

UNIVERSITY FOR DEVELOPMENT STUDIES

**ASSESSING THE EFFECTS OF VILLAGE SAVINGS & LOANS
ASSOCIATIONS (VSLA) ON MATERNAL AND CHILD NUTRITION IN
GUSHEGU DISTRICT OF NORTHERN REGION, GHANA**

GIFTY AKAPULE

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(VSLA) ON MATERNAL AND CHILD NUTRITION IN GUSHEGU DISTRICT OF
NORTHERN REGION, GHANA

BY

GIFTY AKAPULE (BSc. COMMUNITY NUTRITION)

(UDS/MPHN/008/16)

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DECLARATION

STUDENT'S DECLARATION

I hereby declare that this thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

NAME OF STUDENT: AKAPULE GIFTY

SIGNATURE.....

DATE.....

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines for the supervision of the thesis as laid down by the University for Development Studies.

NAME OF SUPERVISOR: DR. GLOVER EVAM KOFI

SIGNATURE.....

DATE.....



ABSTRACT

Malnutrition is associated with poverty. Developmental interventions targeted at reducing poverty have positive impact on household income and nutrition especially for children under-five. One such intervention funded by the United State Agency for International Development (USAID) is Village Savings and Loans Association (VSLA) project implemented by Resilience in Northern Ghana (RING) implemented across 17 MMDAs in Northern Region of Ghana between 2014 and 2019. To date, no population-based evaluation on the effect of VSLA on the other interventions has been conducted to elicit the relationship. This study was purported to determine the effectiveness of VSLAs on the general well- being of mothers and their children. A Cross-sectional comparative study design was used for this study. This involved 150 mothers and their under-five year old children, selected from VSLA and Non-VSLA households in the Gushegu District of the Northern Region of Ghana. Respondents were interviewed using a questionnaire developed for the purpose. The findings of this study indicated that the RING VSLA program helped in increasing household income for VSLA members. All project beneficiaries interviewed indicated their income was better compared with the previous year against 18.2% of the Non-VSLA respondents. The study also indicated that on household dietary diversity, VSLA household scored 7 out of the 12 food items, while non VSLA households scored 5 out of the 12 food items. Significant number of children in the Non-VSLA group were severely and moderately malnourished (12.9% and 25.8%, respectively), while 1.6% and 22.2% of children in the VSLA household were severely and moderately malnourished. Furthermore, Wasting and underweight in children reduced among VSLA households compared with non-VSLA households. Conclusively, it



is observed that VSLA contributed to improving household income and dietary diversity, which in effect had positive impact on household nutrition. The VSLA programme should be scaled-up to cover all communities in the Gushegu district, especially to less income households or communities. Nutrition education and promotion should be intensified or strategized during mother-to-mother support groups.



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May the Almighty God bless us all!!!



DEDICATION

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LIST OF ACRONYMS AND ABBREVIATIONS

BMI – Body Mass Index

DFID – UK Department for International Development

FANTA – Food and Nutrition Technical Assistance

FAO – Food and Agriculture Organization of the United Nations

GDHS – Ghana Demographic and Health Survey

HDD – Household Dietary Diversity

ID - Identification

MAM – Moderate Acute Malnutrition

NGO – Non-Governmental Organizations

NHIA – National Health Insurance Authority

RING – Resiliency in Northern Ghana

SAM – Severe Acute Malnutrition

SDG – Sustainable Development Goals

UDS – University for Development Studies

UNICEF – United Nations Children’s Fund

USAID – United States Agency for International Development

USD – United State Dollars

VSLA – Village Savings and Loans Association

WASH - Water Access, Sanitation and Hygiene

WHO – World Health Organization



CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The Sustainable Development Goals 1 and 2 (UNDP, 2015) respectively, are dedicated to ending Poverty and extreme Hunger. To attain food security, enhanced nutrition and promoting good agricultural practices are core elements closely related to this drive. According to FAO (1991), about 799 million people are food insecure in the developing world. In addition, as of 2008, close to 1.4 billion people were anticipated to be stricken by poverty worldwide (Ravallion and Chen, 2008). As the world has not discovered a cheaper way of producing food and making it available in the world over, situation of food security will continue to be a challenge for most people. According to FAO (2004), poverty has remained the major determinant of hunger worldwide.

Several efforts and initiatives have been designed to empower and equip the rural poor to weather the effects hunger and food insecurity. Bremen in 2010 said that the VSLA program is a modern tool for poverty alleviation among the developing economies. This VSLA intervention has bridged the financial inclusion gap, thereby bringing formal banking and microfinance institutions closer to the marginalized in rural communities.

In line with its objective to contribute towards the elimination of poverty and hunger in Ghana, USAID funded the Village Savings and Loans Association (VSLA) project an intervention aimed at reducing household poverty. It was implemented by NGOs, including Resilience in Northern Ghana (RING). This project is implemented across 17 Districts in Northern Region of Ghana between 2014 and 2019.





In 2007 relevant data revealed that over one hundred million of the world's poorest families have benefited from micro loans and other financial services (Daley-Harris, 2009). Microfinance institutions, including VSLAs provide financial services including savings and loans. The aim of the concept of VSLA intervention is to empower rural families to ensure food security and earn good income. Bremen, (2010) reports several incredible livelihoods impacts on beneficiaries of VSLA programs precisely in the area of poverty eradication.

