thus it is partially reflective that rural-urban migration has been on the increase. He further indicated that nearly 35 percent of the contemporary urban population growth worldwide is accredited to rural-urban migration. According to the United Nations report (UN, 2014), urbanization together with the total growth of the world's population could increase by another 2.5 billion people in urban areas by 2050. It further indicates that 50 percent of the estimated increase in the world's urban population will come from rural-urban migrants located in Asia, Africa and Latin America. From this report, it is obvious that rural-urban migration can translate into a declining agricultural output if the necessary measures are not put in place to encourage the youth to stay in the rural agricultural sector instead of migrating to urban centers.

Rural areas and their labour are essential whenever issues of food systems surface. Loss of this labour to urban areas through migration brings about poverty, food insecurity and weakening of the components of the food systems (Tacoli & Agergaard, 2017). At the same time the world's urban population will continue to grow by more than a billion people, with the majority from rural areas, according to United Nation projection for the period between 2010 and 2025 (UN, 2008) while rural population will hardly grow at all. This explains the likelihood that considerable proportion of the world population not engaging in food

production will continue to increase which brings major changes to agriculture and food systems (Satterthwaite & Tacoli, 2017).

In Ghana, food production is mostly done by the rural dwellers. This situation is becoming worrisome since the population growth as well as rural-urban migration in Ghana is likely to be twice the current rate of increase in 25 years' time (NCBI, 2013). This juxtaposes the report that the distribution of the type of migrants in Ghana's rural-urban migration increased from 1998/99 to 2014 that is 4.90% to 48.6% respectively (GLSS6, 2014). These current trends are indicative that rural-urban migration is likely to affect food systems if appropriate policies are not taken to deal with the out-migration of the youth from rural areas.

According to Beale and Sloan (2002), rural-urban migration has important "Push" and "Pull" implication for agricultural food systems because it competes for the youth resources required for these agricultural industries. The farm labour in recent times faces challenges because growing opportunities in the urban centers has particularly drawn the youth away from the rural areas. This is critical since this form of migration distorts the demographic profile of those left behind in the agricultural sector that is the aged and children. This form of migration has also led to high urban unemployment rate and associated urban poverty.

Others have argued that rural-urban migration is inevitable and usually has adverse impact on the various food systems (Zhao, 1999). The present study was undertaken to examine the perceived impact of rural-urban migration on systems. In this study, food systems is defined as the processes and infrastructures that comprise weeding, planting, harvesting and transporting of food to the market.

1.2 Statement of problem

Global food systems generally consist of three forms namely, traditional, modernized and industrialized (McCullough et al., 2010). However, the traditional food system feeds nearly 80 percent of the population in developing countries (IFAD, 2013). The traditional food system which is associated with developing countries mostly produce raw food instead of manufactured products and this requires labour at each stage in order to sustain it.

The traditional food systems in developing countries are being threatened in recent times due to substantial out-migration of the rural work force to urban centers (Garret & Ruel, 2000). This has led to the decline of agricultural labourer as a result of the transition from agrarian to an industrial economy at both macro and micro levels (Sanderson, 2012). Generally, the number of people engaged in agriculture and food system activities have dwindled (World bank, 2011) compelling people in rural areas to move to urban centers due to economic and environmental factors associated with these areas. This emerging phenomenon according to FAO (2003), is unprecedented since it creates continuous shortage of labour needed for food system and it related activities (Yakovleva et al., 2004). This confirms the assertion that 60 percent of the world population (4.2 billion people) have been freed from work such as food labourers (Sanderson, 2012: Griffith, 2007). However, Nkoranza South Municipality is one of the localities in the country that is vulnerable to both internal and international migration and has suffered reduction in food system and its related activities over the years due to the magnitude of migration trends (NSM, 2014).

Research evidence suggests that food system and its related activities as well as the livelihoods will be disproportionately affected by migration and climatic changes in sub-Saharan Africa (Schlenker and Lobell, 2010). Even though many researches have been conducted on the impact of migration on agriculture and food systems (Ray, 2004;

Ohajiannya, 2005; Zahonogo, 2011; Lawrence, 2017), very little attention has been paid to out-migration on food systems in Ghana and the study area in particular, which is noted for large scale food production.

Agriculture and food systems in most African countries, including Ghana, remain labour intensive. Therefore, migration of the youth to the urban centers abandoning farming activities will contribute to poor performance in agriculture as well as food systems.

Statistics by Ghana Statistical Service suggests that, in the year 2010 there were 26,930 households in Nkoranza South Municipality and out of these, 22,002 representing 81.7 percent were engaged in agriculture (GSS, 2014). This report clearly buttresses the fact that indeed, rural- urban migration can affect the various components of food systems in the municipality if the majority of the youth decide to migrate to the urban centers.

In a similar but earlier report by Ghana Statistical Service (2007), it was indicated that, a higher percentage of the people living in Nkoranza South Municipality migrated to urban centers, specifically Kumasi (35%) and Accra (41.2%) to seek greener pastures. These observations, according to San Diego et al. (2015), is as a result of the unattractive nature of agriculture embedded with low income. In line with this, many people believe that when traditional agriculture is transformed into modern agriculture through the use of technology, it will strengthen the components of food systems since the youth who normally migrate will interact with the system which will expose farming to be attractive and rewarding. This will reduce rural-urban migration.

Government through Ministry of Agriculture (MoFA) has seen the problems associated with agriculture and in their quest to intervene has introduced Youth in Agriculture Programme (YIAP) as a module of the National Youth Employment Programme.

Rural-urban migration which is an exigent issue for policy makers and governments, especially in developing countries, has far-reaching implications for farm labour in the rural areas. This leads to reduction of total crops cultivated per hectare and the quality of work giving rise to reduced food production and lowered household income. The continued migration of labour coupled with factors such as, removal of subsidies on fertilizers, poor and declining soil fertility and other climate change conditions continue to intensify migration and threaten food system sustainability in the municipality (Cudjoe and Owusu, 2011; Abu et al., 2013).

The impact emanating from rural-urban migration may result in rapid waning of the rural economy that leads to interminable poverty and food insecurity (Mini, 2000). This is evident as a result of the continued migration of the youth from rural areas leaving the aged and children to constitute the labour force. Nkoranza South Municipality in Ghana is largely an agrarian community with 74.3 percent of its economically active population engaged in agriculture (NSMA, 2014). However, it is characterized by out-migration especially among the youth. The study examined the perceived effect of migration on food systems in Nkoranza South Municipality.

1.3 Objectives of the study

The general objective of the study was to examine perceived impact of rural-urban migration on food systems in the Nkoranza South Municipality. The specific objectives were:

1. To identify community members' perception about rural-urban migration in relation to the food systems in Nkoranza South Municipality.
2. To determine perceived effects of rural-urban migration on some aspects of food systems (Planting, Weeding, Harvesting and Transporting) in Nkoranza South Municipality.

3. To examine the effects of rural-urban migration on hired farm labour availability in the municipality.
4. To make policy recommendations based on the findings of the study.

1.4 Research questions

1. What are the factors that influence rural-urban migration in relation to the agricultural sector in the Nkoranza South Municipality into the urban centers?
2. What is the relationship between rural-urban migration and food systems (Weeding, Planting, Harvesting and Transporting) in the Nkoranza South Municipality?
3. What is the relationship between rural-urban migration and hired farm labour availability in the rural areas of Nkoranza South Municipality?

1.5 Operational definition

For the purpose of the study, the following definitions are stated in reference to the agricultural sector:

1. Impact- The influential effect that rural-urban migration has on food systems.
2. Migration- Is the movement of people from Nkoranza South Municipality to the urban centers.
3. Food systems- It refers to the processes and infrastructures which comprises of, weeding, planting, harvesting, processing and transporting of food to feed a population.

1.6 Justification and significance of the study

In view of the strategic role agriculture plays in improving food systems (that is development in the rural areas by way of food security and poverty reduction), any attempt to maintain the labour force in the rural centers is important. The findings of this study will recommend to policy makers as to how to tackle the issue of rural-urban migration among the youth. This would help reduce food insecurity and alleviate poverty in order for farmers to meet other social needs and general improvement in their living conditions. This study will contribute greatly to the contemporary discussion on the rural to urban drift.

Findings based on empirical evidence could provide insights to policy makers on the appropriate choice of rural development approaches which could make the rural areas attractive and offer the same opportunities to the youth out-migrant in the cities. This would encourage them to stay back in their rural communities' thus reducing incidence of rural-urban migration with its related problems such as food insecurity and rural poverty because of low productivity as a result of labour shortage.

Result of the study from Nkoranza South Municipality could also be used as a guide for further research.

1.7 Organisation of the study

The study is structured into seven chapters. The first chapter focuses on the background of the study, problem statement, objectives of the study and the purpose of the study. The second chapter contains an in-depth literature review of the study and the topic area. It also deals with some key concepts and conceptual framework for the study. In this chapter also, relevant research findings on migration and food system issues are discussed.

Chapter three looks at the study area and the methodology employed to gather the data for the study. It includes physical features of the study area, sampling method used to select the respondents, method of data collection, limitations of the study and data analysis.

The fourth chapter provides a clear description and presentation of the results on analysis of the socio-demographic characteristics of farmers. Chapter five looks at the farmers' perception about rural-urban migration. The sixth chapter contains presentations on the effect of migration on food system and hired labour availability. The final chapter which is chapter seven gives the summary of the findings, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter commences by presenting some major definitions and conceptualization of key terms. Precise understanding of these terminologies is crucial in explaining the relationship between migration and food systems. The chapter also reviews literature on migration and food systems as well as other influential factors that attract the youth to the urban centers. It also aims at getting theoretical and empirical information on diversification of livelihood strategies in developing countries like Ghana especially through migration and the overall effect on food systems and its sustainability.

2.1 Conceptualization of major terminologies

Farming practices

Farming practices are definite methods which, when applied to farming (agriculture), produce food for consumers. These methods include how the soil is managed and the kind of farming implements used among others. This practice is enhanced when non-agricultural processes such as harvesting, packaging, marketing, transportation among others are taken into consideration with respect to economic, social and environmental sustainability (FAO, 2012).

Rural areas

Rural area is an important variable when it comes to agriculture and food systems. It is therefore significant to contextualize its meaning when referring to it in developing countries like Ghana. Rural areas solely depend on the context to which it is defined and with reference to specific country. Its meaning varies between core countries (Developed), semi-peripheral (Countries in transition) as well as peripheral (Developing countries) such as Ghana. These

areas constitute a population threshold between 5000 and 10000 who are dependent on agriculture for food and natural resources for upkeep (Nwanze, 2000).

This definition cannot explain fully the situation that pertains in Ghana since agriculture is a means of survival for many urban dwellers. According to GSS (2000), population size of 5000 denote urban settlement whereas a magnitude of less than that number represent rural areas. Incorporation of qualitative and quantitative features are seen in some definitions of rural areas. For instance International Fund for Agriculture Development (IFAD, 2001), observed key differences between urban and rural areas to owning specific assets such as farmland for cultivation, number of livestock per person among others as attributes to rural areas than urban areas. Again rural population is a scattered type with dependency on natural resources (SARDF, 1997).

The socio-economic conditions surrounding rural areas and its inhabitants can have adverse effect on food production at large, denying them of opportunities to maximize their farm income and improve their living conditions. Significant output derived from the definitions above is made up of the population density as well as high dependence on agriculture for food and other resources for livelihood.

Livelihood

Livelihood is mostly considered as a mode of “making a living”. The term incorporates people’s capabilities, assets, income and activities required to secure the necessities of life.

A livelihood is maintained when it can withstand stress and shock as well as enhancing its capabilities and assets both currently and in the future, while not crippling the natural resource base (Chamber & Conway, 1991) in those areas.

2.2 Rural-urban migration

Generally, rural-urban migration brings a lot of changes as the people move from one geographical area to another for temporary or permanent residence. These changes include urban growth as towns and cities expand to cover greater area of lands and also urbanization leading to an increase in proportion of the people living in cities and major towns.

According to Pretty, Morison and Hine (2003), rural population reduces and decreases farming activities thus, leading to an adverse effect on the various components of food systems. Deshingkar and Grimm (2005) opined that in sub-Saharan Africa, massive break away from subsistence to cash crop farming or manufacturing has translated into temporary or permanent movement of the youth (especially males) and sometimes females from rural centers to urban communities in search of remunerated job opportunities.

Considerable portion of this migration is miles away to the urban centers and manufacturing sites (Zhao, 2003). Nevertheless, shorter movement is characterized by people with less resources who move to smaller cities to work as labourers, petty traders as well as artisans (Dao, 2002). Migration from rural areas to urban centers used to be a regular process of economic expansion and development, whereby the excess labour freed from the rural sector was needed for urban industrial development (Todaro, 1969; Weeks, 1989). However, in more recent times, the outlook on rural-urban migration has changed drastically and have become diversified in terms of the complexities that have characterized it in contemporary times (Deshingkar & Grimm, 2005).

Rural-urban migration is characterized negatively by some policy experts and urban developers as means of hindrance to development of cities in many African countries, leading to creation of urban slum areas and causing astronomical increase in crime rate (Gazdar, 2003; Yang, 2004). As a result, many countries have introduced prudent policies to

minimize poverty reduction and boost economic development through regulations on population and limitation on activities within the informal sector (Harteveld, 2004).

Rural- urban migration is one of the widespread types of migration in developing countries, including Ghana. It has been an ongoing process since colonial times. It started with mass voluntary movement of people to the south to work on cocoa plantation and expansion of railway systems. As a result of inequalities between the south and the north, people begun moving on their own in such of greener pasture in the south constituting voluntary migration shortly after independence. This type of movement is intensive in contemporary time due to uneven distribution of national resources between the south and the north. This confirms the migration pattern of about 35 percent rural-urban, followed by 23 percent urban-urban migration, 18 percent seasonal migration and 14 percent rural-rural migration (GSS, 2000).

Asia continent specifically for Eastern and Southern parts, urbanization and massive expansion of manufacturing, especially for export, have led to substantial increases in both temporary and permanent migration (Yang, 2004). However, contrary to the situation in sub-Saharan Africa, most of the rural-urban migrants in South-East and East Asia are women who work in the fabrics factories in the cities (Hugo, 2003).

In Bangladesh, more than half of all migratory movement is from rural to urban centers and is increasing swiftly (Afshar, 2003). According to Zhao (2003), China is a unique case study as a result of existing infrastructures, communication technology coupled with prudent economic policies such as market liberalization, removal of sanctions on employment and movement control as well as widening of export-oriented manufacturing has led to exceptional increase in population movement. He further opined that these changes have occurred simultaneously in China, thereby contributing to internal movement of people.

Also in India where rural-urban mobility from poverty driven communities to highly resource areas have been the main form of migration, there has been an upward increase in this phenomenon in recent years as more youths especially men travel to urban centers to work in construction and urban services within the expanding informal sector (Hugo, 2003). For instance, studies conducted in India Bihar province indicated that they have been battling with doubling out-migration rates since the 1970s. This shows that migration is now mainly to urban areas and not to the traditional destinations in irrigated Punjab where work availability has dropped (ibid: 71).

2.3 The Ghana migration literature

In Ghana, migration is well known yet it has attracted a little number of economic analytical studies. This is due to the fact that migration-economic studies over the years lack detailed and comprehensive migration data. Nevertheless, important attempt have been made to highlight the key patterns and the justification for migration issues in Ghana. Though the majority of these studies are descriptive in nature, they often present cross-tabulated survey statistics and other information that gives valuable insights into the reasons, extent and patterns of migration (Caldwell, 1968 and 1969; Tutu, 1995; Gbortsu, 1995).

Some reasons cited, according to the literature on, migration include job search, schooling, marriage, and other family-related issues (Caldwell, 1969; Tutu, 1995; GSS, 2010. GLSS, 2014). Litchfield and Waddington (2003) adopted multivariate analyses comprising of census or survey data to examine issues relating to migration determinants and the impact of migratory movements.

Some of the key findings in terms of contribution from migration dated back to 1960s from census and survey data. This data elucidated that one's ability to migrate to the urban centers from rural areas was motivated by distance between rural areas and larger towns. Again,

economic prowess of households, presence of relatives and friends in the urban centers as a result of social network connections as well as individual level of education were some of the incentives behind mass movement of people from the rural areas.

However, not all these factors had a causal association with each other. For example income had negative effects on the origin centers but positive effects on a household's own income on the likelihood to migrate. Other variables like education and presence of relatives or friends in the destination centers were major drivers propelling outward migration in the rural areas as observed by Tutu (1995).

Furthermore migration-education nexus was conflicting according to Beal et al. (1967) but Cadwell (1968) saw a positive correlation since significant number of migrants with tertiary education exceeded that of non-migrants. On the aspect of income levels by households, migrant households were better off as a result of frequent receipt of remittances. This curtailed welfare challenges and raise the standard of living of the left behind family and their communities in general (Asante, 1995). This was absent in the case of non-migrant households.

Finally statistics from the data indicated that aside the push and pull factors shaping migration decisions, migration in itself serves as a response to opportunities available to individuals as well as difficulties encountered by their communities at their origin.

2.4 Migration and food systems

Global food system is experiencing increasing pressure in the face of urban population growth. The recent spike in global food prices (Lerner & Eakin, 2011) has raised issues about the present need of food, its sustainability as well as the place of cultivation and preservation of foodstuffs.

Food systems, according to Ericksen et al (2009), contains several activities from pre-agricultural (weeding, planting, harvesting) among others to post-agricultural activities including processing, packaging and distributing, transporting, retail and consumption. These processes requires the needed labour to sustain the input and output generated at each step of the process by a higher percentage of the population living in the rural areas. Thus if these rural dwellers migrate to the urban centers, for one reason or the other, then it implies that rural-urban migration can have impact on the various components of the food systems. This is confirmed by the Global Food System report (1992) where convectional food systems were affected by rural-urban migration. The report further suggests that during that year, the world recorded its highest increase in urban population and as a result, 842 million people suffered malnutrition worldwide (FAO, 2008; Kithu, 2012). Population estimates suggest that the rural population will hardly grow as against the world's urban population hitting more than a billion people from 2010 to 2025 (United Nation Report, 2008). The likelihood is that section of the global population not producing food will exacerbate as well as the middle class income consumers. This will impact negatively on food systems since the rural work force will migrate and add up to the urban population thus reducing the production scale of food and its related activities.