Notwithstanding these positive economic indices on poverty alleviation and developments, food insecurity and nutrition problems still exist in Ghana. Unfortunately, the highest burden of food insecurity and hunger are found in northern Ghana (Northern Region, Upper East and Upper West,) (WFP, 2015). Additionally, 1.2 million Ghanaians are said to be food insecure and suffering from chronic malnutrition. Even though there is a decline in this trend in the past five years, due to the number of interventions being implemented by both government and development partners, the consequence of malnutrition is still affecting about a quarter of Ghanaian children under five (WFP, 2015). According to Global Communities RING end of year report, 2018, there has been a decrease in the rates of underweight among children under five in Ghana by 12 percent from 1998 to 2011. Other indices from the report indicates that stunting is a critical public health risk in the USAID Feed the Future Zone of Influence. Available data form Ghana health service indicates that 37% of all children in Northern Ghana are stunted or likely to be stunted due to bad eating habits. Consequently, food insecurity, poverty,

suboptimal feeding practices, poor dietary diversity, and poor access to healthcare services are among the main causes of under nutrition in children.

1.2 Problem Statement and Justification

Child undernutrition remains a major issue of public health concern in rural Ghana. In Ghana, acute food security and nutrition problems persist in the highest in the three regions of the north (UNICEF, 2013). Food insecurity, appropriate feeding practices, lack of dietary diversity, and inadequate access to health facilities are part of the main causes of child undernutrition. Women have bigger challenges in gaining access to nutrition and health care facilities for caregivers in the rural communities of Northern Ghana. As a result, stunting, anemia and wasting are prevalent in the area due to micronutrient deficiencies, including vitamin A and iron. According to NSS, (2013), 136,902 (37.4 per cent) children under five in the Northern Region of Ghana were stunted. Similarly, 83,584 children under five were underweight and 29,650 (8.1 per cent) were wasted. This worrying statistic certainly poses a serious public health problem with young children and women being the most affected. The situation is worsened with the lack of available of financial services (loans and savings) to explore to their advantage. This further deepens the plight of mothers and other caregivers in remote areas in their search to better the health conditions and support services about nutrition and recommended child feeding practices (UNICEF, 2013).

In the quest to lessen the effects of this double burden challenge in Northern Ghana which is poverty and hunger, USAID in partnership with Global Communities is implementing RING project as a poverty alleviation intervention, implemented to take





care of the nutritional and livelihood status of vulnerable households in an integrated approach. The RING project applies a multidisciplinary approach to initiating and sustaining the concept resilient households through series of complementary interventions, including: Agriculture and Livelihood empowerment (VSLA), Nutrition and Health, WASH, and Governance related activities. The goal for implementing these interventions is to contribute to improving the wellbeing of rural women, by reducing their time burden, empowering them to take responsibility over household income, increasing their social relevance, and eventually creating families that are more robust.

One of the activities designed to address the issues of access to credit and its effects on improving livelihoods and nutritional challenges of rural women and their children is the Village Savings and Loans Associations (VSLA). The VSLA activity has evolved into one of the flagship interventions of the RING project with the aim of helping women to expand their livelihoods and access credit at critical periods throughout the year. The initial indications through the implementation of the VSLA activity is that it makes sustainable impact on vulnerable households. This is done by increasing household food security, allowing women the opportunity to diversify credit into income generating activities, and supporting family needs, such as supplementary food, healthcare, and education. During the 2016 program year, VSLA program activities were extended to the Gushegu District.

Anecdotal evidence of the implementation of the VSLA activity suggests that it makes a sustained influence on vulnerable households by increasing their food security, allowing women the opportunity to invest into income generating activities and supporting family needs, such as supplementary food, healthcare, and education. However, from the start of



the project implementation to date, there has been no rigorous empirical research to establish whether increased income from the VSLA directly translates into improved nutrition of women and children under five. This study is therefore designed to study the association between the access of women to credit as a member of the village savings & loan associations (VSLA) and maternal and child nutrition. In a comparative study fashion, the study compared VSLA groups to Non-VSLA groups in the Gushegu District in the Northern Region of Ghana.

1.3 Research Questions

- i. How does VSLA contribute to household feeding and dietary diversity of rural mother and child?
- ii. What resources do VSLAs provide in support of maternal and child health?
- iii. To what extent does VSLAs contribute to the improvement of the general well-being of mothers and children?

1.4 Objectives of the Study

1.4.1 General objective

To investigate the effects of VSLAs on maternal and child nutrition

1.4.2 Specific objectives

- i. To assess the contributions of VSLA on household income
- ii. To establish the contributions of VSLAs on dietary diversity of households
- iii. To determine the association between VSLA program on maternal and child nutrition.



1.5 Significance of the Study

The study examined the association between VSLA on maternal and child nutritional status in Gushegu District of Ghana. The findings of this study will be a valued source for decision makers, as well as primary and public health practitioners in Ghana health service, who are responsible for improving the nutritional and health status of children and women. The findings may also help development workers and other stakeholders to improve maternal and child health in Ghana. It may also generate information that could inform Government and its development partners on ways of integrating VSLA into other interventions.

As a comparative study, the findings of this study will serve as resource for Development workers and the Ghana Health Service in the Gushegu District and the nation at large and for researchers investigating the effects of VSLAs on other development interventions. It also contributes to the existing literature.

1.7 Limitation of the study

The study used dietary diversity score where participants were asked to tell from the table what they ate 24 hours before the study. The researcher is cognizant of the fact that Nutrition is generally affected by the period of the season in the year. For this reason, the seasonal nutrition shifts may affect the findings of the study on the population's dietary diversity. Another limitation is the fact that the study did not consider maternal and under 5 dietary diversities separately. Maternal dietary diversity was used for the household

dietary diversity which includes children under 5 years. The researcher admits the fact that household dietary diversity may not influence dietary diversity of children under 5.

The researcher used more than one study design and could not account for how the different designs were employed in this study. It is also acknowledged that this could affect data collection and analysis. The sample size was not properly calculated to represent the study.

Income status was assessed by asking respondents whether their income was better, same or worse in the previous year with respect to the day of this study. The researcher of this study admits that this question may be weaker for assessing the income of the respondents. The approach was necessary as a way of getting around the challenge of getting loan booklets which by policy were against the operations of the program. These challenges, however, are not deemed to invalidate the quality of work presented.

1.8 Organization of the Study

This research work has six chapters. The background information to the research and identification of the key problem underpinning the investigation in the study is contained in chapter one. The significant research questions followed afterwards and then the objectives of the study. Chapter one also provides the scope of the research, and a justification for the study followed by limitations of the study and lastly how it is organized.

Chapter two presents a review of relevant literature on maternal and under 5 malnutrition, dietary diversity, women empowerment, the VSLA program and the links between VSLA on nutrition.



Chapter three presents the methodology used to conduct the study. This chapter covered the population for the study, sample size determination and sampling techniques, source of data, data collection instruments and data analysis procedure. This chapter gives a guide to the conduct of the field survey.

Chapter four focuses on analysis of data and presentation of results. It looks at how data collected was analyzed indicating: socio-demographic data, income status of beneficiaries and non-beneficiaries of the VSLA program, Dietary Diversity status, maternal and under 5 nutrition and the links between them. This chapter provides the information to answer the research questions and forms the basis for the recommendations made for the role of the VSLA program in income levels, and nutrition.

The fifth chapter provides a discussion of the results in chapter four against the findings in the literature. Chapter six provided conclusion and recommendations on the effects of VSLA on maternal and child nutrition.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the review of relevant literature on the concepts, definitions and theories of malnutrition, the VSLA program, dietary diversity and interactions between them.

2.1 Global Nutrition Context

Malnutrition is a cause and a consequence of poverty globally. It adversely influences every part of the health of individual's health and growth and additionally limits the development of social and economics of the society (Black *et al.*, 2008). Reducing malnutrition is by concentrating on decreasing the prevalence of maternal and child malnutrition, specifically chronic and acute malnutrition in children under-five and malnutrition in women of reproductive age.

Black *et al.*, 2008 defined malnutrition as both under-nutrition and over-nutrition along with micronutrient deficiencies that adversely influence individuals and populations. Under-nutrition prevents the immune system of the body from combating disease and impedes the development of cognition, social-emotional and motor skills (Katz *et al.*, 2013). Under-nutrition, including fetal growth restriction, suboptimal breastfeeding, stunting, wasting, vitamin A and zinc deficiencies contributed to 3.1 million deaths which





represents 45 percent deaths of children globally in 2011 (Black *et al.*, 2013). Stunting, which determines chronic under-nutrition, dropped by 35 percent, while wasting, which determines acute under-nutrition, dropped by 11 percent between 1990 and 2011 (UNICEF, WHO & World Bank, 2012). Per population growth, the entire number of children affected has not changed. In 2011 alone, over 165 million and 52 million children under-five were affected by stunting and wasting respectively (UNICEF, WHO, & World Bank, 2012).

In emergency and non-emergency situations, Severe Acute Malnutrition (SAM) intimidates the existence of children. SAM affects about 19 and 26 million children under-five globally and cause almost 1 million child mortality yearly (UNICEF, 2013). According to Bhutta *et al.*, 2013, 90 percent of children who are stunted are found in 34 countries and are mainly in Sub-Saharan Africa and South Asia. Moreover, deficiencies in vitamin A, zinc, iodine, and iron, which are the main forms of micronutrient deficiencies, still exist. These deficiencies together with stunting reduce chances for the development of healthy physicals and cognition (Black *et al.*, 2013). The direct effects are occurrence of diseases and deaths of mothers and infants while the permanent consequences of anaemia in early childhood results in compromised childhood development and school performance (Brabin *et al.*, 2001; Grantham-McGregor *et al.*, 2001). Iron deficiency causes 50 percent of all anaemia cases (Stoltzfus *et al.*, 2001). In 2011, iron deficiency anemia affected an estimation of 19.2 percent and 18.1 percent of pregnant women and children under-five respectively (Black *et al.*, 2013).

Malnutrition's double burden affects many countries, which is a tireless prevalence of stunting among children under-five and cumulative proportions of overweight and



obesity in mothers and adolescent, mostly with deficiencies in micronutrients (Black *et al.*, 2013; Garmendia *et al.*, 2013). In 2011, 43 million children who are under-five were estimated to be overweight, representing a 54 percent surge from an estimated 28 million in 1990 and almost 75 percent of these children were in lower middle-income countries (UNICEF, WHO, & World Bank, 2012).