Half of the global population who lives in the rural areas depends on agricultural activities which make up the food systems for survival (IFAD, 2007). Even though, they are quite vulnerable to poverty and food insecurity such as drought, flooding, ethnic conflict, famine and most of all structural inequalities, this situation denies the population opportunities and resources to secure sustainable livelihood. These development anomalies often resort to sending family members to urban centers or overseas in search of waged work. Migration-development nexus in terms of rural development in most literatures remains thin. Most of the outcomes indicate that migration plays a minimum role in the changes that occurs in food

systems as a result of rural agriculture but remains significant as a strategy for rural livelihood (De Haan, 1999; Kennedy et al., 2004). Internal and International migration have been debated in the migration literature as part of the causes to significant decline in food systems and a general dissatisfaction with peasant farming.

Aworemi, Abdul-Azeez & Opoola (2011) in a study in Nigeria showed that rural-urban migration is a two-sided problem affecting the rural communities as well as the urban centers. They maintain that rural communities are the worse affected because the youth and the grown-up (adults) that are required to stay in the communities and contribute to the sustainability of food systems through agriculture development in particular, leave the rural areas for greener pastures in the urban centers and shun farming activities. Subsequently, these tends to reduce agricultural production and food availability in the sending communities.

Migration of able-bodied men and women constitute loss of labour to the rural areas. This contributes to the process of agricultural decline in rural communities. Remarkably rural and agricultural decline are often associated with internal migration (Regmi & Tisdell, 2002; De Haas, 2007) rather than with international migration to developed countries. This is so because much higher remittances are expected back to the origin localities and the households to compensate for the loss of labour. Some of these remittances are channelled into agriculture to strengthen the components of food systems (planting, harvesting, packaging, transporting etc.) and other sectors of the economy. Mass movement of the rural work force leads to agricultural decline or complete neglect for agriculture (De Mas, 1990; Ferry and Toutain, 1990; Kerbout, 1990).

The mass exodus of this rural labour has adverse effect on agricultural production since most of the work which would have been done by the youth will fall on the children and the aged

(Angba, 2003). For instance, if a migrant household's maximum output from the farm is positive then crop production will reduce drastically when the household send out migrant(s).

According to Taylor et al. (2003), the implications of labour shortage to food production are eminent since migrants who move tend to be younger and well educated than the usual rural labourer. This adverse effect weakens the individual components of the food systems thus affecting the overall sustenance. A report by Rozelle et al. (1999) confirmed the abysmal effect of labour shortage on farm output, but the same writers (Taylor et al., 2003) relying on similar data from households analyzed by Rozelle in subsequent writings found out that loss of labour to migration has an adverse effect on household income on crops, but the overall effect of migration on crops output was significant. Loss in output was attributed to shortage of labour but was partially compensated for by remittances from migrants (Taylor et al., 2003; Rozelle et al., 1999), which aided in the purchase of agricultural implements as well as paying for substitute of labour in crop farming. The report further opined that the remittances place the households in better economic position to engage in other economic ventures. In terms of the role of a return migrant, the report explained that they invest in agriculture and food systems not because of economic gains but most at times on the grounds of strong emotional affection for agriculture. This confirms what is now described as "sentimental or hobby kind of farming" by migrant(s) especially the return (Bencherifa and Popp, 2000).

From the literature it is evident that rural-urban migration, rather than international migration seems to be associated more with the cause of agriculture decline through the decreased availability of family labour as well as poverty (De Haas, 1998; 2003).

2.5 Effect of migration on labour availability

In a globalized world where industrialization is taking shape in urban centers of developing countries, current literature on rural development shows that agricultural activities are less appreciated in terms of revenue than non-agricultural activities (Bryden and Bollman, 2000; Dries and Swinnen, 2002). A large-scale document out of macro-economic data reveals that low urban wages are even higher than those obtained from work in the agricultural sector (Mazoyer and Roudart, 1998; Johnson, 2002). These rural-urban wage discrepancies coupled with high rural population growth, abject poverty and poor infrastructural development account for substantial out-migration from the rural areas (de Haan and Rogaly, 2002).

Agriculture in most developing countries like Ghana is still labour intensive. Labour is an important input necessary for agricultural development especially where food system is key in that regard. African micro-level farm survey show farmers expressing shortage of labour as one of the most significant constraint to output (Kamuzora, 1998). This tends to affect labour required to maintain and sustain the components that make up the food system in the rural areas. Rural out-migration has become a common mechanism as a result of advancement in technology, access to information and cheap transportation (Dang, 2006). The commercialization of agricultural commodities in many urban centers of developing countries has created more chances for rural-urban migration (UNDP & MARD, 2012). This outward migration, which is based on certain pull factors, has affected the necessary labour needed for agriculture production especially in the areas of weeding, planting, harvesting and transporting from the farms. These key components of the food system require the maximum labour in order to be sustained. Although labour availability for planting is somewhat compensated since sections of planting are done by women and children, Cramb et al. (2009) observed that labour for weeding farms has become a challenge especially when out-migration in the rural areas is enormous since clearing of farmland is mostly done by men.

These out-migrants largely consist of male youth likely to contribute to agriculture and food systems but the unattractive nature of agriculture coupled with poor farming proceeds create avenues for them to migrate. The majority of these migrants are low skilled or manual labourers with limited opportunities in both agricultural and non-agricultural activities in the rural areas. Meanwhile, there is high demand for their labour in the urban centers since key jobs in the informal sector such as street vending, housemaids, cleaning, among others, are shunned by the urban dwellers (Ramirez & Hondagneu-Sotelo, 2009).

Rural labour and migration nexus is very significant in maintaining and improving some aspect of food systems (weeding, planting, harvesting and transporting). This type of migration depends on numerous factors with the most critical ones being the push and pulls factors (Reardon et al., 2001). This push-pull factor causes farmers to leave their farms. The push factors constitute difficult conditions mostly associated with the primary sector of which agriculture and its related activities like those of food systems forms part. These difficult conditions include risky farming which is made up of seasonal and unpredicted climatic situations, continuous decreasing agricultural prices, water constraints as well as unavailability of ready market for their products (Sofer, 2001; Pal and Kynch, 2000). The pull factors relate to pleasing conditions in the non-primary sector such as regular income in non-agricultural business which is mostly visible in the urban centers attract farmers and get them out of agriculture.

Many rural farmers have always relied on family labour for their agricultural activities but currently due to the mass exodus of the youth to the urban centers it has rendered them with no other option than to resort to hired labour which always comes at a cost (Ye & Plan, 2016). The unattractive nature of agriculture coupled with high cost of labour has rendered majority of the farmers either to have shunned farming or reduced the size of their farmland in order to afford labour. In terms of harvesting, rural areas have always relied on traditional

methods such as bare or gloves hand plugging or picking, uprooting among others in harvesting foodstuffs which is labour intensive especially when the farm covers vast acres or hectares of land. Hence in order to sustain food systems, labour must be available and consistent for farming.

This situation has led to low output of farm products after harvesting. Road networks in the farming areas are in deplorable states making transportation of food stuffs from the farms very difficult. These difficulties leave farmers with no option than to rely on hired human labour which comes with huge cost especially when the distance between the farms and the assembling point is relatively far. Farmers who resort to hiring of vehicles to convey their foodstuffs after harvest complain of exorbitant charges requested by owners of these vehicles citing reasons as poor road network, distance among others (Kilkenny,1998).

The reason accounting for high cost of labour has to do with the absence of the youth who have the manpower to clear farmland and cultivate in large quantities since agriculture is yet to be mechanized in the Nkoranza municipality.

According to Lanjouw (2001), employment opportunities in non-agricultural sector which comes with higher income account for this type of migration to the urban centers creating labour shortage in the rural areas. For instance in Latin America and the Caribbean countries, daily non-agricultural wages are higher for low or manual labourers than agricultural wages for the same category of workers causing a massive shift of labour from farming activities to non-agricultural business (de Brauw et al., 2002).

Although in some context urban wages may be lower than agricultural income, rural youth may still perceive for higher income and choose to migrate and work in factories as cleaners or will pick up menial job because of the status and dignity that comes with urban employment (White, 1993; Glaeser et al., 2002). On the whole, labour can be available if

rural-urban development gap is minimized (Henderson & Wang, 2005) and agriculture is made fashionable to attract the teeming masses that migrate to the urban centers for greener pasture.

2.6 Food systems sustainability

The requirement for sustainability is currently contested between agriculture and food systems. The processes contributing to this debate include the environment, economic and social unsustainability deriving partly from the world food system.

According to Story et al. (2009), one can define sustainable food system to constitute the availability of a well-balanced food to meet present needs while preserving and improving strong ecosystems that can outspread food for the next generation with minimal adverse effect on the environment; local production and distribution infrastructures; accessibility and affordability of nutritious food; protection of farmers, other workers and consumers. Not long ago 842 million people suffered malnutrition (FAO, 2013), while obesity rate rose to 500 million (Finucane et al., 2011). This raises concern for the problem of sustainable food system to be addressed by building systems that will bring better and enhance policies towards food systems for the improvement of societal welfare. Therefore, the model of sustainability in terms of food and agriculture should be seen as a property of a system, rather than an approach to agriculture (Gallopini, 2003).

Food systems are seen as a nexus between social and ecological systems, involving various connections between human and natural components (Ericksen, 2008). Intuitive comprehension of these drivers and its interactions help improve public policies on food systems. Scholars in favour of agricultural sustainability have suggested alternative farming practices which are more environmental friendly by incorporating new set of values for the survival of current and unborn generation (Garnett & Godfray, 2012). These renewed

approaches to agriculture such as organic farming, low-input agriculture, biodynamic agriculture, regenerative agriculture, permaculture, and agroecology are interesting crucial initiatives rooted in the ground. Yet, agricultural sustainability cannot be achieved by the simple adherence to one of these approaches. These are suggestions towards food system sustainability.

Although several illustrations can be used to analyze food systems, its vulnerability and resilience to global, socio-economic and biophysical changes is phenomenal (Ericksen 2008; Darnhofer et al., 2010). This can be reduced when the various components of food systems are involved in cross-scale interactions and feedbacks in order to make important decisions towards its sustainability (Cash & Adger, 2006; Gallopín, 2003). Food and nutrition security remain a crucial policy issue in every country, and the current global crisis of malnutrition is an urgent concern for both developed and developing countries. The concept of “Sustainable Diet” agenda, elucidated by some scholars argued that in order to sustain food system, key players such as consumers must be considered in food-nutrition security network in the global food system (FAO/Bioversity, 2012; Johnson et al., 2014). When food system fails to contribute towards food security or has the potential to do so in the face of complex challenges, the system can be considered as vulnerable (Ericksen, 2008).

Structures and processes of food systems are affected by various global and regional drivers of change, putting context-specific food and nutrition security at risk. The food system production and consumption patterns are increasingly water demanding. According to OECD (2013), irrigated agriculture only accounts for 70 % of the consumption of freshwater resources globally. This confirms the fact that water availability is directly linked to trends of climate change which in turn result in unpredicted rainfall patterns and minimizing the dependence of rain water usage in agriculture (Freibauer et al., 2011). Other critical factors affecting food systems sustainability has to do with increase concentration in agro-chemicals

and soil nutrients thus, significant number of water pollution, impacting on the quality of water and further contributing to water scarcity (Bates et al., 2008).

One of the indicators of food systems, which is food price volatility, rose astronomical in 2008 with its price index exceeding the threshold of 200 for the first time. The most affected regions included the Mediterranean and the sub-Saharan zones which were particularly vulnerable with regards to food prices due to numerous factors such as nutrition transition, urbanization, population growth and climatic changes (Padilla et al., 2005) as well as the global financial crisis surrounding the world economies in 2008.

As a result of migration, return migration has contributed significantly to the changing food consumption pattern due to transformations in values and attitude as well as behaviours (Kearney, 2010). Globally, patterns of food consumption are changing both in terms of the overall amount and its structures as consumers begin to shift from incorporation of natural foods into their diet (Meade et al., 2014). These changes have been blamed largely on westernization of foods consumption pattern (Drewnoski and Popkin, 1997) driven by factors including demographic, income growth as well as lifestyle influenced by urbanization, globalization, changes in occupational status and more importantly propagation of information (Meade, 2012).

As rural-urban migration increases, food security becomes a global threat. This is because food security is the situation that pertains when all people, at all-time have physical and economic access to abundant, safe and more importantly nutritious food to meet their dietary needs and food preference for an active and healthy life (FAO, 1996). This demand which is an outcome of food system has not been met in most developing countries including Ghana, making affordability of food very difficult. Food affordability is the purchasing power of the community or the household (Ingram, 2011) which means that food should be present at all

time at a price that people can afford to pay and in particular whether the low income consumers can afford enough nutritious food to meet their basic needs (Barling et al., 2010). All these variables (Food security and Affordability) are being infringed upon as a result of rural-urban migration which in turn weakens the various components of food systems. Whenever food system is sustained, food availability and its affordability is easily accessible.

The determinants of food affordability include; pricing policies, seasonal and geographical variations in price, local prices relative to external prices, payment mode for households, income and wealth levels (Ericksten et al., 2009). Food affordability and food prices are important determinants of food choices (Lee et al., 2013) which to a large extent become stable if there is sustained food system in a country.

2.7 Theoretical perspectives

A theoretical overview of migration

Despite the significant contribution of migration to human development, especially in developing countries, few scholars deny its enormous contribution to the livelihood and survival of family left-behind including children and the aged. The degree to which migration and remittances can bring about sustained human development and economic growth in migrant-sending areas and the overall impact on their country of origin is quite a different phenomenon (De Haas, 2007). This contested issue has become the subject of debate over several decades including migration and development in the aftermath of the Second World War periods.

The “developmentalist” optimism reigned in the early 1960s with large-scale pessimism surfacing in the early 1970s and 1980s. This change resulted in more different views in the 1990s due to the diversified nature of migration as highlighted in many empirical studies.

These diversities of migration include the sudden reappearance of remittances and the eruption of optimism on migration and development in contemporary times (De Haas, 2007).

Developmentalists and neoclassical views

The developmentalists believe that, through a policy of large-scale capital injection and industrialization, developing countries would have achieved rapid economic growth and modernization in the 1950s and 1960s. At the same period, large-scale labour migration moved from developing to developed countries and that reduced labour surpluses in the origin areas. As a result of this, inflow of capital through remittances was expected to improve productivity and income in migrant sending communities (Massey et al, 1998). Amidst these expectations, many developing (labour surplus) countries became involved in the migration process (Papademetriou, 1985).

Migration which is considered as one of the major vehicles on which national development would occur, was used by many governments of developing countries to start actively encouraging their citizenry to participate (Heinemeijer et al., 1977; Adler, 1981; Pennix, 1982).

Developmentalist “migration optimists” opined that migration plays a role in the North-South transfer of capital investment and introduce the local communities to liberal, rational, democratic ideas, modern knowledge as well as education (De Haas, 2007). De Haas expound that another aspect of migration which is return migration is perceived as important agents of change, innovation and investment when a migrant returns.

The general expectation mostly associated with migration is that migrants will not only remit but in addition to that, their new ideas, skills and knowledge will bear on their economies after returning (Peggy, 1998). Return migrants are expected to pump money into enterprises

of their country of origin. However, this positive view of migration in the eye of the developmentalist has recently experienced a new beginning.

Neo-classical theory of migration has been propounded under the functionalist approach, which resonates that the movement of people from rural areas to urban centers is as a result of disparities (that is, wages and income differentials, variation of employment opportunities and the level of supply and demand of labour, among others) between the two areas (Massey et al. 1993; Bauer and Zimmermann 1999; Borjas, 2008). Neo-classical economists viewed migration positively and considered it as a process that contributes to the optimal allocation of productivity. They further stated that, when factor price equalization is achieved it will reduce migration flow as a result of wage differential being at par in both the sending and receiving areas (Massey et al., 1998).

From this perspective, the re-distribution of labour from rural-agricultural centers to urban industrial sectors is considered as an important requirement for economic growth which constitute a section of the whole development process (Todaro, 1969). The voluntary movement of labour is automatically expected to lead to increasing shortage of labour, coupled with higher marginal productivity and increasing wage level in migrants sending areas. While this happens, capital flows is likely to move in the opposite direction as labour migration.

In a definite neo-classical space, role of migration in terms of development is realized through factor price equalization in its entirety. Under the traditional micro-level consideration, neo-classical migration theory view migrant as a rational actor who considers the costs and benefits from current and future employment opportunity (Bauer and Zimmermann, 1999). The result obtained from this analysis becomes the bases for migration after considering individual investment in his or her human capital (Sjaastad, 1962). This

theory also posit that internal migration happens relative to the global supply and demand for labour (Zaslavskaja & Liasschenko, 1976).

Currently, neo-classical interpretation of migration and development has been recognized by international financial institutions. For example the “ policies towards migration” section of the Globalization, Growth and Poverty report of the World Bank (2002) saw the significance of migration for receiving countries specifically in terms of factor price equalization and did not mention remittances at all. This statement in one breath contravenes sections of Ratha’s (2003) chapter entitled “workers remittances” because Ratha saw the important role remittances play in migration especially to the developing countries.

Push-Pull Model of Migration

The push-pull model is basically a personal choice and a stable model. Many scholars have opined that migration decisions are based on factors such as economic, political, demographic, environmental, climatic reasons among others (Lee, 1966; De Haas, 2008). Migration models under push-pull is derived from observing some elements (famine, poor crop yield, unemployment) of an origin ‘pushing’ people to migrate whereas other elements (employment opportunities, better income, good environment and living condition) pull migrant(s) towards a destination.

Many socio-economic conditions leads to the creation of the pushes and the pulls but the two most important ones are the rural population growth causing Malthusian pressure on natural and agricultural resources, and the second one as economic conditions (better wages) enticing migrants into the urban cities and industrialized countries (King and Schneider, 1991; Schwartz and Notini, 1994; Skeldon, 1997). Push-pull model is naturally seen as attractive because of its capability to incorporate all other factors that play crucial role in migration decision-making (De Haas, 2008). This is so because it is able to integrate other

theoretical insight that is why it has often been recommended by some researchers that the general view of labour migration could best be analyzed using push-pull frame work (Bauer & Zimmermann, 1998).