A different analysis estimated that 10 percent or more of the prevalence of acute malnutrition were found in 32 out of 134 countries with available data, a burden normally recognized as a “public health emergency requiring immediate intervention” (UNICEF, 2012). Globally, it is estimated that moderate acute malnutrition (MAM), $WHZ \geq -3$ and < -2 , and severe acute malnutrition (SAM), $WHZ < -3$ and/or presence of oedema, affected nearly 33 million and 19 million children respectively (UNICEF, 2012).

In emergencies, the acute malnutrition prevalence may surge significantly with high levels of SAM and child deaths. For example, Global Acute Malnutrition (GAM) surged around 40% in Southern Somalia at the time of the famine in 2011, with about 258,000 deaths, and more than half of these deaths were children (Checchi and Robinson, 2013).

Compared to normal children, MAM and SAM children are three and nine times at greater risk of dying respectively (Black *et al.*, 2008). These high risks of mortality are always increased during humanitarian emergencies where the situation is deteriorated by an increased susceptibility to infectious diseases, shortages of food, and a reduced access to critical services as a result of conflict and insecurity. Besides this, susceptible children suffering from wasting often suffer from stunting (Richard *et al.*, 2012) and there is even higher risk of deaths among these children (Khara *et al.*, 2014).



Many countries now suffer from malnutrition's double burden, which is continues existence of the prevalence of stunting among children under-five and increasing the proportions of overweight and obesity of mothers and adolescents, often with micronutrient deficiencies (Black *et al.*, 2013; Garmendia *et al.*, 2013). Unfortunately, there is less affordability and accessibility by many families worldwide to enough nutritious foods, like fresh fruit and vegetables, legumes, meat and milk. On the other side, foods and drinks high in fat, sugar and salt are cheaper and more readily available, leading to a rapid surge in the number of children and adults who are overweight and obese in poor as well as rich communities. Therefore, it is quite usual to find undernutrition and overnutrition within the same community, household or even individual. According to UNICEF, WHO and World Bank 2012 report, there is an estimated 43 million children under-five who were overweight, a 54 percent increase from the estimated 28 million in 1990, nearly 75 percent of these children lived in lower middle-income countries. Now that Ghana is a lower middle-income country, it is not surprising that the incidence of overweight is becoming more prevalent in our communities.

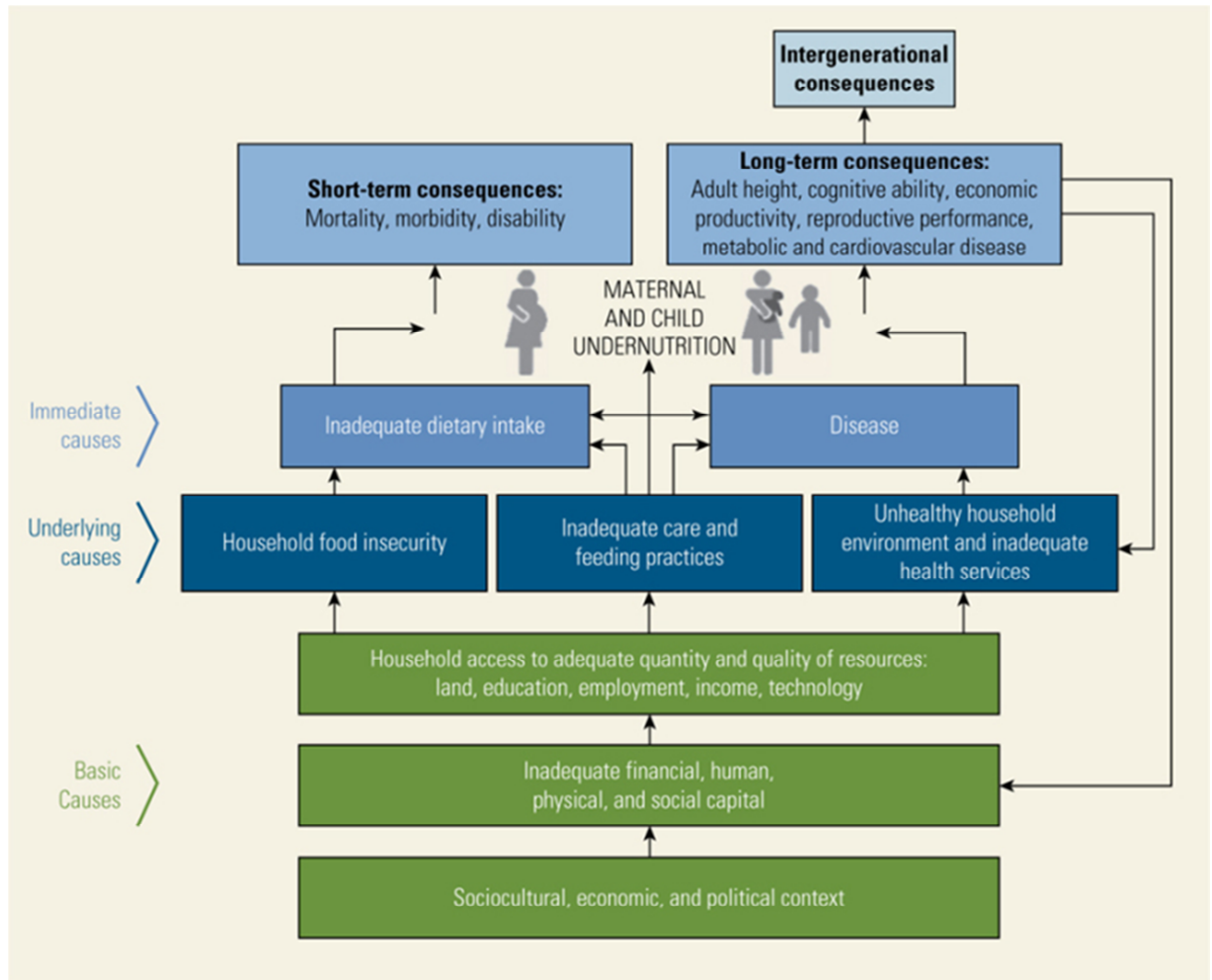
2.2 Causes and Effects of Malnutrition

The prevalence of malnutrition reflects an inability of multiple sectors to deliver food security, disease prevention and treatment services (Pearson *et al.*, 2011). The determinants of malnutrition are complex as a result of factors including the health status of individuals, access to household food, social, economic, political and environmental factors at the national and global levels. The immediate causes of under-nutrition in children are insufficient intake of energy and nutrients, and infectious diseases combined

with diarrhea particularly (Black *et al.*, 2008; Black *et al.*, 2013). An access of household to safe, healthy, and diverse foods, health services, safe and potable water, and sanitation bring about optimal nutrition (UNICEF, 1998). Critical to these factors is a complex array of determinants including empowerment of women, education, caregiving practices, sociocultural factors, the economy, political situation, and the environment as shown in Figure 2.1.

The harm under-nutrition causes, particularly during pregnancy and the first two years of life, is mostly permanent (Black *et al.*, 2008). There is a higher risk of maternal and infant or child mortality as well as greater health risks among malnourished women before or during pregnancy (Guerra *et al.*, 2013; Black *et al.*, 2008). Malnutrition compromise the development of cognition, socio-emotional, and motor skills, which results in poorer levels of educational achievement, reduced productivity later in life, lesser lifetime incomes, and slackened national economic growth (Bhutta *et al.*, 2013; Black *et al.*, 2008; Victora *et al.*, 2008; Daniels & Adair, 2004). It prevents the developing world from acheiving essential human capital and capacity and disturbs investments made for developing health, education, and economic growth. These estimates demonstrate that malnutrition reduces 8 perent of national economic development (Horton *et al.*, 2013).





The black arrows show that the consequences of undernutrition can feed back to the underlying and basic causes of undernutrition, perpetuating the cycle of undernutrition, poverty and inequities

Figure 2.1: UNICEF's Conceptual Framework of the determinants of malnutrition

Source: adopted from UNICEF, 2013



2.3 Risk factors of malnutrition

In the absence of humanitarian emergencies, the risk factors for undernutrition are complicated, with various immediate and underlying contributors associated with food insecurity. It includes suboptimal breastfeeding and complementary foods, protein and nutrient losses through multiple respiratory and gastrointestinal infections, chronic immune stimulation as a result of persistent parasitic intestinal infections and, inadequate sanitation and potable water (Ahmed *et al.*, 2014; Humphrey, 2009; Checkley *et al.*, 2004).

Both intra-generational and intergenerational causes play a critical role in child growth and development. Mothers and caregivers immensely affect the survival and healthy development of their children through biological and psychosocial pathways (Grantham-McGregor *et al.*, 1999; Wachs TD, 1999). For example, through biological pathways, maternal nutritional status, from time of conception through the period of pregnancy to lactation, plays a critical role on child survival and growth (Widen *et al.*, 2013; Gewa *et al.*, 2012; Zhang *et al.*, 2009; Levy *et al.*, 2005; Wu *et al.*, 2004). Mothers who have low BMI or stature are more expected to give birth to babies who are small for gestational age (SGA). SGA is related to a high risk of mortality that spreads through the neonatal period into the post-neonatal period (Katz *et al.*, 2013) with increased risk of failure in growth and non-communicable diseases in adulthood (Lawn *et al.*, 2014).

Through psychosocial pathways typically, mothers are the front-line caregivers of children, playing a critical role in feeding, avoiding sickness and pursuing health care of children. The development of healthy child is greatly influenced by the multifaceted interactions between the mother/caregiver and the child that again are influenced by the



psychological status of the mother and mental health and the environment in which she is (WHO, 2004). A current systematic appraisal of 22 studies from developing countries available between 1990 and 2011 highlights a strong association between maternal independence and nutritional status of the child (Carlson *et al.*, 2014). Women who have low independence often share similarities that are related to poor nutrition status in children, e.g. lower maternal age, lower socio-economic status (SES), lower levels of education, and poor nutritional status (especially low BMI, low stature and micronutrient deficiencies) (Sethuraman *et al.*, 2006, Chakraborty and Anderson, 2011, Simon *et al.*, 2002, Ahmed *et al.*, 2014).