In addition to wage differential, factors such as demographic pressure (excess population) and environmental degradation have been noticed as some of the primary causes of migration (King & Schneider, 1991; Zachariah et al., 2001). Farrag (1997) reveals that aside scarcity of lands, emigration dynamics is also influenced by small farm size and climatic conditions. This tends to render cash crop farming unviable, depleted soil fertility caused by population pressure on limited land as well as low level farm income in developing countries like Ghana. However migrants, who decide to move, encounter another set of circumstances known as intervening obstacles (Lee, 1966). These obstacles include physical distance, monetary costs, and cultural barriers among others. Some of the intervening obstacles associated with rural-urban migration have to do with cost of making the journey, language barriers and different ways of life.

2.8 Conceptual framework

Migration has been recognized as a survival strategy adopted by the poor, especially rural dwellers in Less Economically Developed Countries (Ellis, 2000) like Ghana. In this regard, rural migration to the urban centers in search for perceived or real opportunities is as a result of rural-urban inequalities. The assessment of the effects of rural-urban migration on rural areas continue to remain significant since migration is seen as a key driver in the transformation process of the individual migrant and the family left behind, their local communities and the wider sending regions (Ajaero & Onokala, 2013). In view of this, a framework is adopted from LEDC model for this study. This LEDC model is important and can be applied to migration theories. This is so because rural areas in LEDCs are eminent since greater percentage of the population who live there are poor. In this study, the model is

taken a step further by linking it to the effect of some aspect of food systems in the rural areas.

The conceptual framework assumes that the nexus between migration and food systems depends on the situation at both the origin (Rural areas) and the destination (Urban centers). At the rural areas, several factors may contribute to the out-migration as posited by many studies in the migration literature (see de Haas, 2008). Notable among these theories is the traditional push-pull theory propounded by Lee (1966). The push factors refer to the situation at the origin that induces the migrant to move out of their homes. Examples include drought, low agricultural productivity, unemployment etc. The other side of the theory which is the pull factors refers to the conditions elsewhere that attract migrant towards a destination and this includes urban job opportunities, better wages, better educational and health facilities among others. Many of this pull factors has led to substantial amount of out-migration in the rural areas (Kinuthia, 2003; Yeboah, 2008). Again, with the out-migration of the youth, there will be more lands for those who remain and want to engage in farming paving way for large-scale mechanized farming among those who can afford it. Also, the receipt of remittances for the purchase of weedicides and pesticides by some left-behind farmers leads to environmental degradation especially caking of the land, contamination of food and groundwater in many farming communities.

According to Adepoju (2008), migration in Africa is mostly dominated by males although feminization has become an integral component of it. Aside the push-pull factors, the neo-classical economists explain migration decision at two main levels that is the macro and micro. With the macro level, migration occurrence is as a result of the uneven spatial distribution of labour and factors of production (capital). At the origin, there is abundance of labour coupled with low wages whereas at the destination labour is scarce but wages are high. This circumstance therefore creates an enabling environment for labour (surplus) to move in

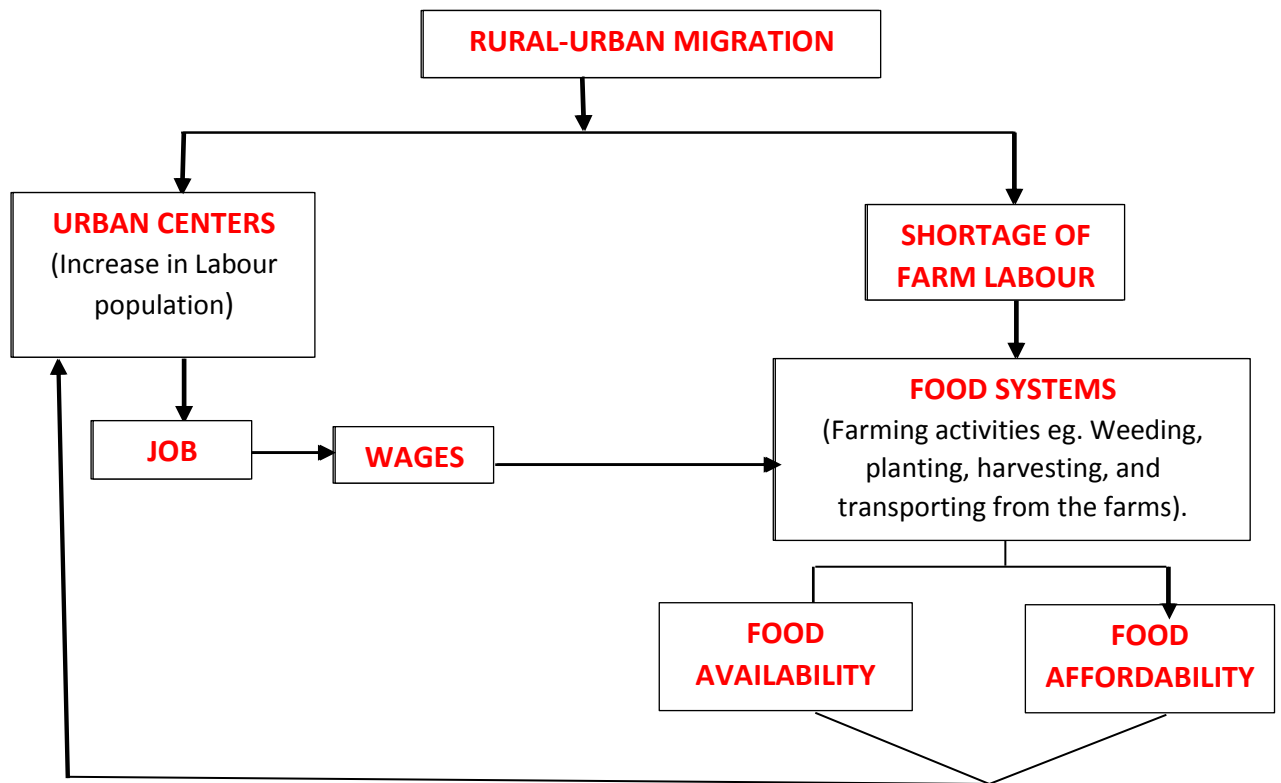
the opposite direction towards labour-scarce and high wage destinations. Based on this assertion, the micro-level calculation of the neo-classical theory attributes migration decision to the individual's own cost benefit analysis which include the pluses and minuses of the migration process in order to maximize higher return on their investment (Hecht, 1984). This is the situation of people in the rural areas where labour is in abundance but wages are low due to unattractive nature of agriculture coupled with poor sale of farm produce.

Rural-urban migration may cause two significant changes that is increase in urban labour population as well as shortage of farm labour in the sending communities as contained in figure 2.9.1. The shortage of agricultural labour at the origin may affect some aspect of food systems (Weeding, Planting, Harvesting, and Transporting from the farms) since each step in the food system require higher percentage of the rural work force for each component in order to sustain it. Subsequently absence of labour will weaken the sustainability of the food systems as those who normally migrate are male youth (Adepoju, 2008). When this occurs farming activities will suffer because major task in farming may fall on the children and the aged.

The consequences are that food production will decline as more rural youth migrate and it will affect food availability and affordability. This may shoot up prices of food stuffs and will impact negatively on the livelihood of the people in the rural areas. However, when these rural migrant settle at the urban centers and secure jobs, they may remit which is likely to be used to purchase resources such as fertilizers, improved seedlings and other farm equipment that can be helpful in expanding agricultural activities to improve food systems in the municipality. Inadequate capital and lack of credit facilities are some of the major challenges facing farmers in rural Ghana (Massey et. al., 1993). Again the remittances can also be used to compensate for the loss of labour in agriculture for example hiring of farm labour, weedicides among others.

Therefore this conceptual framework implies that the impact of rural-urban migration can be both positive and negative depending on the rural-urban in context and that is what the study sought to investigate.

Figure 2.9.1 Conceptual framework



Researcher's own construct (2017)

2.9 Summary

The chapter dealt with definition of conceptual terminologies, conceptual framework for the study and also reviews significant literature on migration in Ghana and elsewhere. The theories elucidated in the chapter originated from variety of disciplines. Major critique of migration theories is that just a theory cannot fully explain all migration cases. The theories used above incorporated social, economic and other characteristics of the migrant based on experiences elsewhere. In spite of this, the theories were used as basic framework for the research.

CHAPTER THREE

STUDY AREA AND METHODOLOGY

3.0 Introduction

This chapter is on the study area, methodological design used, the sampling technique employed and the data collection techniques used, data analysis and interpretation. Ethical issues relevant to this study are also presented. The chapter concludes with the limitations of the study.

3.1 The research design

The mixed research method approach was used, that is (quantitative and qualitative). The use of both quantitative and qualitative approaches together provide better understanding of the research problem rather than either type alone (Creswell, 2010). The quantitative research approach was adopted to obtain a large number of responses in order to find out the perceived impact of out-migration on food systems as well as the socio-demographic characteristics of the respondents.

The qualitative research approach, on the other hand focused on key informant interviews with one Agricultural extension officer, a market queen and an opinion leader each from the three communities who had adequate knowledge of food systems and its related activities in the community.

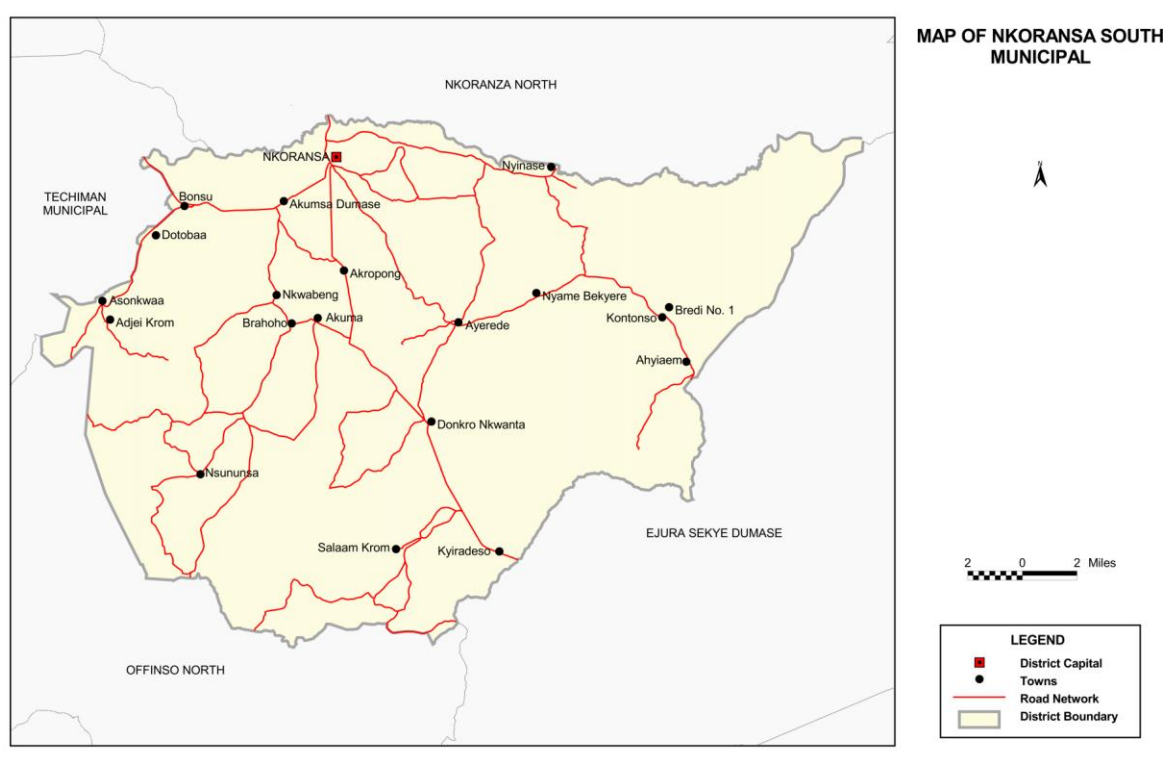
Thus, each research approach complemented the strength and weakness of the other, thereby increasing the validity of the research findings (Teye, 2012, Bryman, 2007; Creswell, 2009). The use of both research approaches simultaneously make it easier for a comprehensive analysis and provide better understanding of the impact of migration on food systems in the study area.

3.2 Description of the study area

Location

Nkoranza South Municipality was carved out of the Nkoranza District to strengthen local governance in the area. It was inaugurated on May, 2012 into Municipal status. The Municipality is found in the Brong Ahafo Region and it covers an area of 923km^2 . The Municipality lies between longitudes $1^{\circ}10''\text{W}$ and $1^{\circ}55''\text{W}$ and latitudes $7^{\circ}20''\text{N}$ and $7^{\circ}55''\text{N}$. The population of the Municipality was 100,929 in 2010 representing 4.4 percent of the region's total population. Males constitute 49.6 percent of the population and female represent 50.4 percent. The majority of the households in the municipality are involved in crop farming (GSS, 2014).

In terms of agriculture, a little over eight out of every ten households (81.7%) in the municipality are engaged in agriculture. In the rural localities, 83.3 percent are agriculture households while in the urban localities 67.2 percent are agriculture households. The municipality shares boundaries with the Nkoranza North District to the North, the Techiman Municipality to the West (both in the Brong Ahafo Region), the Ejura-Sekyedumase and the Offinso North Districts to the South–East and to the South both in the Ashanti Region respectively (GSS, 2014).

Figure 3.9.2: Nkoranza South Municipality Map

Source: Ghana Statistical Service, GSS

Climate

The Nkoranza South Municipality lies in the wet semi-equatorial region. It experiences a double rainfall regime with the first rainfall season beginning from March to June while the second period is from September to November. The mean annual rainfall is between 800 mm and 1200 mm (NSMA, 2014). The municipality experiences a prolonged dry season which occurs between the months of November and March.

The dry season affects crop cultivation including yam, cassava, maize, tomato among others in the municipality resulting in poor harvest by farmers. This drives farmers to resort to temporary solutions such as irrigation to help improve crop yield. Again, the municipality experiences bush fires in the dry season and this causes the destruction of the vegetation, and

hence contributes to the changing climate. Relative humidity is generally high throughout the year.

Vegetation and drainage

The vegetation types located in the municipality are the Savannah woodland and Savannah re-growth which extensively characterize the eastern part of the municipality (GSS, 2010). The forest type, like the other vegetation zones, has largely been troubled by man's activities such as charcoal burning and logging depriving the municipality of its valuable tree species and other forest products (NSMA, 2014).

There are streams, rivers as well as man-made smaller dams and dug-out drains in the municipality. Major rivers that drain the municipality include the Pru, Afuofu and Fia. The majority of the rivers and streams take their sources from the north-eastern part of the municipality flowing south and north-westwards.

Soils

Soils in the study area are typically heavy and red coloured. By the Soil Research Institute and Council for Scientific and Industrial Research (SRI/CSIR) classifications, the type of soils located in the municipality are made up of loamy with rich humus in abundance (NSMA, 2014). The soil support growth of food crops and other cash crops as well. The most grown food crops include maize, cassava, plantain, yam and vegetables. This drives many people, including the youth, to engage in farming. Farmers produce foodstuffs to feed their families and sell the surplus to cater for their families. Factors such as changing climate and high cost of farming implements (agro-chemicals) and inadequate credit facilities have been the worries of farmers paving way for many to shun agricultural activities to migrate to the

urban centers. This has contributed significantly to the low production of foodstuffs in the municipality (NSMA, 2014 & 2015).

Municipal economy

The economy is mainly agrarian coupled with other sections such as manufacturing industries and services which exist in small scale to serve the rural population. The major economic activity in the municipality is however agriculture (farming). The soil is good for the cultivation of numerous crops, such as tubers (Yams and Cassava), Cereals (Maize, Guinea corn,), Cash crop (Cocoa, Cashew and Mango) and Vegetables (Tomatoes, Garden eggs, Onion and Okro). This variety of crops in the municipality clearly shows that food produce are used in feeding other areas in the country. Intermediaries for the urban markets (Accra, Takoradi and Kumasi) come to buy foodstuffs mainly yams, cassava, maize, onion and tomatoes throughout the year by big trucks, and this contributes significantly to the economy at the household level as well as the municipal level. However, road networks in the municipality do not allow heavy duty cars direct access to inland communities, and this hampers some farmers to increase their income. In spite of all the resources of the municipality coupled with good soil, suitable vegetation as well as climate for agriculture, the municipality is faced with high out migration of the youth to cities and towns.

3.3 Target population

As stated by Bell (2005), population of a study refers to a whole group of individuals selected for a specific study. For this study, the population is comprised of farmers in the following communities: Ahyiyem, Asonkwaa and Nyinse of the Nkoranza South Municipality.

3.3.1 Inclusion and Exclusion Criteria

Both male and female farmers aged 18 years and above who are residents of one of the communities were selected. The farmer should be practicing subsistence farming for at least

two years because such farmers will be in a better position to answer pertinent questions regarding food systems in the study area. These subsistent farmers grows for family upkeep and help in reducing rural-urban food vulnerability, improve livelihoods and also mitigate high food prices and make food available and affordable. The other category of farmers is the commercial type with similar practice whose experience in dealing with labour especially in a municipality where agriculture is yet to be mechanized are important for the study. These group of farmers were chosen because their involvement in agriculture is significant for the study. Anyone less than 18 years and not a farmer at the time of this study and not living in any of the selected communities and not practicing subsistence or commercial farming for at least two years prior to the field work was excluded from study.

3.4 Sample and Sampling Procedure

3.4.1 Sample size

A total of 270 farmers formed the sample size for the quantitative study. The sample size for the quantitative study was determined from the sample frame using the mathematical formula by Miller and Brewer (2003).

The formula is as follows;
$$n = \frac{N}{1+N(\alpha^2)}$$

Where N= Sample frame

n = Sample Size

α = Confidence Interval

The confidence interval for the study was chosen as 95% and the margin of error as 5%. This was because the study dealt with human beings as subjects whose exactness of information is subjected to biases unlike other physical sciences.

By the formula, $N = 837$ and $\alpha = (0.05)^2$

$$\text{Therefore } n = \frac{837}{1 + 837(0.05)^2}$$

$$n = \frac{837}{1 + 2.0925} \text{ hence } n = 270.065 \text{ (270).}$$

The result deduced from the formula above gave the sample size of 270 farmers given the confidence level and the margin of error above. Hence 270 farmers were sampled and used for the study in the municipality.