Maternal undernutrition is a major problem in many countries, especially for those in emergencies (ENN, 2013). Good maternal nutrition status is also important for the ability of the mother to live a healthy life. Mothers with low BMI and short height are at higher risk of obstetric complications contributing to an increased risk of maternal morbidity and mortality, and there is greater risks of adverse pregnancy outcomes (Kramer, 2003).

The 2013 Lancet series on Maternal and Child Nutrition accounts that the nutrition setting has moved basically since the first Lancet Series was published in January, 2008 (Gillespie *et al.*, 2013), manifesting in part the appearance of movements such as Scaling Up Nutrition (SUN). On the other hand, despite advancements in the nutrition setting, gaps persist in the evidence that is open to let know effective policy and practice, especially with respect to acute malnutrition. According to UNICEF-WHO-World Bank Joint Child Malnutrition Estimates 2013, since 1990, estimated prevalence of acute malnutrition have shown a decline at a slower rate compared to those seen for stunting (height-for-age z score < -2), with an 11% and 35% decrease respectively.

2.4 The Evidence for Interventions and Approaches

To deal the issue of malnutrition and its attended effects effective interventions must be planned to spread across various sectors to address the multi-sectoral state of malnutrition. According to Lartey *et al.*, (2008), many nutrition interventions have been one-way programs and executed through isolated distribution systems in the past. The effects of such interventions did not see the light of day. He acknowledged that multi-factorial causation is best resolved by multi-sectoral interventions.

In addition, nutrition-specific interventions executed within time, at dire points in the lifespan, can have a drastic effect on decreasing global malnutrition if taken to scale in countries of high burden. Bhutta *et al.*, (2013) said that when the coverage of these interventions are increased by 90 percent, ten evidence-based nutrition-specific interventions might possibly decrease stunting by 20 percent and severe wasting by 60 percent. Some of these key interventions include the use of basic services delivery, low-cost technologies, optimal infant and young child feeding practices. In addition, promoting exclusive breastfeeding for the first six months and continuous breastfeeding through to at least 24 months, micronutrient supplementation, prevention and treatment of infectious diseases, including acute malnutrition management can considerably stop malnutrition (Bhutta *et al.*, 2013). The key intervention when correctly implemented will contribute to reducing both large and small malnutrition and its attended effects on the mother and their child.

According to Bhutta *et al.*, 2013, nutrition-specific interventions alone cannot help reduce malnutrition greatly. The advocacy was that interventions aimed at reducing malnutrition must be interspersed with nutrition sensitive interventions. Fortunately, some nutrition-





sensitive interventions have huge potential to boost the efficiency of nutrition investments globally. New evidence indicates the chances for nutrition impact with a number of nutrition-sensitive interventions, including:

- Family planning and healthy pregnancy timing and spacing
- Water, Sanitation and Hygiene (WASH)
- Nutrition-sensitive agriculture practices
- Food safety, food processing, and dietary diversity in corporation with industry
- Early childhood care, education and development
- Economic and livelihoods supports and recovery including microfinance programs.

2.5 Microfinance

Microfinance entails the provision of microloans and savings facilities to underprivileged businesspersons and small businesses in need of access to banking and related services. Microfinance runs on two main mechanisms for delivering financial services to such clients were:

- Relationship-based funding for individual businesspersons and small businesses; and
- Group-based models, where a number of businesspersons come together as a group to apply for loans and other services.

It is often argued that the access to microfinance provides the opportunity to smooth the income and consumption, to buy fertilizer at the beginning of the season, to invest in tools or machines or to purchase a stock of goods to sell, actions that can increase future



income. Having access to a bank account and insurance services also facilitates saving and provides security for challenging events (Year of Microcredit, 2005).

According to the paper, Year of Microcredit, (2005), the United Nations organized an event to highlight microfinance as an act of making financial services more available to the poor and low-income people. In addition, the study indicated that more attention was drawn to microfinance in 2006, when the Nobel Peace Prize was given to the Grameen Bank and its founder Muhammad Yunus. Since then the influence of Microfinance in creating economic and social development by giving micro loans to the poorest of the poor at low interest rates, became very relevant and eminent. According to Nobel Media AB, (2006), the bank has been a great inspiration for other microcredit institutions and even today, microfinance keeps spreading across the world as a mean to help people transform their lives.

Furthermore, according to report from Microcredit Summit Campaign, (2014) by 2012, microfinance had reached 204 million people globally. Notwithstanding this achievement, microfinance still have a long way to go to reach all of its potential market and to reach all of the world's poor population. According to the World Bank's Global Findex research (2014), a good proportion of the world's adult population have no access to formal financial services, such opportunity to save and take loans. Within Ghana, only 34% of the adults (age over 15) have access to a bank account, 16% to formal savings and 10% to formal borrowing. Reaching the rural poor with financial services is a challenge due to a low demand for credit, high delivery costs therefore many banks, and microfinance institutions focus on reaching the urban poor instead (FII, 2015).