3.4.2 Sampling procedure

The multi-stage sampling technique was used. The first stage involved purposive selection of three (3) rural farming communities in the Nkoranza South Municipality. The three top most farming communities involved in food production in the municipality were selected (NSMA, 2015). The second stage employed systematic sampling method which consisted of three (3) steps to select farmers in each community. Firstly the sample interval i^{th} was determined by dividing the farming population of the various communities into their respective sample sizes. The second step of the systematic sampling involved the use of random sampling technique to select respondents from the various communities. To start the random process, the first number was picked between 1 and i^{th} numbers using simple random sampling technique. Here, the first number to the i^{th} number was written on a piece of paper, folded into a bowl and mixed thoroughly. Afterwards, the investigator picked the first number from the bowl and used it as the basis for selecting the rest of the respondents with the sample interval. Finally the i^{th} term was continually selected from the list of farmers until the sample total was obtained. The process was repeated in each of the selected communities. The random technique for this specific sampling method was to give the respondents in the population equal opportunity to be included in the sample and also to ensure fair

representation of the population in the three communities to form the basis for generalization (Branner, 2005; Bourke, 2014).

Neuman (2000) posit that, sampling randomly does not only help portray the target population with enough accuracy but also enables the researcher to establish a statistical relationship between the sample and the population. Hence respondents were selected using principles of proportionality based on the number of farmers per community. Table 3.9.3 below summarizes how the systematic sampling was done.

Table 3.9.3: Systematic sampling technique process

Captured Communities For the study	Farming Population	Sample Size	Margin of Error	Sample interval i^{th} = <i>Population/ Sample Size</i>	Initial Number Selected Randomly	Sample Units
Ahyiayem	403	130	0.05	$403/130 = 3^{th}$	13	13, 16, 19, 22, 25,
Asonkwaa	280	90	0.05	$280/90 = 3^{th}$	8	8, 11, 14, 17, 20,
Nyinase	154	50	0.05	$154/50 = 3^{th}$	2	2, 5, 8, 11, 14,

Source: Researcher's own construct (2017)

For the qualitative approach, purposive sampling technique was used to select three key informants, one in each community as well as one extension officer and a market queen who had in-depth knowledge on food systems issues in the municipality. This technique was appropriate for this study because it aided in selecting persons or an area deliberately to provide important information (Patton, 2000; Tongo, 2007).

3.5 Data collection

3.5.1 Instruments for data collection

Both quantitative and qualitative data were gathered from the respondents of the communities. Instruments for data collection included structured questionnaires with both open ended and closed ended questions, which aided in collecting information from respondents. This was useful in answering the research questions quantitatively as shown on table 3.9.4.

Table 3.9.4: Data collection

Summary of Objectives	Issues	Essential information needed	Sources	Data collection instruments
Find out community perception about rural-urban migration	Effect of migration in the community	<p>Neo-classical explanation of rural-urban migration</p> <p><u><i>Feedback effects;</i></u></p> <ul style="list-style-type: none"> • Decrease farming activities • Labour shortage • Increase in farming income • Improve living standards <p><u><i>Motivating(Pull)l factors;</i></u></p> <ul style="list-style-type: none"> • Job opportunities • Better economic conditions • Urban facilities and way of life 	Migrant/Non-migrant farmers	Questionnaires

To find out the effect of youth migration on some aspect of food systems	The various components of food systems	<u>Perceived impact of rural-urban migration:</u> <ul style="list-style-type: none"> • Changes in agricultural activities • Level of food production • Changes in farm income 	Migrant/Non-migrant farmers	Questionnaires
To examine the effect of youth migration on hired farm labour availability in the study area	Farm labour availability	<ul style="list-style-type: none"> • Changes in availability and access to farm labour 	Migrant/Non-migrant farmers	Questionnaires

For the qualitative data, in-depth interview guides were used to collect the data from the Agricultural Extension Officer, selected Opinion leaders and a Market queen. These individuals were purposively selected as interviewees for the interview. Each interview lasting between 30minutes to about 45minutes. This enabled the researcher to first of all, obtain more information in lengthy conversation with the respondents. The interviews were conducted face-to-face with the interviewees which largely focused on areas such as perceived causes of rural-urban migration, perceived impact of migration on farm labour

availability and perceived impact of out-migration on food systems and its sustainability. One detriment of the in-depth interviews is that only few respondents can participate in the interviews, thus its findings or results cannot be generalized. As Preskill and Jones (2009) opined, the interview guide for qualitative data is generally useful for exploring attitudes and feelings and also to highlight issues that have not been captured in the administering of the questionnaires. These were achieved by the qualitative techniques used in the study.

3.6 Pretesting of instrument

Prior to the administration of the instrument, pretesting was done at Nsawam in the Eastern region of Ghana instead of the study area in order to get a different perspective regarding the issues to be investigated. This enabled the researcher to determine clarity of the questions, reliability and precision of the instrument before the actual data collection commenced. Sanders et al (2007) note that pretesting helps to check the appropriateness of a questionnaire or interview guide to lessen the likeness of respondents not to understand or not answering questions correctly.

Furthermore, the pre-test was used to predict the amount of time to allocate to each respondent and the number of interviews the researcher would be able to carry out in a day in order to organize the schedule of activities. The interviews lasted between 30 to 45 minutes. The experiences from the pretest aided in improving the final questions before the actual survey.

3.6.1 Procedure for data collection

A familiarization visit was made to Nkoranza South Municipality specifically to the communities chosen for the study before data collection began. The Director of MoFA branch in Nkoranza South Municipality was informed and permission was granted to have

interview with one extension officer of the ministry. Again, opinion leaders in the farming communities were also contacted for permission in order to have access to the farmers. The researcher's student identity card and an introductory letter from the Center for Migration Studies was shown to the Director of MoFA and opinion leaders to support the genuineness of the research. Farmers were visited at their various homes and sometimes on the farm and the purpose of the research was explained to them and assured them of confidentiality of responses. After that their cooperation was solicited.

The questionnaire was administered to them in Akan or English which ever was appropriate. Upon completion, the researcher expressed his gratitude for respondent's patience and contribution. This process was followed on each respondent for the data collection until the sample size was obtained. The data were collected between November 3, 2017 and January 2, 2018 on both week days and weekends.

3.7 Data analysis

3.7.1 Quantitative data analysis

After the questionnaire administered to respondents was retrieved, each questionnaire was checked, coded and analyzed using the Statistical Package for Social Sciences (SPSS version 20) software. Analytical tools such as descriptive and inferential statistics which included frequency, percentage, cross-tabulation and chi-square test were used for the analysis.

3.7.2 Qualitative data analysis

In-depth interviews were audio recorded by the researcher. All interviews were carried out in English and Twi which was the common language both researcher and respondent could communicate in. Thus interviews recorded were transcribed without any difficulties. The interviews were then coded, put into themes by referring to the objectives. This helped to

categorize and analyze the themes thereby reducing many words into coherent and logical phrases. This supported the explanations of the quantitative data.

3.8 Ethical consideration

Since human beings were placed at the center of the study, the issue of ethics was very supreme. This is due to the fact that, in as much as the researcher intended to solicit views and ideas from respondents to build new knowledge in the area of study, the rights of the respondents were taken into consideration. As a result, efforts were made to ensure that the rights of the respondents were not infringed upon. The study therefore acknowledged the rights of the respondents and made sure that such rights were respected on all occasions. Ethical considerations of the study was upheld as the researcher's student identification card was shown to the farmers, key informants and institutions in the municipality. This facilitated in obtaining their consent and the need for them to assist in providing credible information for the study.

Also, the respondents' confidentiality was assured during the data collection period. The researcher ensured that the data collected from the farmers and key informants were treated confidentially. Voices recorded from the interviews were treated with enormous confidentiality at the end of the discussion. The researcher also conducted interviews and held discussions with the respondents at a time that was most convenient for all of them. Ethical clearance was also obtained from University of Ghana Ethics Committee for Humanities with the ethical certificate number as (ECH 024/17-18).

3.9 Limitations

There were some limitations worth stating in the process of administering the questionnaires and conducting interviews for the study. They include the following:

1. Most of the farmers requested for financial gains before they could fully cooperate and engage effectively in the survey. Respondent's time was appreciated by offering them souvenirs after they completed the questionnaires or interviews. This action was taken because respondents' spent most of their time on the farm which translate into their livelihood and therefore did not want to short chain them for participating in my research.
2. It was also difficult to have full concentration and participation of the farmers who responded to the interviews specially the opinion leaders who double as farmers because of their assigned time for various activities on the farms.
3. The bureaucratic protocols involved at Ministry of Agriculture branch in Nkoranza was quite frustrating in getting MoFA officials to respond to key informant interviews.
4. This study is only based on the farmer's perception on the impact of migration on food systems and did not take into account other factors such as climatic changes, availability of rainfall among others which can influence food system sustainability in the study communities.

3.9.1 Summary

This section outlined the methodological underpinning of the study in addition to the profile of the study area. The study employed the mixed method approach with the study population constituting of farmers with a sample size of 270. The entire data was collected for a period of three months and analyzed by the use of SPSS and thematic analysis.

CHAPTER FOUR

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE FARMERS

4.1.0 Introduction

In order to understand the farmer's perceptions of migration and its impact in their communities, it is important to identify the socio-demographic characteristics of the sampled population. Migration is selective and a continuous process (Norman et al., 2005 ; Cattaneo, 2007) in terms of demographic variables like age, sex, marital status and social factors consisting of religion, education, occupation and a lot more.

This section therefore uses the demographic characteristics of the farmers as the basis to analyse factors perceived as impact of migration in the study area. Appropriate diagrams were used to represent the information to help provide better understanding of the data gathered from the field.

4.1.1 Sex composition of the farmers

Table 4.1 shows that out of the total respondents (270), 194 (71.9%) were males while 76 (28.1%) were females. In terms of their spatial distribution, general pattern where males formed the majority was observed in all communities. Out of the total respondents of farmers in Ahiayem, 98 of them (75.4%) were males while 32 respondents (24.6%) were females. Table 4.1 further indicates that in Asonkwaa, out of the total respondents of 90, 66 (73.3%) were males while about a quarter (26.7%) were females. The case was not different in Nyinase where out of the total of 50 respondents, 30 (60.0%) were males and 20 (40.0%) were females. A careful observation of the data shows that proportion of the males in the study area is higher than females. Also the sex distribution gives empirical evidence to the fact that farming in the municipality is dominated by males and this could perhaps be attributed to labour and energy demands of food system and its related activities.

Table 4.1: Sex distribution of respondents

Sex	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Male	98	75.4	66	73.3	30	60.0	194	71.9
Female	32	24.6	24	26.7	20	40.0	76	28.1
Total	130	100	90	100	50	100	270	100

Sources: Field survey, 2017

4.1.2 Age distribution of the farmers

As shown in Table 4.2, majority of the farmers were within the age category of 21-40 years. Some studies have shown that a person's age plays a significant role in their migration intension (Gödri & Feleky 2013). The finding of this study reveals that significant proportion (75.6%) of the famers fall within the working age group of 21 to 40 years which constitute a youthful farming population in the study area.

The Table further reveals that 13.7 percent were aged between 41 and 50 years while less than 10 percent of the total farmers were over 50 years. The youthful nature of the farmers support the statistical relationship by the chi-square test ($\chi^2 = 34.710$, $df = 8$ and $p\text{-value} = 0.000 < 0.05$) between the age of the farmers and their communities. The reason is that more farmers within the ages of 21 to 40 years are likely to contribute to food systems and its related activities in any of the communities.

Table 4.2: Age distribution of respondents

Age	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
11-20	13	4.8	0	0.0	0	0.0	13	4.8
21-30	30	23.1	35	38.9	6	12.0	71	26.3
31-40	58	44.6	38	42.2	37	74.0	133	49.3
41-50	19	14.6	14	15.6	4	8.0	37	13.7
51+	10	7.7	3	3.3	3	6.0	16	5.9
Total	130	100	90	100	50	100	270	100

$\chi^2 = 34.710$, $df = 8$ and $p\text{-value} = 0.000$ (Significant)

Source: Field survey, 2017

4.1.3 Educational status of respondents

This segment describes the level of education of farmers in the study area. Table 4.3 shows the distribution of the educational status of farmers in the area.

Out of the total (270) study sample, 41.5 percent had no formal education. A little more than a quarter (27.8%) of the farmers had formal education up to JHS/JSS level. Again, close to one-fifth (18.9%) of the respondents had education up to primary level. Respondents who attained Middle, SHS/SSS, Vocational/Commercial and Tertiary education recorded just 2.2, 6.3, 3.3 and 3.7 percent's respectively. A little more than two-fifth (41.5%) of the respondents were illiterate and the implication is that many of the farmers may not be able to cope with the complexity of modern technology associated with agriculture and food systems if introduced to their communities.

Table 4.3: Educational level of respondents

Education	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
No education	71	54.6	25	27.8	16	32.0	112	41.5
Primary	17	13.1	23	25.6	11	22.0	51	18.9
JHS/JSS	26	20.0	30	33.3	19	38.0	75	27.8
Middle	0	0.0	4	4.4	2	4.0	6	2.2
SHS/SSS	14	10.8	3	3.3	0	0.0	17	6.3
Voc/Comm	2	1.5	5	5.6	2	4.0	9	3.3
Tertiary	10	7.8	0	0.0	0	0.0	10	3.7
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017

However, the spatial distribution exhibit some variations regarding the educational level of respondents in the communities. With respect to Asonkwaa and Nyinase, greater proportion of the respondents, representing 33.3 percent and 38.0 percent respectively, had attained education up to JHS/JSS level. This has the potential to influence their adaptive capabilities and strategies unlike Ahyiayem where more than half (54.6%) had no formal education. The implication is that low level of education among respondents in Ahyiayem can affect their response to the impact of out-migration on food system in the area.

4.1.4 Marital status of respondents

Information on marital status is presented in Table 4.4. The Table indicates that majority of the farmers (66.9%, 57.8% and 82.0%) from Ahyiayem, Asonkwaa and Nyinase respectively were married.

Table 4.4: Marital status of respondents

Marital status	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Married	87	66.9	52	57.8	41	82.0	180	66.7
Consensual Union	3	2.3	9	10.0	0	0.0	12	4.4
Separated	9	6.9	9	10.0	4	8.0	22	8.1
Divorced	5	3.8	6	6.7	0	0.0	11	4.1
Widowed	12	9.2	5	5.6	5	10.0	22	8.1
Never married	14	10.8	9	10.0	0	0.0	23	8.5
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017

Spatially, the distribution of marital status in the communities gave credence to the fact that the rest of the respondents who were in consensual union, separated, divorced, widowed and never married recorded less than ten percent of the total number of farmers in the study area. This implies that two-third of the respondents (66.7%) were married and may have children who can contribute to food system activities or become a drag to their farming activities especially if they are too young.

4.1.5 Religious affiliation of respondents

In terms of religion, Christians form the majority than other faiths. Christians, comprising of all Christian faith, constitute 69.2 percent of the total population. The Muslim population made up of Islam faith is quite significant and represent more than a fourth (28.1%). This is as a result of in-movement of farmers from Muslim dominated neighbourhoods in the Northern part of Ghana. Spatially, traditional religion still maintain its strength and influence in the municipality with Ahyiayem recording the highest in rank order. This is evidenced by the fetish houses scattered all over the municipality and local beliefs in spiritual forces which

has impact on natural resources such as rivers and forest of which Ahyiayem boast of some of the resources.

With regards to non-alliance with any religious sect, 12.2 percent of the farmers responded positively.

Table 4.5: Religious Affiliation of respondents

Religious status of respondent	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
No religion	16	12.3	8	8.9	9	18.0	33	12.2
Catholic	23	17.5	35	38.9	10	20.0	68	25.2
Pentecostal/Charismatic	26	20.0	23	25.6	17	34.0	66	24.4
Other Christians	11	8.5	9	10.0	0	0.0	20	7.4
Islam	47	36.2	15	16.7	14	28.0	76	28.1
Traditional	7	5.4	0	0.0	0	0.0	7	2.6
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017

4.1.6 Employment status of respondents

With respect to economic activities of the study communities, an overwhelming majority (98.5%) of the respondents were employed as farmers. This finding confirms the claim made by Ghana Statistical Service (2010) that Nkoranza South Municipality is predominately a farming community. Only few (1.5%) of the respondents from all the three communities were engaged in other businesses to augment their farming income.

Table 4.6: Employment status of respondents

Employment type		Communities							
		Ahyiyem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
		N	%	N	%	N	%	N	%
Main employment type	Farming	126	96.9	90	100.0	50	100.0	266	98.5
	Others	4	3.1	0	0.0	0	0.0	4	1.5
Secondary employment type	Formal	9	6.9	4	4.4	0	0.0	13	4.8
	Informal	49	37.7	34	37.8	15	30.0	98	36.3
	None	72	55.4	52	57.8	35	70.0	159	58.9

Source: Field survey, 2017

Apart from farming, the other economic activities that a section of the population engaged in were petty trading, teaching, and tailoring among others. As shown in Table 4.6, about a third (36.3%) who were engaged in other economic activities other than farming were in the informal sector as compared to formal sector. However, as indicated in the Table, 58.9 percent were solely engaged in farming without doing any extra income generating activity.

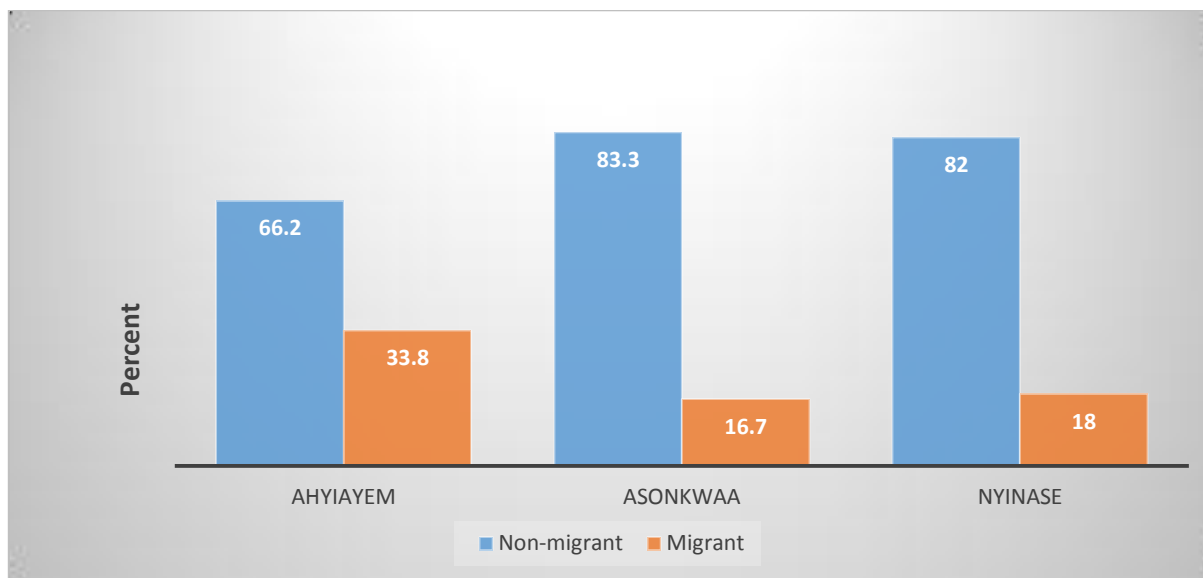
Spatially, Ahyiyem and Asonkwaa had significant number of respondents 49 (37.7%) and 34 (37.8%) respectively engaged in informal works as compared to Nyinase with the least percentage (30.0%). The implication is that more than half of the respondents (75.5%) in Ahyiyem and Asonkwaa together took informal jobs to make extra income to supplement what they earn from farming activities.

4.1.7 Respondent's place of birth

Figure 4.8 presents information on place of birth of the respondents. According to the figure, the majority of the respondents were born in the municipality and it was evident in all the three communities.

Spatially, with regards to those born outside the municipality, a significant proportion reside in Ahyiayem (33.8%) as compared to Asonkwaa (16.7%) and Nyinase (18.0%). The reason is that though the community has been experiencing out-migration, per the field report as stated by the respondents, it has become the preferred destination for most people especially farmers from other part of Ghana. This could be due to its unique rainfall pattern, fertile nature of the lands as well as its proximity to Ejura -Sekyedumase district in the Ashanti region.

Figure 4.8: Respondent's place of birth



Source: Field survey, 2017

4.1.8 Migration of children who can contribute to food system activities

In Table 4.7, majority (64.1%) of the respondents have between 1 and 2 children who could have helped in food production but have migrated to the urban cities. In terms of spatial distribution of migrated children, greater proportion (90.0%) of the respondents from Ahyiayem have “1 or up to 4” migrated children from their households. However, in Asonkwaa and Nyinase, 40.0 percent and 32.0 percent of the respondents respectively have between “3 and 5+” migrated children from their households. The high number of children who have migrated from Ahyiayem could be attributed to the children not having interest in

farming but could be interested in other economic activities in urban centers. The chi-square test indicates that there is statistical relationship ($\chi^2 = 2.448$, $df = 4$ and $p\text{-value} = 0.007 < 0.05$) between migrated children who could have contributed to food systems in the three communities

Table 4.7: Migration of children who can contribute to food system activities

Migrated Children	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
1-2	85	65.4	54	60.0	34	68.0	173	64.1
3-4	32	24.6	26	28.9	9	18.0	67	24.8
5+	13	10.0	10	11.1	7	14.0	30	11.1
Total	130	100	90	100	50	100	270	100

($\chi^2 = 2.448$, $df = 4$ and $p\text{-value} = 0.007 < 0.05$)

Source: Field survey, 2017

CHAPTER FIVE

PERCEPTIONS OF THE FARMERS ABOUT MIGRATION

5.1.0 Introduction

This chapter presents the findings regarding farmer's perception about migration in the study area. It present information on remittances and it usage, factors triggering migration, migration benefits to left-behind families among others.

5.1.1 Community perceptions of migration in the municipality

In ranked order, respondents were of the view that the effects of rural-urban migration on agricultural activities are labour shortage (95.9%), low food production (62.2%), decrease in farming activities (34.4%) and improved living standards (10.4%). In terms of spatial distribution, the outcome portrays similar pattern in each community where labour shortage was stated by the majority in all cases. With regards to food production, Nyinase recorded the highest percentage (92.0%). Labour shortage seems to have affected low production the most in Nyinase more than any other community which could be as a result of high migration of children within the workable age group from the community.

This finding supports that of Ajaero and Onokala (2013) who stated that labour shortage is one of the essential factors that affect agriculture in rural areas. The significant difference in decrease in farming activities, labour shortage and food production from the results of the chi-square test ($p < 0.05$), indicates that there is high incidence of migration in the study area.

An opinion leader noted:

We don't get adequate labour to work in our farms. They have all gone to either Accra or Kumasi and of late to Takoradi which is becoming popular here. So labour for farming is difficult nowadays because the youth who have the manpower have gone to the urban cities. (Opinion leader, 2017)

Table 5.1: Community perceptions on migration in the municipality

Community perception on migration	Communities						Total		χ^2 test
	Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		N	%	
	N	%	N	%	N	%			
Decrease in farming activities	58	44.6	15	16.7	9	18.0	82	30.4	$\chi^2= 24.085$ df=2 p=0.000 (sig)
Labour shortage	120	92.3	89	98.9	50	100.0	259	95.9	$\chi^2= 8.500$ df=2 p=0.014 (sig)
Increase in farming income	10	7.7	8	8.9	2	4.0	20	7.4	$\chi^2= 1.150$ df=2 p=0.563
Low food production	78	60.0	44	48.9	46	92.0	168	62.2	$\chi^2= 25.941$ df=2 p=0.000 (sig)
Improve living standard	16	12.3	10	11.1	2	4.0	28	10.4	$\chi^2= 2.761$ df=2 p=0.251

Source: Field survey, 2017. *Multiple responses possible

5.1.2 Perception of respondents about pull factors of the destination

The pull factors perceived to be motivating migration from the study area include employment opportunities, better economic conditions and urban infrastructure and way of life. Based on the percentages shown in Table 5.2, the most important pull factors in ranked order are employment opportunities (78.9%), better economic conditions (63.0%), urban infrastructure and way of life (28.0%). According to the results of the data analysis, the majority (72.0%) of the respondents in Nyinase perceived better economic conditions at the destination as a motivating factor to migrate as compared to Asonkwaa and Ahyiayem which recorded 63.3 percent and 59.2 percent respectively. As stated by the respondents, non-agricultural activities at the urban centres are more lucrative than farming.

Table 5.2: Perception of respondents about pull factors of the destination

Perception of pull factors at the destination	Communities						Total		χ^2 test
	Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		N	%	
	N	%	N	%	N	%			
Employment opportunities	94	72.3	75	83.3	44	88.0	213	78.9	$\chi^2= 6.941$ df=2 p=0.031 (sig)
Better economic conditions	77	59.2	57	63.3	36	72.0	170	63.0	$\chi^2= 3.433$ df=4 p=0.488
Urban infrastructure and way of life	43	33.1	13	14.4	14	28.0	14	28.0	$\chi^2= 9.751$ df=2 p=0.008 (sig)
Others (Specify)	1	0.8	1	1.1	0	0.0	0	0.0	$\chi^2= 0.550$ df=2 p=0.760

Source: Field survey, 2017. *Multiple responses possible

The chi-square results indicate that there is significant association between perceived employment opportunities at the destination and migration by farmers in Nyinase than Ahyiayem and Asonkwaa ($\chi^2 = 6.941$, df = 2 and p-value = $0.031 < 0.05$). This could be as a result of the level of unemployment in the area and the low profit obtained from farming. The assertion by the respondents is consistent with Opare (2003), Awumbila (2007), Berg (2007), and Kwankye et al., (2007) who stated that migration only surfaces when reasons to leave the origin (push) can be eliminated by immediate pull factors at a particular destination (Munize-Solari et al., 2010). One farmer had this to say:

Farming is not profitable anymore, so everybody is abandoning it for urban cities because you can make good money when you migrate. When you look around, all the nice houses are owned by migrants who do non-agricultural jobs in the cities (Opinion leader in Asonkwaa, 2017).

5.1.3 Number of migrants away from the households

In Table 5.3, more than a third of the respondents (36.7%) had 4 migrants who were away from their households. In terms of spatial distribution of number of migrants, Ahyiayem had greater proportion of the migrants (58.4%) from 1 up to 3 migrants. Households within Asonkwaa and Nyinase recorded 36.6 percent and 32.0 percent constituting 1 up to 3 migrants respectively. The high number of migrants from Ahyiayem to urban centers could be the unattractive nature of agriculture and the presence of migrants from elsewhere into the area thus, competing with the indigenes on few available jobs and fertile lands. The overall implication is that the number of migrants from the community is likely to influence the socio-economic status of the left behind family as well as the development in that community. However, some studies (Kandel et al. 1996) have shown that the significant proportion of migrants emanating from a particular household or family as well as the community does not necessarily translate into better life for the migrant and left-behind family but may depend on the factors associated with the destination. It is in this vein that the outcome of the table could either be beneficial to the left-behind families or detrimental since their presence in the rural areas could have augmented the labour force needed for farming activities.

Table 5.3: Number of migrants from the households

Number of migrants from households	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
1	6	4.6	2	2.2	0	0.0	8	3.0
2	41	31.5	11	12.2	2	4.0	54	20.0
3	29	22.3	20	22.2	14	28.0	63	23.3
4	40	30.8	36	40.0	23	46.0	99	36.7
5+	14	10.8	21	23.3	11	22.0	46	17.0
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017

5.1.4 Types of migrants from the households

Out of the total study sample, three-quarters (75.2%) of the respondents indicated that they have internal migrants from their households who were staying in different regions of Ghana (Table 5.4). This was evident in all the three communities as observed in Asonkwaa (68.9%), Ahyiayem (76.9%) and Nyinase (82.0%). With respect to international migration, as high as one-tenth (10.4%) of the study sample indicated having a family member that was living in a different country. From the field reports, the increase in internal migration is recent development in the area. This is as a result of the current happenings in Libya where significant portion of the migrants in the study area used to go to Libya as a preferred destination and transit country for onward migration. The views shared by the market queen in the interview is an indication of the importance of the type of migrant in the household:

In recent times, most people are moving to the urban centers in Ghana than travelling outside the country. They are changing their decision of migrating to Libya now but rather to Accra or Kumasi. They told me that outside Ghana especially Libya where most of the people were migrating to is no more safe to live because Gaddafi is no more and there is no order. Laws are not working and people are just killed like fowls (Market queen, 2017)

Table 5.4: Types of migrants from the household

Type of migrants	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Internal migrant	100	76.9	62	68.9	41	82.0	203	75.2
International migrants	10	7.7	15	16.7	3	6.0	28	10.4
Both	20	15.4	13	14.4	6	12.0	39	14.7
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017

5.1.5 Frequency of remittances received by households

Remittances play an important role to the left-behind families including portions of their household income. The complexity and widespread impact associated with remittances in the rural areas mostly depends on the frequency of receipt (Vargas-Lundius et al., 2008) and assigned task that accompanies the remittances. It is in this vein that respondent's views on the matter were obtained from the field.

Table 5.5 shows that more than half of the total respondents (55.2%) receive remittances regularly (once every two months). About 41.1 percent receive remittances once a while. Despite some respondents having migrants in their households they never receive any form of remittances. With regards to those who did not receive remittances at all, Ahyiayem recorded the highest percentage (4.6%) as compared to Asonkwaa (1.1%) and Nyinase (0.0%) which did not have any such household. The reason is that respondents in Ahyiayem will have no option than to engage in some non-agricultural earning job in order to augment their household income to provide for their families. The overall implication is that the majority of the respondents in the study area depend on remittances for their livelihood. This was confirmed by an opinion leader in an in- depth interview:

I rely on money sent by my son in the city for the upkeep of the family including his own children. I always receive it by the end of the month because if it delays for another month it will be difficult for us to survive (Opinion leader, 2017).

Table 5.5: Frequency of remittances

Frequency of remittance	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
No reasons stated	2	1.5	1	1.1	0	0.0	3	1.1
Regularly	64	49.2	55	61.1	30	6.0	149	55.2
Not at all	6	4.6	1	1.1	0	0.0	7	2.6
Once a while	58	44.6	33	36.7	20	40.0	111	41.1
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017

5.1.6 Usage of remittances by respondents

In Ghana, internal remittances receives little attention as compared with those coming from international source (Castaldo, Deshingkar & McKay, 2012). However, these internal remittances help in raising the living standard of the left-behind families and narrow the gap between rural and urban communities (Asante, 1995). This assertion is mostly deduced from the usage of the remittances sent by migrants either in the form of cash or goods (Castaldo et al. 2012).

From Table 5.6, the most essential application of remittances in ranked order are children school fees (89.2%), payment of health bill (62.7%) and clothing (34.7%).

In comparing remittance usage among the communities, majority of the respondents in Ahyiayem (91.4%) and Asonkwaa (88.3%) attributed the use of remittances in settling school fees with the exception of Nyinase where significant proportion (96.0%) indicated health bills as one of the things they use remittances for. The implication is that substantial amount of

remittances received by respondents are used for non-agricultural activities. With regards to the use of remittances on agricultural activities, less than a third of their remittances are used on labour (24.3%), farming tools (11.2%), pesticides (8.2%) and fertilizers (20.5%) respectively. Asonkwaa used greater percentage (32.2%) of its remittances in hiring labour as compared to Ahyiayem (19.5%) and Nyinase (22.0%). The reason is that farming households in Asonkwaa are able to relieve themselves especially women and children from physical burden by withdrawing them from arduous farm labour when it comes to food system and its related activities. The finding is consistent with World Bank report (2005) where remittances received by households are basically used for household consumption (food, clothing) as well as investment in children's education, health care among others. The following views were expressed on the usage of remittances by respondents:

I usually look up to my son who resides in Accra to send money to me for the payment of school fees for my youngest daughter. My wife is late and I am no longer strong enough to carry on with my farm work for income (An opinion leader in Asonkwaa, 2017).

I receive money but not always, I'm saying this because my son is also in Accra. The money sent is something small and cannot be used for farming activities. I use it to pay school fees or buy medicine when I'm sick but not for farm work it will not be enough (Market queen, 2017).

This finding contradicts that of Taylor et al. (2003), who's view was that loss of output from farms due to reduction in available labour by out-migration are usually compensated for wholly or partially by remittances from migrants which are used to purchase farming inputs or hired labour for farming activities.

Table 5.6: Usage of remittances

Usage of remittance	Communities							
	Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
	N	%	N	%	N	%	N	%
Labour	25	19.5	29	32.2	11	22.0	65	24.3
Farming tools	12	9.4	14	15.6	4	8.0	30	11.2
Pesticides	10	7.8	7	7.8	5	10.0	22	8.2
Fertilizers	21	16.4	26	28.9	8	16.0	55	20.5
Consumable items	42	32.8	8	8.9	4	8.0	54	20.1
Children school fees	117	91.4	78	88.3	44	62.0	239	89.2
Payment of health bills	67	52.3	53	58.9	48	96.0	168	62.7
Clothing	36	28.1	38	42.2	19	38.0	93	34.7

Source: Field survey, 2017. *Multiple responses possible

5.1.7 Households assistances to migrants

Studies have shown that perception about rural-urban migration is for the migrants to remit their household at the origin in order to augment the income of the household (Nguyen, Raabe & Grote, 2015; Gröger & Zylberberg, 2016). However, this study reveals that households in the origin tend to support migrants in the destination too.

From Table 5.7, more than half (59.6%) of the total respondents assist migrants from their households with foodstuffs from the farms, followed by child care of migrant children (32.2%). The rest of the assistances by the households to the migrants from all the three communities were less than 10 percent. This implies that majority of respondents consider foodstuffs from the farms, followed by child care as the most significant support they can provide for migrants from their households. This is however consistent with Crush & Caesar (2017) study on food remittances in Africa, where migrants households tend to remit food

items to migrants mostly from rural to urban areas. This could be attributed to the closeness and the size of the destination in the urban centers as well as migrant's inability to secure jobs on time. An opinion leader had this to say:

I send my son in Accra foodstuffs regularly anytime he calls. I just package it and give it to any available bus moving from the community to Accra (**Opinion leader in Ahyiayem, 2017**)

This view expressed support African Food Security Urban Network report (2010) that rural-urban food remittances influence the food security of urban population in developing countries.

Table 5.7: Households assistances to migrants

Household assistances to migrants	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Foodstuffs from the farm	84	64.6	63	70.0	14	28.0	161	59.6
Prepared food items	12	9.2	7	7.8	1	2.0	20	7.4
Money for transportation(Return)	1	0.8	0	0.0	0	0.0	1	0.4
Child care	32	24.6	20	22.2	35	70.0	87	32.2
Other (Specify)	1	0.8	0	0.0	0	0.0	1	0.4
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017

5.1.8 Migration benefits to left-behind family

In spite of the negatives that surrounds migration, it has been one of the wealth accumulation and survival strategies by most people especially in developing countries (Stark, 1991; Black et al., 2006). It is in this vein that respondents were asked whether they benefit from migration. Out of the study sample, majority (74.8%) were of the view that migration

enhances migrant status in both the origin and the destination due to increase in their personal income (Table 5.8). A little over two-third (67.8%) reported increase in family income due to the remittances being sent by a member of the family at the destination. Again, about 37.0 percent claim the remittances help overcome economic and investment challenges at the rural areas.

In terms of spatial distribution, family sources of income was significantly higher in Asonkwaa (95.6%) than in Ahyiayem (53.8%) and Nyinase (54.0%). The overall implication is that family left behind in Ahyiayem and Nyinase are likely not to benefit much from migration as a family household as compared with Asonkwaa where majority responded positively to family benefit from migration. In line with this assertion, one opinion leader had this to say:

My son's migration has helped the family to raise our status in the community. We are now economically stable and our family is respected in the community. This is as a result of the money my son who lived in Accra send which is used to cater for almost all the family needs and as the family head, I used some to support people who come to me for assistance (Opinion leader, 2017).

Table 5.8: Migration benefits to left-behind family

Migration benefits	Communities							
	Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
	N	%	N	%	N	%	N	%
To increase family source of income	70	53.8	86	95.6	27	54.0	183	67.8
To increase personal income	94	72.3	62	68.9	46	92.0	202	74.8
To overcome economic & investment challenges	60	46.2	19	21.1	21	42.0	100	37.0
Others (Specify)	0	0.0	1	1.1	0	0.0	1	37.0

Source: Field survey, 2017. *Multiple responses possible

5.1.9 Reasons for migration by sex of farmers

Table 5.9 present the distribution of farmers in terms of their sex and reasons for migration. A careful observation from the table indicates that for both sexes, more than half (60.7%) of the farmers migrated because of better income differentials between the origin and the destination. Less than 20 percent (both male and female) respondents mentioned urban life experience or educational opportunities as reasons for their migration. Conversely with the male population, more than a quarter (25.6%) cited unemployment in the rural areas while less than 10 percent (9.6%) of the females agrees with their male counterparts. Contrary to perception that most people move from rural areas because of lack of jobs, the findings indicates that people actually migrated as a result of better wages in non-agricultural works in the urban cities.