2.5.1 Impact of Microfinance

2.5.1.1 The Financial Assets

In literature, several research works have revealed how microfinance permits the poor to keep, vary and improve income sources, helping to adjust income instabilities and keep consumption levels even in emergencies. As said by Zaman (2000) who observed Bangladesh Rural Advancement Committee's (BRAC) services and its impact on the wellbeing of its clients, made it known that being part of microfinance credit programs decreases poverty by leveling consumption, gaining assets, giving supports in emergencies, and empowering females. This finding is also in line with MKNelly and Dunford (1999) who found a positive result on income through microfinance. They controlled for potential biases by assigning communities to either a program or control group following baseline data collection, thus allowing program impact to be measured through simple evaluation between the beneficiaries and the control group. Their results revealed that the majority of participants forming 67 percent of the Bolivia CRECER Credit who were also offered education support indicated generally that their incomes improved since they joined in the program. Again, MKNelly and Dunford found that clients of Lower Pra Rural Bank Credit Union who also offer education support program in Ghana had their incomes improved by 36 USD against 18 USD for non-clients. Eighty percent of VSLA clients have been able to significantly vary and improve their income sources compared to 50 percent of non-clients (Non VSLA Members). Additionally, in 2001, Dunn and Arbuckle controlling for potential biases with the use of a case and a control group blended an advanced quantitative and qualitative methods and found in their studies that microfinance clients in Peru's capital city of Lima have over 50 percent



higher income compared with non-clients. These findings are not different from the field reports that are gathered by VSLA implementers who says that VSLA programs have the capacity to improve the livelihoods of women in rural areas.

It is difficult to rationalize household income during surveys. For this reason, household expenses are mostly applied to replace household income measurement to determine the general impact of intervention programs.

Some studies, however, have not been able to find positive impacts on income from microfinance membership. One of such studies is by Masanjala and Tsoka in 1997 who according to their findings concluded that there is a slight impact of FINCA microfinance support program in Malawi on living standards and expenditure patterns. In 2009, Ssendi and Anderson found a slight long-term effect, as measured by increases in household assets. However, these two studies used a less systematic methodology and made slight attempt to control for selection bias.

2.5.1.2 Poverty

In literature many studies have confirmed that having access to microfinance helps to reduce poverty occurrence. Dunn *et al.*, (2001) in his studies realized that only 28 percent of microfinance clients in Peru's capital, Lima lived below the poverty line against 41 percent of non-clients. Furthermore, Khandker in 2005 also confirmed the positive effects of microfinance on poverty occurrence. He used Grameen Bank clients for his studies and find that between 1991 and 1998, moderate poverty in all rural communities dropped by 17 percent, 18 percent in communities where Grameen Bank was functioning, and 13 percent in non-program communities. Among program beneficiaries since 1991, poverty rates dropped by a little more than 20 percent and about 3 percent per annum. Moreover,





Khandker in his estimation said that over half of this decrease is directly associated with microfinance services and finds the impact to be larger for severe poverty compared with moderate poverty. Khandker also computes that microfinance programs decrease mean village poverty level by a percentage point yearly in program communities. Microfinance hence benefits not only the poor but also the local economy. Generally, Khandker finds that microfinance contributed to 40 percent of the whole decrease in moderate poverty in rural Bangladesh.

2.5.1.3 Housing Quality

Housing quality has been widely used as an indicator for socioeconomic status measurements. For example, in developing countries factors such as type of house a household lives in and their income or expenditure has been often used as a determinant for a household's socioeconomic status. Basically, there is a positive impact of microfinance on the type of housing a household lives reported in literature. In 1988, Hossain conducted a study comparing Grameen Bank clients and qualified non-clients and concluded that clients of the bank spend six times more of their monies housing. Furthermore, in 2003, Neponen also conducted a related study using new clients of a microfinance facility as a control group to prevent selection bias in Trihcirappalli in India. He finds that clients of microfinance facilities lived in better houses comparatively. He went on to conclude that 64 percent of microfinance clients lived in tiled roof and concrete houses which is considered to be the best building materials in that setting against 50 percent of clients who joined the microfinance not long ago who were said to be living in mud and thatch houses.



2.5.1.4 The Education Background

General review of literature has pointed to the fact that access to microfinance is positively correlated to increased school performance and attendance among children of microfinance clients. Children of microfinance clients are expected to reach higher educational level compared to that of non-clients in rural communities (Littlefield *et al.*, 2003; Neponen 2003). In that respect, Barnes in 2001 controlling for potential biases finds that Zambuko Trust program in Zimbabwe affected the education of boys who were 6 to 16 years old. The same program after the program however did not have any effect on the education of their girl counterparts from client households in his studies. Pitt and Khandker studies in 1998 showed that microfinance program tend to improve enrollment of girls from clients' households attending school. Alternatively, Coleman study in 1999 finds that microfinance programs did not help in financing education of clients' children, which may be observed as a determinant for either ability to access education or quality of education.