This observation is consistent with key characteristics of internal migration in Ghana where essential ‘pull’ of income, employment, other opportunities for personal or family success serves as the basis for migration to the urban cities (Awumbila et al., 2011; Black et al., 2006). However, the chi-square result indicates statistical relationship ($\chi^2 = 14.610$, $df = 4$ and $p\text{-value} = 0.006 < 0.05$) between reasons for migration and one’s gender. A farmer had this to share in that regard:

I migrated because of the opportunities in the urban cities especially better income in urban works rather than farming. It paid off well and I haven’t regretted at all. All I have now is from income outside farming so it is good to migrate if not you will remain in this village without anything (Return farmer, 2017).

Table 5.9: Percent distribution of farmers by reasons for migration and sex

Sex	Reasons for migration					Total
	No reasons stated	Better income differentials	To have urban life experience	Educational opportunities	Unemployment in the rural areas	
Male	0.4%	44.4%	0.0%	1.5%	25.6%	71.9%
Female	0.7%	16.3%	0.4%	1.1%	9.6%	28.1%
Total	1.1%	60.7%	0.4%	2.6%	35.2%	100.0%

($\chi^2 = 14.610$, $df = 4$ and $p\text{-value} = 0.006 < 0.05$)

Source: Field survey, 2017.

5.2.0 Migration experience of farmers

Respondents migration experience was also explored and the results shown in Table 5.9.1.

The results indicate that only a few respondents (0.7%) from all the three communities have never migrated. Spatially, all the communities in the study area portrays similar picture where majority of respondents in each community have migrated before. However, the rate of migration among respondents in the various communities is an indication of the study area being traditionally migratory (NSMA report, 2015). This was re-echoed during an in-depth interview when an opinion leader alluded that:

We migrate a lot in this community because farming is not the best when you compare with other activities in the cities. To remain in farming all my life without anything to boast off I will rather migrate because evidence of better wages reflect in the properties migrants have here which cannot match proceeds obtained from farming (Opinion leader in Asonkwaa, 2017).

Table 5.9.1: Migration experience of farmers

Migration experience of farmers	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Yes	129	99.2	89	98.9	50	100.0	268	99.3
No	1	0.8	1	1.1	0	0.0	2	0.7
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017.

5.2.1 Migration benefits by sex of farmers

Table 5.9.2 shows the relationship between sex groups and benefits they derived from migration as a household. With regards to ‘increase in family sources of income’ and ‘increase in personal income’ as benefits from migration, both sexes’ responses were unanimous but was higher among males (52.6% and 53.3%) than females (15.2% and 21.5%) respectively. The implication is that majority of these respondents perceive migration as survival and household strategy to alleviate poverty in their communities. This is consistent with Stark (1984) and Bridge (2005) study on migration decision making where they expound that rural migrant’s sees migration as wealth accumulation strategy in order to overturn their situation in the rural areas. Similarly, the percentage of males who cited ‘overcoming economic and investment challenges as benefits derived from migration were close to a quarter (22.6%) than their female counterparts (14.4%) for the same reasons. However, there is significant association ($\chi^2 = 9.264$, $df = 1$ and $p\text{-value} = 0.002 < 0.05$) between increase family source of income and one’s sex but higher among males than females. Again, the chi-square test indicate a significant association ($\chi^2 = 9.248$, $df = 1$ and $p\text{-value} = 0.002 < 0.05$) between overcoming economic and investment challenges and sex of farmers but higher with respect to males than females. The reason is that males are likely

to secure well paid job than females at the destination. The following view was shared by a 46 year old returned farmer:

I migrated because my family had nothing to call our own, we were very poor as a family but out of the migration I embarked on, I have built a decent house for my family and also established a big provision shop for my mother aside the farming work she engaged in. In fact it has really changed the face of our family from bad to better (Returnee farmer, 2017).

Another respondent had this to say:

Some of my friends are worst off because they migrated but for me I was lucky because I got a well-paid job so it has benefited me and my family a lot. Prior to my migration, our house was in a bad state, we were not also having any source of income. However, my migration have now enabled us to own a better dwelling place and we now have some capital that we use in running a family business. I can say as a whole, migration has been good to me and the entire family (Farmer in Nyinase, 2017).

Table 5.9.2: Percent distribution of benefits of migration by sex

Benefits of migration	Sex of respondents			χ^2
	Male	Female	Total	
To increase family sources of income	142 (52.6%)	41 (15.2%)	183 (67.8%)	$\chi^2= 9.264$ df=1 p=0.002 (sig)
To increase personal income	144 (53.3%)	58 (21.5%)	202 (74.8%)	$\chi^2= 0.126$ df=1 p=0.722
To overcome economic & investment challenges	61 (22.6%)	39 (14.4%)	100 (37.0%)	$\chi^2= 9.248$ df=1 p=0.002 (sig)
Others	1 (0.4%)	0 (0.0%)	1 (0.4%)	$\chi^2= 0.393$ df=1 p=0.531
Total	194 (71.9%)	76 (28.1%)	270 (100%)	

Source: Field survey, 2017. *Multiple responses possible

5.2.2 Summary

In a nut shell, the chapter expounded on the statistics of respondent's perceptions about migration in the study areas which included usage of remittances, type of migrant in their households and the general impact of migration in their communities.

CHAPTER SIX

EFFECT OF MIGRATION ON FOOD SYSTEMS AND HIRED LABOUR

AVAILABILITY

6.1.0 Introduction

This chapter presents empirical outcomes of the study. It examines the impact of migration especially out-migration on food system activities in the study area. It also explores the perceptions of respondents on hired farm labour availability as well as its overall effect on food production in the municipality.

6.1.1 Ways in which migration affect food systems

The implication of Table 6.1 is that farmers in Nyinase suffer the most in terms of labour shortage (98.0%) as compared to Asonkwaa (90.0%) and Ahyiayem (83.8%). However, this recurring labour shortage in the communities is an eminent trigger to low food production which is high in Nyinase (70%) than the other two communities.

Spatially, the communities in the study area show similar pattern on the effect of migration on food system activities with higher percentage in shortage of labour, followed by low food production through to decrease time spent on farming. The findings show that migration effect on food system is connected to all farming activities and the effect on one leads to the others as shown in Table 6.1.

The finding confirms a study by Ray (2004) that shows that whereas migration of labour force was rising, the return of this labour force to the rural areas was slow which tends to affect agricultural productivity in this areas. It is also consistent with Tacoli (2002) argument that rural areas are likely of experiencing labour shortage during raining season due to

migrants' unwillingness to return to engage in farming activities in the rural areas. An agricultural extension officer had this to share:

In fact when people migrate from the municipality it affects labour cost and reduces agricultural productivity. This is because many of the farmers cannot afford labour, so they either abandoned the farm or reduce the size of their farm which in turn affect the overall output of production and income obtained (MoFA Officer, 2017).

Table 6.1: Ways in which migration affect food system (Agriculture)

Migration impact on food system activities	Communities							
	Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
	N	%	N	%	N	%	N	%
Decrease in time spent on farming	33	25.4	25	27.8	9	18.0	67	24.8
Reduce income	54	41.5	28	31.1	19	38.0	101	37.4
Lower food production	79	60.8	61	67.8	35	70.0	175	64.5
Shortage of labour	109	83.8	81	90.0	49	98.0	239	88.5
Other (Specify)	0	0.0	1	1.1	0	0.0	1	0.4

Source: Field survey, 2017. *Multiple responses possible

6.1.2 Impact of migration on farming income

The results in Table 6.2 indicate that perception of the majority (78.1%) of the study sample is negative with respect to the impact of migration on farming income. Spatially, all the three communities Ahyiayem (73.8%), Asonkwaa (78.9%) and Nyinase (88.0%) were affected with regards to decrease in farming income. This according to the respondents is as a result of out-migration from the communities which affect labour needed for farming activities. This is consistent with NSMA profile report on the municipality which blame the significant drop in farm income largely on migration (NSMA, 2014) from the communities though other factors (climatic conditions, lack of modern storage facilities etc) are also likely to cause that. Again

the findings support Zahonogo's (2011), who in his study on migration and agriculture production in Burkina Faso reported households with migrant have an average of agricultural income lower than that of non-migrant households. This assertion attests to the fact that lost labour from migration is an indicator of low output from farms which translate into low income. It also corroborates findings of de Brauw & Rozelle (2003) that loss of household labour from migration negatively affect household's crop income. An agricultural extension officer had this to share in that regard:

We know in agricultural business that poor harvest can become disastrous for farmers. So let us expand the discussion beyond just agricultural productivity to general welfare issues like income obtained by farmers to help them stand on their feet in terms of situations like this (MoFA Officer, 2017).

Table 6.2: Impact of migration on farming income

Migration effect on farming income	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
No reasons stated	9	6.9	0	0.0	0	0.0	9	3.3
Improved farm income as a result of high productivity	10	7.7	2	2.2	0	0.0	12	4.4
Decrease in farm income as a result of low productivity	96	73.8	71	78.9	44	88.0	211	78.1
Farm income remains unaffected	15	11.5	17	18.9	6	12.0	38	14.1
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017.

6.1.3 Modes of clearing farm land

Pertaining to how farmlands are being cleared in the three communities, large proportion of respondents in Ahyiayem (85.4%), Asonkwaa (81.1%) and Nyinase (84.0%) indicated they used simple tools such as hoes and cutlasses. Only a few resorted to other means of clearing their farmlands such as the use of chemicals (10.4%) and machines (5.9%). Modes of clearing farmland did not seem to have any bearing on the farming communities since no statistical relationship ($\chi^2 = 5.009$, $df = 4$ and $p\text{-value} = 0.2860 > 0.05$) was observed. The implication may be that farming in the study area is not mechanized resulting in the traditional way of clearing farmland and thus making farming a labour intensive venture in the area. An opinion leader in one of the communities during an interview had this to say:

It takes more time to clear our farmland and this requires more labour. The reason is that farming here is cutlass and hoes so even if you have the skills and knowledge your strength will not permit you especially when it comes to weeding (Opinion leader in Ahyiayem, 2017).

Table 6.3: Mode of clearing farm lands

Types of tools used	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Simple tools	111	85.4	73	81.1	42	84.0	226	83.7
Machines (tractor)	10	7.7	5	5.6	1	2.0	16	5.9
Others (Specify)	9	6.9	12	13.3	7	14.0	28	10.4
Total	130	100	90	100	50	100	270	100

($\chi^2 = 5.009$, $df = 4$ and $p\text{-value} = 0.2860 > 0.05$)

Source: Field survey, 2017.

6.1.4 Cost of weeding farmlands by sex of farmers

Amount spent on clearing farmlands by farmers in terms of their sex was assessed in order to find out whether one's sex plays a role when it comes to amount charged by labourers in clearing farmlands. Overwhelming majority (88.5%) of farmers pays an amount ranging from 100-500 Ghana cedis for weeding farms. Spatially, large proportion of female farmers (93.4%) clears an acre of land within the price range of 100-500 Ghana cedis as compared to their male counterparts (86.6%). The reason is that majority of the female farmers agricultural lands does not exceed an acre farm land which is the limit their strength can afford in terms of labour for work on those farms. Again, amount charged in the range of 600 or up to 1000+ Ghana cedis is mostly attributed to males (10.8%) than females (1.3%). According to the respondents, males cultivate more acres of land in order to maximize their source of income and end up paying more for the services of labourers. The overall effect is that the exorbitant amount charged will put pressure on farmers to either shun the agricultural work and pursuit non-agricultural activities at the urban centers. An opinion leader had this to share:

Hiring the services of labourers for weeding farms is expensive nowadays especially those who cultivate more acres of land. They charge exorbitantly but are reliable than the tractor services run by the MoFA Directorate in the municipality. We in this community have no option than to pay the amount charge in order to grow our crops and hope to generate some income after harvest (Opinion leader in Nyinase, 2017).

However, the chi-square test result shows a significant difference ($P < 0.05$) between sex of farmers and the amount they pay in weeding their farms which is higher among males than females. The reasons is that males are highly likely to cultivate large acres of land than their female counterparts who mostly practice subsistence farming for household consumption. This confirms Cramb et al. (2009) assertion on labour for weeding farms in the rural areas as

challenging due to out-migration making the cost of hiring labour for weeding very expensive.

Table 6.4: Amount charged for weeding farmlands by sex of farmers

Amount charge (GH¢)	Sex of respondent					
	Male		Female		Total	
	N	%	N	%	N	%
No reason stated	5	2.6	4	5.3	9	3.3
100-500	168	86.6	71	93.4	239	88.5
600-1000	19	9.8	1	1.3	20	7.4
1000+	2	1.0	0	0.0	2	0.7
Total	194	100	76	100	270	1000

($\chi^2 = 19.184$, df = 6 and p-value = 0.004 < 0.05)

Source: Field survey, 2017

6.1.5 Sources of farm labour

Farming labour sources in the study area is presented in Table 6.5. The sources included family labour only, hired labour only, both family and hired labour as well as communal labour. The results indicated that, 83.3, 86.7 and 98.0 percent's respectively of respondents from Ahyiyem, Asonkwaa and Nyinase used hired labour only for farming activities. This suggests that out-migration in the communities may have reduced labour availability which have resulted in the use of hired labour. Though, communal labour is considered to be a milder form of compulsory labour at some macro level (Clayton & Savage, 1975), at the micro level it plays a major role in the absence of family labour where farmers pool their

labour into groups and complete assignment for each member which is reciprocated without pay (Gilligan, 2004).

Spatially, the exclusive use of communal labour in Asonkwaa (37.8%) as compared with Ahyiayem (19.2%) and Nyinase (20.0%) attest to the likelihood that there is a relatively higher availability of communal labour in the area. Per the field report stated by respondents, reasons for low patronage of communal labour in the other two communities (Ahyiayem & Nyinase) has to do with the level of trust among colleagues and the denial of oral agreements made whenever is their turn to help others. However, the chi-square test indicate significant association ($\chi^2 = 6.640$, $df = 2$ and $p\text{-value} = 0.0360 < 0.05$) between hired labour and the communities but higher usage in Nyinase than the other communities. Also communal labour show significant difference ($\chi^2 = 12.965$, $df = 2$ and $p\text{-value} = 0.011 < 0.05$) in the three migration areas but higher in Asonkwa. The reasons are that farming activities depends on these two most important types of labour readiness in the study area.

This finding supports Maharjan, Bauer & Knerr (2013) who did a study on migration for labour and its impact on farm production and reported that migrant households use significantly more hired labour for farming activities than non-migrant households because of absence of their family members. The following opinions were shared in that regard:

I use hired labour a lot because family members are not available of late as it used to be sometime back due to migration. I remember my father used to call his nephews and children for farm work but now it's not like that in this community. For farming activities I rely on hired labour always (Opinion leader in Nyinase, 2017).

I rely on hired labour for my farm work which is very expensive, but sometimes I use communal labour especially when the work in the farm is not demanding. My colleague farmers and I work in my farm and we do same for them as well so as to reduce the cost of hiring labour all the time (Farmer in Asonkwaa, 2017).

Table 6.5: Sources of farm labour

Sources of farm labour	Communities								χ^2
	Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total		
	N	%	N	%	N	%	N	%	
Family labour only	24	18.5	13	4.4	8	16.0	45	16.7	$\chi^2= 0.638$ df=2 p=0.7270
Hired labour only	109	83.3	78	86.7	49	98.0	236	87.4	$\chi^2= 6.640$ df=2 p=0.0360 (sig)
Both family & hired labour	36	27.7	15	16.7	7	14.0	58	21.5	$\chi^2= 5.869$ df=2 p=0.053
Communal labour	25	19.2	34	37.8	10	20.0	69	25.6	$\chi^2= 12.965$ df=2 p=0.011(sig)

Source: Field survey, 2017. *Multiple responses possible

6.1.6 Type of labour use for planting and harvesting

Results in Table 6.6 show the type of labour used for planting in the study area. About 87.9 percent of the respondents relied on hired labour for planting crops whereas 17.4 percent depended on family labour. The rest had less than five percent of the total respondents. Spatially, Ahyiayem had the greater percentage in family labour (20.8%) as compared to Asonkwaa (17.8%) and Nyinase (8.0%). This implies that farmers in Ahyiayem were able to rely on family labour in addition to hired labour for planting. This finding is consistent with Ye & Plan (2016) study on Concepts and realities on family farming where rural farmers have always relied on family labour for farming but are shifting to hiring of labour due to out-migration of the youth to the urban cities.

Another stage in farming which needs intensive labour is harvesting. Respondents from Ahyiayem (86.9%), Asonkwaa (81.1%) and Nyinase (90.0%) identified hired labour as the major form of labour used in harvesting. Again, family labour also plays a significant role in the harvesting stage. Comparing the three communities, Asonkwaa tended to utilize family

labour more (18.9%) than Ahyiyem (11.5%) and Nyinase (8.0%). The likely impact is that Asonkwaa may use family labour as a substitute for the scarcity of hired labour availability. However, it was evident in the Table 6.6 that the usage of family labour for both planting and harvesting was fairly high in Asonkwaa (36.7%) and Ahyiyem (32.3%) than Nyinase (16.0%). The general implication is that the use of family labour could be as a result of the demand and the amount charged when it comes to hiring labour for a particular activity. One farmer had this to say:

Harvesting time is the reward of your hard work as a farmer so if you don't hire labour you can lose your foodstuffs to thieves or even get spoil. So we always hire labour when it time for harvesting (Farmer in Asonkwaa, 2017).

Table 6.6: Type of labour use for planting and harvesting

Types of labour		Communities							
		Ahyiyem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
		N	%	N	%	N	%	N	%
Labour use for planting	No reasons stated	2	1.5	1	1.1	0	0.0	3	1.1
	Family labour	27	20.8	16	17.8	4	8.0	47	17.4
	Hired labour	94	72.3	73	81.1	46	92.0	213	78.9
	Communal labour	7	5.4	0	0.0	0	0.0	7	2.6
Labour use for harvesting	No reasons stated	2	1.5	0	0.0	1	2.0	3	1.1
	Family labour	15	11.5	17	18.9	4	8.0	36	13.3
	Hired labour	113	86.9	73	81.1	45	90.0	231	85.6

Source: Field survey, 2017.

6.1.7 Crop types that need intensive labour

There are some crops that thrive so well depending on the availability of labour. Some studies show that crops such as rice, maize and wheat require intensive labour (Talhelm & Oishi, 2018). The finding from this study identified tubers such as yam, plantain and cassava to be

the most crops that demand intensive labour. Out of the sample population, more than one-third (44.8%) grow those crops (tubers) that require intensive labour. One farmer who doubled up as an opinion leader had this to say:

I grow a lot of crops such as yam, maize and groundnuts. But the one I spent much money on is yam cultivation especially the labour for the yam mound (Opinion leader in Asonkwaa, 2017).

Spatially, with regards to vegetables as a crop, greater proportion of the respondents (48.0%) in Nyinase indicated that vegetables demanded more labour as compared with Ahyiayem (28.5%) and Asonkwaa (38.9%). The likelihood is that farmers in Nyinase dominate in vegetable production because of its proximity to water bodies in the study area.

Table 6.7: Crop types that requires intensive labour

Crops types that requires more labour	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Cereals	19	14.6	5	5.6	0	0.0	24	8.9
Tubers	58	44.6	41	45.6	22	44.0	121	44.8
Vegetables	37	28.5	35	38.9	24	48.0	96	35.6
Cash crop	16	12.3	9	10.0	4	8.0	29	10.7
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017.

6.1.8 Storage facilities and duration of harvested foodstuffs before transportation

In terms of storage facilities used by farmers, Table 6.8 shows that overwhelming majority (95.9%) of the respondents stored farm produce using traditional storage facilities such as traditional barns, cribs and roof storage while less than five percent (4.1%) relied on modern

storage facilities such as silos and Purdue Improved Crop Storage (PICS) which comprise of polythene bags surrounded by a layer of woven polypropylene. Spatially, the abundance of traditional storage facilities which are in deplorable state compel farmers to sell their farm produce at low prices during harvest. This confirms why greater percentage (44.4%) of the food stuffs from the farms last 1- 3 months before transportation to the market centers.

Again, close to one-third (31.1%) of the farmers stored their foodstuffs between 4-6 months with less than twenty percent storing their foodstuffs between 7 to 12 months. This suggests that farmers are likely to sell their produce within a short period after harvest due to the poor nature of the storage facilities available. One opinion leader had this to share:

We sell our farm produce immediately because we don't have good place to keep them. So we get low prices all the time due to lack of proper facilities for storage. All our sweat goes in vain because we don't have modern facilities to store our foodstuffs beyond three months let alone a year. The situation demotivate us to farm hence we migrate to the cities for non-agricultural works (Opinion leader, 2017).

Table 6.8: Storage facilities and duration of harvested foodstuffs before transportation

Duration and facilities use for storage		Communities							
		Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
		N	%	N	%	N	%	N	%
Storage facilities	Modern	9	6.9	1	1.1	1	2.0	11	4.1
	Traditional	121	93.1	89	98.9	49	98.0	259	95.9
Duration (month) of foodstuffs	1-3	51	39.2	41	45.6	28	56.0	120	44.4
	4-6	40	30.8	33	36.7	11	22.0	84	31.1
	7-8	25	19.2	12	13.3	10	20.0	47	17.7
	8-12	13	10.0	4	4.4	1	2.0	18	6.7
	Other	1	0.8	0	0.0	0	0.0	1	0.4

Source: Field survey, 2017.

6.1.9 State of road network in the municipality

Proper road network is key in transporting both goods and services. It is recognized as strategic factor in agriculture and rural development (World Bank, 2008; Chakwizira & Mashira, 2009). It is in this regard that respondents were asked about their views on the nature of roads in the municipality. More than half (57.8%) of the respondents were of the view that the state of the roads were very bad whereas two in every five respondent (41.5%) mentioned the roads to be in bad state. With respect to the state of the roads, Nyinase recorded the highest percentage (88.0%) for having the most dilapidated roads (Very bad) as compared to Ahyiayem (70.0%) and Asonkwaa (23.3%). The reason, according to the respondents, is the neglect of that community when it comes to road development and maintenance of existing ones. This finding supports several studies which strongly suggest that investment in rural road construction and maintenance can have significantly positive impact on rural income and contribute to quality of lives (Kilkenny, 1998; IFAD, 2004; World Bank, 2008; Mashiri et al, 2008).

A market queen in the study area had this to share:

The roads here are in bad state, only few ones in the municipal capital are good. Those linking the farming communities are in deplorable state making it difficult to buy foodstuffs directly from the farms after harvest. When you hire vehicles to convey foodstuffs they charge exorbitantly and at the long run we tend to use our capital in paying the services of the drivers (Market queen, 2017).

Table 6.9: State of road network in the municipality

State of roads in the municipality	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Very bad	91	70.0	21	23.3	44	88.0	156	57.8
Good	2	1.5	0	0.0	0	0.0	2	0.7
Bad	37	28.5	69	76.7	6	12.0	112	41.5
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017

6.2.0 Modes of transport of foodstuffs and amount charged for transportation

Information on modes of transport of foodstuffs is presented on Table 6.9.1. Out of the total of 270 respondents, large proportion (90.7%) convey their foodstuffs using trucks while less than ten percent (8.1%) resorted to labour in carrying foodstuffs to the house. This is an indication that majority of farmers in the study area preferred trucks in transporting foodstuffs from the farms to that of labour used in carrying foodstuffs. This confirms the amount of money farmers pay for transporting foodstuffs since majority of them relied on truck services. Significant proportion (80.4%) of the respondents in all the communities surveyed paid between 100 to 500 Ghana cedis per trip of foodstuffs transported. A few (2.2%) of the respondents paid more than 1000 Ghana cedis as transportation.

Spatially, more than a quarter of the farmers in Asonkwaa (26.7%) and Nyinase (28.0%) were of the view that they pay exorbitant fares ranging from 600 to 1000 Ghana cedis as compared to Ahyiayem (6.9%). This may perhaps be attributed to the deplorable roads in these two communities. An opinion leader in Nyinase had this to say:

We pay too much when it comes to transportation of our farm produce. The reason is that the roads in the towns as well as those to the farms are in bad state and drivers complain of developing mechanical fault whenever they use the road. Hence they

charge high amount and if you don't pay, all your foodstuffs will get stuck in the farms and spoil. We can't carry them because they are many and beside our farms are far away from where we stay (Opinion leader, 2017).

The finding and the view expressed by the opinion leader is consistent with Kilkenny (1998) study on transport costs and rural development where he reported that farmers who resort to hiring of vehicles to convey their foodstuffs after harvest complain of exorbitant charges demanded by owners of these vehicles citing reasons as poor road network and distance.

Table 6.9.1: Modes of transport of foodstuffs and amount charged for transportation

Means of transport and amount charged		Communities							
		Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
		N	%	N	%	N	%	N	%
Modes of transport	On foot	6	4.6	11	12.2	5	10.0	22	8.1
	Truck	122	93.8	79	87.8	44	88.0	245	90.7
	Mini bus	2	1.5	0	0.0	1	2.0	3	1.1
Amount (GHC) charge for transportation	100-500	116	89.2	65	72.2	36	72.0	217	80.4
	600-1000	9	6.9	24	26.7	14	28.0	47	17.4
	1000+	5	1.9	1	1.1	0	0.0	6	2.2

Source: Field survey, 2017.

6.2.1 Materials used for packaging foodstuffs for local market

More than one-third (48.5%) of the respondents in Table 6.9.2 used wooden box as the material for packaging foodstuffs for the local market. This was followed by 42.6 percent of the respondents who preferred sacks as their packaging material for foodstuffs. Less than ten percent (8.9%) of the total respondents mentioned the use of plastics/ metal container. Spatially, greater proportion of the respondents (48.9%) in Asonkwaa used sacks as

compared with Ahyiayem (36.9%) and Nyinase (46.0 %). This implies that most of the farmers in Asonkwaa grow crops that demand sacks for packaging (cassava, maize etc) whereas the other two communities are noted for yam and vegetable cultivation. The low percentage associated with the use of plastics/metal container for packaging may be as a result of few farmers in the study area practicing cash crop farming (Cashew nuts).

Table 6.9.2: Materials use for packaging foodstuffs for local market

Materials for packaging	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Wooden box	70	53.8	38	42.2	23	46.0	131	48.5
Sacks	48	36.9	44	48.9	23	46.0	115	42.6
Plastics/metal container	12	9.2	8	8.9	4	8.0	24	8.9
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017.

6.2.2 Ways of solving labour shortage by sex of farmers

Table 6.9.3 presents the views expressed by farmers on how to solve labour shortage problem. The results indicate that males view on solving labour situation in the study area was the use of hired labour which was 13 times (83.0% - 69.7%) more in terms of percentages than that of what the females think. The next striking category was reducing land cultivated where the percentage of males was 7 times (12.9% - 19.7%) less than that of the females. However, the percentage of males who perceived drawing help from the extended family was 4times (3.6% - 7.9%) less than their female counterpart. Also, on the reliance on communal labour as a substitute for labour shortage, the females gave a higher responses as compared with their male counterparts. The overall implications suggest that while

significant proportion of the females perceived solving labour shortage by reducing land cultivation and working communally, majority of the males propose hiring labour as the overall substitute for labour shortage.

The result clearly shows that there is a statistical relationship ($\chi^2 = 10.521$, $df = 4$ and $p\text{-value} = 0.033 < 0.05$) between views on ways of solving labour shortage and the sex of farmers. This relationship emanate from the farmers swift response to labour shortage by hiring labour to complement their farm work. This finding is in consonance with Ohajianya (2005) study on rural-urban migration and its effect on agricultural labour in Nigeria where he reported that absence of household members for agricultural labour rendered farmers with no other option than to resort to hiring of labour. This assertion also confirms a view shared by one opinion leader:

The movement of our “people” to the urban cities has caused us a lot to the extent that there is no other way to get labour unless you hire. (Opinion leader in Nyinase, 2017).

These observations from the table shows the effect of migration on labour availability and the urgency to find ways of solving it.

Table 6.9.3: Ways of solving labour shortage by farmers

Remedies for labour shortage	Sex		Total
	Male	Female	
No reasons stated	1 (0.5%)	0 (0.0%)	1 (0.4%)
Hiring of labour	161 (83.0%)	53 (69.7%)	214 (79.3%)
Working communally	0 (0.0%)	2 (2.6%)	2 (0.7%)
With the help of extended family	7 (3.6%)	6 (7.9%)	13 (4.8%)
Reducing land cultivated	25 (12.9%)	15 (19.7%)	40 (14.8%)
Total	194 (100.0%)	76 (100.0%)	270 (100.0%)

($\chi^2 = 10.521$, $df = 4$ and $p\text{-value} = 0.033 < 0.05$)

Source: Field survey, 2017.

6.2.3 Use of hired labour

The study result in Table 6.9.4 indicates that weeding the farms, planting and harvesting of crops are the major activities that are labour intensive and therefore done by engaging extra labourers. The three communities (Ahyiayem, Asonkwaa and Nyinase) were unanimous on this. Spatially, the use of hired labour for transportation of farm produce varies, with Ahyiayem using more than a third (46.2%) of hired labour for conveying foodstuffs as compared with Asonkwaa (26.7%) and Nyinase (28.0%). The implication however may be that most of the roads in Ahyiayem are in bad state preventing the usage of vehicles (trucks) to convey farm produce instead of hired labour. An opinion leader had this to share:

Labour affect all farming activities. Those that needs immediate attention is weeding, planting and harvesting. I use hired labour for these activities than tractors which are expensive and unreliable. The reason is that the municipality don't have enough and aside that it cannot do most of the work. When it comes to the weeds that grow along germinated maize, it cannot be cleared using tractors. It will destroy all the maize so I normally use hired labour. Another area that I use labour a lot is planting crops like yam, cassava and maize (Opinion leader, 2017).

This supports the finding of Anim (2011), who reported that in the absence of household labour, hired labour are employed for the most pressing farming activities such as weeding, planting and harvesting which are always the prime objectives of any farmer.

Table 6.9.4: Use of hired labour

Use of hired labour	Communities							
	Ahyiyem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
	N	%	N	%	N	%	N	%
Ploughing	13	10.0	5	5.6	2	4.0	20	7.4
Weeding	117	90.0	84	93.3	45	90.0	246	91.1
Harvesting	92	70.8	48	53.3	38	76.0	178	65.9
Staking	18	13.8	4	4.4	0	0.0	22	8.1
Transporting	60	46.2	24	26.7	14	28.0	98	36.3
Planting	104	80.0	81	90.0	40	80.0	225	83.3
Other (Specify)	0	0.0	0	0.0	1	2.0	1	0.4

Source: Field survey, 2017. *Multiple responses possible

6.2.4 Reasons for labour shortage

The reasons for labour shortage from respondents are presented in Table 6.9.5. Among the reasons outlined, out-migration is the most significant. Overwhelming majority from all the three communities; Ahyiyem (94.6%), Asonkwaa (100.0%) and Nyinase (100.0%) attributed labour shortage to out-migration from the area. Spatially, a similar pattern was observed among the reasons for labour shortage with the exception of out-migration where Asonkwaa and Nyinase recorded the highest percentage with Ahyiyem having the least percentage. The implication of this finding is that farmers in Nyinase and Asonkwaa recognised out-migration as the main contributor to labour shortage than the other variables (education, change in rainfall pattern and poverty) which were less than half of the total responses of farmers in each community. An opinion leader had this to say:

There is scarcity of labour when it comes to farming in this community all because the people, mostly the youth who have the strength to work have all gone to the urban cities creating shortage of labour in the community (Opinion leader in Nyinase, 2017).

This finding is consistent with Hossain (2011) in a study in Bangladesh where significant shift from agricultural work to non-farm works in the cities indicate that migration create a pool of labour shortage in the rural areas.

Table 6.9.5: Reasons for labour shortage

Reasons for labour	Communities							
	Ahyiayem n = 130		Asonkwaa n = 90		Nyinase n = 50		Total	
	N	%	N	%	N	%	N	%
In –migration	5	3.8	0	0.0	0	0.0	5	1.9
Out –migration	123	94.6	90	95.2	50	100.0	263	97.4
Education	17	13.1	10	11.1	5	10.0	32	11.9
Change in rainfall patterns	49	37.7	33	36.7	10	20.0	92	34.1
Poverty	54	41.5	30	33.3	13	26.0	97	35.9
Other opportunities	6	4.6	4	4.4	1	2.0	11	4.1

Source: Field survey, 2017. *Multiple responses possible

6.2.5 Impact of getting labour at the precise time for crop production

Table 6.9.6 presents the outcome of the impact of timely acquisition of labour for farming. Most respondents from all the three communities, namely Ahyiayem (78.5%), Asonkwaa (85.6%) and Nyinase (72.0%), agreed that timely acquisition of labour increase farm produce. However, a few (16.7%) were of the view that labour acquisition on time had no impact on farm produce. The overall implication is that availability of labour is necessary for farmers in order to increase food production at both the local and national level and this is likely to translate into food availability and affordability for the population. One farmer in Asonkwaa had this to say in that regard:

“Am ageing now so I don’t cultivate as much as I do when I was younger because the strength to do that is no more which always result in low food production from the farm. But if I get labour on time it will help increase my farm produce since the major farm work will be taken care of by the labour available” (Farmer in Asonkwaa, 2017).

Table 6.9.6: Impact of getting labour at the precise time for crop production

Impact of getting labour at the precise time for crop production	Communities						Total	
	Ahyiayem		Asonkwaa		Nyinase			
	N	%	N	%	N	%	N	%
No reason stated	2	1.5	1	1.1	3	6.0	6	2.2
Increase farm produce	102	78.5	77	85.6	36	72.0	215	79.6
Has no impact	24	18.5	10	11.1	11	22.0	45	16.7
I don't know	0	0.0	2	2.2	0	0.0	2	0.7
Other (Specify)	2	1.5	0	0.0	0	0.0	2	0.7
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017.

6.2.6 Evaluation of labour availability

Information presented on Table 6.9.7 indicate that respondent’s perception of labour availability is not different among the three communities. This findings indicate that large proportion of the farmers from the three communities attest to the fact that migration has caused decreased labour availability in the study area. Spatially, the perception of decreased labour was higher in Nyinase (94.0%) than Ahyiayem (79.2%) and Asonkwaa (78.9%). This assertion may have arisen from the significant out-migration from the area as indicated in table 6.9.5. The finding is consistent with Fasoranti (2009) study on perception of rural-urban migration in some selected communities in Nigeria where majority of the respondents

(75.6%) agreed that out-migration from rural areas decreases the labour availability for farm work. This was also supported during an in-depth interview when one farmer retorted that:

It is always difficult to get labour for farm work. All those youth groups are no more available as a result of migration. Even those from the north who come here for labour work are not coming because of the same reason. They have either gone to Accra or Kumasi for non-agricultural work with good pay (Farmer in Nyinase, 2017).

The finding and views of the farmer corroborate that of Angba (2003) who exemplifies in one study that the major subset of rural-urban migration is increasing labour shortage at the origin communities.

Table 6.9.7: Evaluation of labour availability

Evaluation of labour availability	Communities							
	Ahyiayem		Asonkwaa		Nyinase		Total	
	N	%	N	%	N	%	N	%
Increased	8	6.2	0	0.0	0	0.0	8	3.0
Decreased	103	79.2	71	78.9	47	94.0	221	81.9
No change	19	14.6	19	21.0	3	6.0	41	15.2
Total	130	100	90	100	50	100	270	100

Source: Field survey, 2017.

6.2.7 Summary

This chapter used the findings from the study to explain for the occurrence of the phenomenon in the study area. According to the perceptions of the respondents, the factors affecting food systems and income was enormous in the communities as a result of migration. The perceptions of these respondents on labour availability is decrease labour. The shortage

of labour presence in all the three communities emanated from rural-urban migration in the study area.

Even though labour for weeding, planting and harvesting was a major challenge, many of the respondents relied on family and communal labour as a substitute. However, this yielded negative results in terms of food production and proceeds from farming which in turn threaten the livelihood of the left-behind families in the study area. Furthermore, the findings show that migration in the study area can have some positive effect on food system and its related activities if significant percentage of remittances sent by migrants are channelled into agriculture and food systems to minimize or offset the loss labour. This therefore suggests that rural-urban migration can bring about positive and negative effects on food system and agriculture in general, depending on one's perception regarding it.

CHAPTER SEVEN

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

7.0 Introduction

This section encapsulate the summary, conclusion and the recommendations drawn from the study.

7.1 Summary of findings

In assessing the impact of rural-urban migration on food system and its effect on livelihood at the rural areas (Ahyiayem, Asonkwaa and Nyinase), three objectives guided the study in the Nkoranza South Municipality. The perceptions of the left-behind farmers in the area were explored. Firstly, the study identified the community perceptions about rural-urban migration in the municipality. Secondly, the study determined the effect of rural-urban migration on some aspect of food systems (Weeding, planting, harvesting and transporting from the farms) and finally it examined the effect of rural-urban migration on hired farm labour availability.

The findings indicated that the farming sector is male dominated with few of the respondents having some level of education ranging from primary to tertiary level. The results again show that majority of the respondents were married with varied number of children ranging from 1 to 5 or more.

From the study it was evident that the respondent's perceptions about rural-urban migration was negative. This means that out-migration in the communities resulted in high labour shortage which in turn affected food production and farming income. The study further found that the pull factors appeared to be the strongest among the factors responsible for migration in the study communities. It was also revealed from the findings that household migrants did not only migrate because of the 'push-pull' factors but also agreed with the neo-classical

theory where wage-differential between urban and rural played a significant role in their decision to leave the study area.

The study also found that due to out-migration, food system activities such as weeding, planting and harvesting were affected because of absence of labour. It rendered farmers with no other option than to resort to hired labour which came with a cost paving way for farmers to either reduce land cultivated or abandoned farming completely. The result of the study also shows that prices charged for transporting farm produce from the farms were exorbitant citing reasons as deplorable roads in the farming communities. The findings indicated that as a result of rural-urban migration, farming income also reduced as household family members migrate, which affected the livelihood of the people in the study area.

Furthermore, the findings showed that availability of farm labour in the study area has decreased in all the three farming communities. But the extent of decrease is severe in Nyinase than Ahyiayem and Asonkwaa. Major reasons characterizing decreased labour availability in the area are out-migration, poverty and change in rainfall pattern.

The study findings in its entirety found some positive effect of migration at the study area. The respondents perceived migration as a survival mechanism where a lot of the household members were able to acquire certain valuable things as a result of having migrants in their household.

7.2 Conclusion

Based on the findings of the study, it was concluded that the communities' perception about migration was generally negative as it brought about labour shortage rendering farming activities a burden to left-behind families. Out-migration affected specific components of the food system resulting in high usage of hired labour for planting, weeding and harvesting.

Again, migration effect on hired labour availability was negative as most farmers attributed decreased labour and reduced food production to out- migration.

In terms of road network in the municipality, more than half indicated deplorable roads as hindrance to transportation of foodstuffs. This confirmed the exorbitant fare charged by transport owners in the study area.

Perception on usage of remittances were varied as majority invested it in non-agriculture activities. The impact of labour readiness for crop production translate into increase farm produce but this was not the case in the study area as a result of migration of famers. Males and females response to solving labour shortage was different. While the males focused on hiring labour the females preferred reducing land cultivated and working communally as solution to labour shortage.

7.3 Recommendation

This section of the thesis, makes the following recommendations based on the perception from the farmers in order to reduce rural-urban migration incidences in Nkoranza South Municipality and Ghana at large. The migration of people from rural areas to urban centers is mainly as a result of poor rural development and the unattractive nature of food systems and its related activities in the rural areas. For these reasons, the government and its stakeholders in agriculture should transform traditional agriculture to modern type to look attractive and rewarding so that remittances sent by migrants will be invested in that sector.

Farming in the municipality should be mechanized so that major activities (wedding, planting, harvesting etc.) will not rely solely on hired labour and family labour. This when done will reduce the impact of migration on labour availability.

The rate at which farm produce goes waste after harvest is worrisome and therefore Government (through the local authority) and non-governmental organizations (NGOs)

should help establish modern storage facilities within the farming communities in order to avert some of the post-harvest losses which demotivate farmers and propel them for migration.

With regards to road networks, Government should liaise with Department of feeder roads to improve deplorable roads in the rural areas especially the farming communities in order for smooth transfer of farm produce to market centers.

Finally, with male's dominance in the farming sector and migrating in their numbers, feminization of the sector requires policy attention such as introduction of credit facilities to women in agriculture since chunk of the work load falls on the women who are inexperienced for the new roles and responsibilities.

7.4 Areas for further research

The following propositions are areas that require further research:

- Since the study focused on the Nkoranza South Municipality alone with few selected communities, there is the need for subsequent research to expand the geographical scope of the study and do comparative study of two municipalities or districts which are prone to migration to assess the level of effects of migration on food system sustainability.
- The outcome from the study showed some relationship between sex of farmers and their perceptions about ways of solving labour shortages emanating from migration. However, it would add to existing literature if a study is done to find out the extent to which other socio-demographic characteristics of farmers influence their perception. Correlation analysis can be done to show the extent to which these socio-demographic characteristics of farmers influence their perception of solving labour shortage as a result of rural-urban migration.

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APPENDICES

APPENDIX A

FIELD INSTRUMENTS

UNIVERSITY OF GHANA

CENTER FOR MIGRATION STUDIES

**RESEARCH TOPIC: PERCEIVED IMPACT OF RURAL-URBAN MIGRATION ON
FOOD SYSTEMS: A CASE STUDY OF FARMERS IN NKORANZA SOUTH
MUNICIPALITY GHANA**

I am an Mphil Candidate at the Centre for Migration Studies of University of Ghana, Legon-Accra. This field research is being conducted as part of my studies. I would be grateful if you could answer the questions below. Your participation in this study is very important but it is voluntary and you can withdraw at any point. Any information provided for this study would be treated with utmost confidentiality and for academic purposes only.

Thank you.

IDENTIFICATION

REGION _____

MUNICIPALITY _____

TOWN/VILLAGE/SETTLEMENT _____

PLACE OF INTERVIEW _____

HOUSEHOLD NUMBER (if applicable) _____

NAME OF INTERVIEWER _____ **SIGNATURE** _____

NAME OF INTERVIEWEE _____

DATE _____

START OF INTERVIEW _____

END OF INTERVIEW _____ DURATION OF INTERVIEW _____

SECTION A: SOCIO-DEMOGRAPHIC INFORMATION

1. Sex

1. Male ☐ 2. Female ☐

2. Age (COMPLETED YEARS/ AGE ON LAST BIRTHDAY) _____

3. Marital status:

1. Married ☐ 2. Consensual Union ☐ 3. Separated ☐

4. Divorced ☐ 5) Widowed ☐ 6) Never Married ☐

4. Religion:

1. No Religion ☐ 2. Catholic ☐ 3. Pentecostal/Charismatic ☐

4. Other Christians ☐ 5. Islam ☐ 6. Traditional 7. Other Please ☐
(Specify) _____

5. Education

1) No education ☐ 2) Primary ☐ 3) JHS/JSS level ☐ 4) Middle ☐

5) SHS/SSS ☐ 6) Vocational/Commercial ☐ 7) Tertiary ☐

8) Other Professionals (ACCA/CA/ICT) ☐

6. Main employment _____

7. Secondary employment _____

8. How many children do you have in this household who contribute to food system?

9. How many children are away or migrated and could have been involved in food production? _____

10. Were you born in Nkoranza South Municipality? 1) Yes ☐ 2) No ☐ (If Yes Skip to Section B)

11. If No to Q10, in which region were you born?

1) Western ☐ 2) Central ☐ 3) Greater Accra ☐ 4) Volta ☐ 5) Eastern ☐

6) Ashanti ☐ 7) Brong Ahafo ☐ 8) Northern ☐ 9) Upper East ☐ 10) Upper West ☐

11) Other Please (Specify) _____

SECTION B: COMMUNITY PERCEPTION ABOUT RURAL-URBAN MIGRATION

12. In your view, what is the impact of rural-urban migration in this area? (Multiple answers allowed)

1. Decrease in farming activities ☐

2. Labour shortage ☐

3. Increase in farming income ☐

4. Low food production ☐

5. Improve living standards ☐

6. Other (Specify).....

13. Do you have migrants in your household? (If No skip to Q22)

1. Yes ☐

2. No ☐

14. In your opinion, what factors attract people of this area to the urban areas? (Multiple answers allowed)

1. Employment Opportunities ☐
2. Better Economic Conditions ☐
3. Urban Infrastructure and Way of Life ☐
4. Others (Specify) -----

15. How many migrants do you have in this household?

1. 1 ☐

2. 2 ☐

3. 3 ☐

4. 4 ☐

5. Others (Specify).....

16. Which type of migrant do you have in your household?

1. Internal Migrant ☐ 2. International Migrant ☐

17. Do migrants maintain contact with members of the household?

1. Yes ☐ 2.No ☐

18. If yes to **Q17**, how often do the migrants remit to the household?

1. Always ☐ 2.Not at all ☐ 3.Sometimes ☐

19. What are the key things you spend the remittances on? (Multiple answers allowed)

1. Labour ☐
2. Farming tools ☐
3. Pesticides ☐
4. Fertilizers ☐
5. Consumables Items Such As Food ☐
6. Children School Fees ☐

7. Payment of Health or Medical Bills ☐

8. Clothing ☐

9. Other (Specify).....

20. Does the household provide any assistance to the migrant?

1. Yes ☐ 2.No ☐

21. If yes to **Q20**, what kind of assistance does the household provide?

1. Foodstuffs from the Farm ☐

2. Prepared Food Items ☐

3. Money for Transportation (**Return Journey**) ☐

4. Child Care ☐

5. Other (Specify).....

22. Were the people employed before migration?

1. Yes ☐ 2.No ☐

23. If yes to **Q22** what type of employment/occupation were they engaged in?

1. Farming ☐

2. Casual work ☐

3. Government ☐

4. Paid family work ☐

5. Unpaid family work ☐

6. Other (Specify).....

24. From your family's point of view, what will be the benefit to the family from
People from the family migrating from here to urban areas? (Multiple answers allowed)

1. To increase family sources of income/ wages ☐

2. To increase their personal income ☐

3. To overcome limitations on economic and investments in the rural areas ☐

4. Other (Specify)

25. Have you ever migrated from this community to work in the urban areas over the last five (5) years? (If the answer is no, skip to **Q27**).

1. Yes ☐ 2.No ☐

26. If yes to **Q 25**, why did you migrate?

1. Better income differential ☐

2. To have urban life experience ☐

3. Educational opportunities ☐

4. Unemployment in the rural areas ☐

5. Other (Specify)..... ☐

SECTION C: EFFECT OF MIGRATION ON FOOD SYSTEMS

27. In your view has migration of people from your village into the cities had any impact on agricultural activities?

1. Yes ☐ 2.No ☐

28. If yes to **Q27** in which way(s) (Multiple answers allowed).

1. Decrease in time spent on farming ☐
2. Reduced income obtained from farming ☐
3. Lower food production ☐
4. Shortage of labour ☐
5. Other (Specify).....

29. In your view, has migration had any impact on your farming income?

1. Yes ☐ 2.No ☐

30. If yes to **Q29**, what impact does it have?

1. Improved farm income as a result of high productivity ☐
2. Decrease in farm income as a result of low productivity ☐
3. Farm income remains unaffected ☐
4. Others (specify).....

31. How do farmers in this area clear their land?

1. Simple tools ☐
2. Machines (tractors) ☐

3. Other (Specify).....

32. Does the size of your farm require hired labour?

1. Yes ☐ 2.No ☐

33. If yes to **Q32**, how much do you spend in clearing your farm?.....

34. Do you get required labour during planting season?

1. Yes ☐ 2.No ☐

35. If yes to **Q33**, what type of labour do you use for planting?

1. Family labour ☐ 2.Hired labour ☐ 3.Communal labour ☐ 4.Other (Specify).....

36. What type of crops do you require more labour when planting

1. Cereals ☐ 2.Tubers ☐ 3.Vegetables ☐

5. Other (Specify).....

37. Does labour required for harvesting depend on the farm size?

1. Yes ☐ 2.No ☐

38. If yes to **Q37**, how do you get labour for harvest?

1. Family labour ☐ 2.Hired labour ☐ 3.Other (Specify).....

39. What method do you use to harvest crops?

1. Bare hands ☐ 2.Gloves hands ☐ 3.Machines ☐

40. How do you store harvested foodstuff before transportation?

1. Modern storage facility ☐

2. Traditional storage facility ☐

3. Other (Specify).....

41. How long does harvested foodstuff last before transportation?

1. 1-3 months ☐

2. 4-6 months ☐

3. 7-8 months ☐

4. 8-12 months ☐

5. Other (Specify).....

42. What is the main mode of transportation used to bring harvested food from the farm?

1. On foot ☐

2. Truck ☐

3. Minibus ☐

4. Other (Specify).....

43. What is the state of the road network in your area for transporting food stuffs?

1. Very good ☐

2. Very bad ☐

3. Good ☐

4. Bad ☐

5. Other (Specify).....

44. How much do you pay for transporting foodstuffs from the farm?

45. How are foodstuffs in this community packaged for local market?

1. Wooden box ☐

2. Sacks ☐

3. Plastic/ metal containers ☐

4. Other (Specify).....

46. Is food available all year round in the local market for purchase?

1. Yes ☐

2. No ☐

SECTION D: EFFECTS OF MIGRATION ON HIRED FARM LABOUR AVAILABILITY

47. What are the sources of your farm labour? (Multiple answers allowed).

- 1. Family labour only ☐
- 2. Hired labour only ☐
- 3. Both family and hired labour ☐
- 4. Communal labour ☐

48. Have you ever faced labour shortage for your farming activity as a result of out-migration from this area?

- 1. Yes ☐
- 2. No ☐

49. If your answer to **Q48** is yes, how did you solve the problem?

- 1. Hiring of Labour ☐
- 2. Working Communally ☐
- 3. With the help of Children ☐
- 4. With the help of Extended Family ☐
- 5. Reducing Land Cultivated ☐
- 6. Other (Specify).....

50. For which of the farming activities do you hire labour? (Multiple answers allowed)

- 1. Ploughing ☐
- 2. Weeding ☐
- 3. Harvesting ☐
- 4. Staking ☐
- 5. Transporting ☐

6. Planting ☐

7. Other (Specify).....

51. In your opinion what account for labour shortage?

1. In-migration ☐

2. Out-migration ☐

3. Education ☐

4. Changes in rainfall patterns ☐

5. Poverty ☐

6. Other opportunities ☐

52. Do you get hired labour at the precise time of the season?

1. Yes ☐

2. No ☐

53. If the answer to **Q52** is Yes, what do you think is the impact on crop production?

1. Increase farm produce ☐

2. Has no impact ☐

3. I don't know ☐

4. Other (specify)

54. How would you evaluate the availability of labour in your area for the past five (5) years?

1. Increased ☐

2. Decreased ☐

3. No change ☐

APPENDIX B

The interview guide is meant to create a free flowing conversation that will last between 30 minutes to 45 minutes. I seek to explore the perceived causes of rural –urban migration, impact of migration on farm labour availability and perception of out-migration on food systems and its sustainability. Therefore I would try as much to probe respondents for an in-depth understanding

I am an Mphil Candidate at the Centre for Migration Studies of University of Ghana, Legon-Accra. This field research is being conducted as part of my studies. I would be grateful if you could answer the questions below. Your participation in this study is very important but it is voluntary and you can withdraw at any point. Any information provided for this study would be treated with utmost confidentiality and for academic purposes only.

Interview Guide for Official of Ministry of Agriculture (MoFA)

BACKGROUND INFORMATION

1. Can you please tell me about yourself (Probe for age, level of education, marital status, current position in the ministry, number years' work for etc)

SECTION 1: PERCEPTION OF CAUSES OF RURAL-URBAN MIGRATION

2. In your opinion what are the causes of out-migration in the Municipality

(Probe for reasons that account for the migration, impact of this migration both positive and negative)

SECTION2: EFFECTS OF MIGRATION ON FOOD SYSTEMS

3. Is agricultural activities being affected by youth migration to the urban centers (Probe for effect on various components of food systems, type of support to farmers and who qualify for such support, challenges farmers faces and solution to this challenges etc.)
4. Your views on climatic conditions and it impact on food production in the municipality (Probe for rainfall patterns currently and the last five years, current food stock as compare with previous years and the overall effect on the municipality etc)

SECTION 3: EFFECT OF MIGRATION ON HIRED FARM LABOUR AVAILABILITY

5. Are you aware of labour shortage for food production in the municipality? (Probe for type of labour use and its effect on the various components of food systems etc.)
6. What account for the labour shortage, Usage of remittances, type of labour available etc.)

APPENDIX C

I am an Mphil Candidate at the Centre for Migration Studies of University of Ghana, Legon-Accra. This field research is being conducted as part of my studies. I would be grateful if you could answer the questions below. Your participation in this study is very important but it is voluntary and you can withdraw at any point. Any information provided for this study would be treated with utmost confidentiality and for academic purposes only.

Interview Guide for for key informant (Opinion leaders and Market women)

BACKGROUND INFORMATION

1. Can you please tell me about yourself (Probe for age, level of education, marital status, number of children, occupation etc)

SECTION 1: PERCEPTION OF CAUSES OF RURAL-URBAN MIGRATION

2. In your opinion what are the causes of out-migration in the Municipality (Probe for reasons that account for the migration, impact of this migration both positive and negative)

SECTION2: EFFECTS OF MIGRATION ON FOOD SYSTEMS

3. Explain some of effects migration has brought to agriculture production (Probe for receipt of remittances and it usage, ideas and innovation for farm activities etc.)

4. Is migration having any impact on the various components of food systems? (Probe for positive and negative impacts etc)

5. Do you get support for crops failure? (Probe for type of support, where the support is coming from either government or NGOs, the type of storage facilities used etc)

SECTION 3: EFFECT OF MIGRATION ON HIRED FARM LABOUR

AVAILABILITY

6. Is people (youth) leaving this municipality having any effect on availability of labour?
(Probe for type of labour use, amount charge for hiring labour, it effect on various components of food systems etc.)
7. What are the mode of clearing farmlands (Probe for type of equipment use, crops that require more labour etc)
8. What are some of the main challenges as a result of labour shortage? (Probe for alternative sources and its effect on food production etc)
9. What is the general state of roads in the municipality? (Probe for nature of roads, availability of roads linking farming communities etc)