2.5.1.5 The Nutrition and Health Status

Female clients of a microfinance program have shown that there is better nutrition and health compared with that of the counterpart group in literature on this subject matter (Pronyk *et al.*, 2007; Littlefield *et al.*, 2003; Hossain 1988). In 2003, Pitt conducted a related study and finds that children from beneficiary households of microfinance programs significantly improved in two out of three measures of health. Additionally, he finds that there is an increase in mid-upper arm circumference of their daughters by 6.3 percent whenever credits given to women are increased by 10 percent. Credits given to females also has significant and positive but to some extent slight effect on the arm



circumference of male children. There was a conclusion that credits given to females tends to have positive correlation with stunting among both boys and girls. However, no statistically significant influence is observed for body mass index (BMI) of boys or girls. Barnes in 2002 discovers that participation in Zambuko Trust in Zimbabwe has a positive impact on the occurrence with which food is consumed in severely poor households plus the quality of food. Particularly, participation in the microfinance program has improved the consumption of high protein foods like meat, fish, chicken and milk. In the same way, MkNelly and Dunford (1999) also found that children of the Lower Pra Rural Bank Credit program beneficiaries in Ghana had significant improvements in feeding frequency compared to children of non-beneficiaries. There were positive impacts however on the nutritional status of clients of the credit program in Bolivia and their children. Moreover, a thorough analysis of only the client group reveals that children's weight-for-age is positively associated with the quality of education services delivered. This finding put forward that without improvements in important caregiver practices, improved income and even women empowerment are improbable to produce marked improvement in the nutritional status of children.

2.5.1.6 The Economic Empowerment and Social Status of women

Many studies have established the fact that aiming at women as clients is an active method of guaranteeing that benefits of improved income add to the general welfare of the family (Khandker, 2005; Strauss *et al.*, 1996; Pitt and Khandker, 1998, 2003; Hoddinott and Haddad 1994). They indicated that such gender-targeted microfinance programs have proved to have a positive consequence on the equality and empowerment of women (Mwenda *et al.*, 2004). As a way dealing with the complexities of the term



empowerment, some researchers attempt to create a criterion for determining empowerment. In addition, Hashemi *et al.*, 1996, attempting to deal with the difficulties and uncertainties of the meaning of women empowerment created a composite empowerment indicator centered on eight components. A woman is empowered if she gets 5 out of the 8 components. Moreover, using a composition of sample survey and case study data and controlling for selection bias by statistically controlling for variations in demographic characteristics such as age, wealth and education, Hashemi's study finds that affiliation to any microfinance organization has significant impacts on all the eight dimensions. They indicated that each year of membership in microfinance program increases the likelihood of a female client to be empowered by 16 percent. In addition, even non-participants of any microfinance program stand at high chances to be empowered as well simply by living together with participants. There were also findings that microfinance programs empower women by

- Reinforcing their economic responsibilities
- Allowing them to create an identity outside of the family
- Giving them the capability and self-confidence in public.

Similarly, Terry in 2006 finds that there are significant improvements in the lives of female borrowers who take loans from FINCA in Tanzania, including improved social status and self-esteem, and an improved confidence. Women also feel empowered when there is improved income and the ability to save, buy household assets and add to the education of children. There is a suggestion in their findings that household members and the community at large see female participants in a better way. Terry however completely

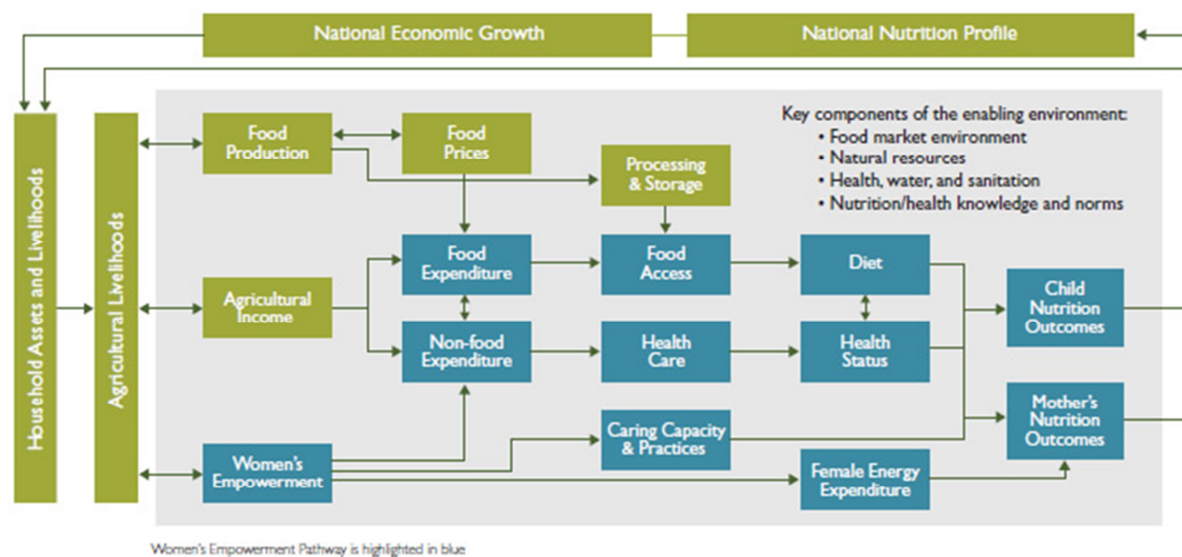
used qualitative data and did not think of including a control group. Therefore, there is not reliability in his study results.

2.6 Women's Empowerment and Nutrition

Women's Empowerment Program (WEP) in Ghana include raising an environment that helps to empower women to assume strategic positions in society and decision-making bodies and also empowering them as human right activists on gender-based and development concerns within their communities.

USAID initiated the Feed the Future initiative to significantly improve nutrition through agriculture-based activities that also endeavor to decrease rural poverty in 19 countries in focus. The initiative is intended to improve nutrition where it works and to contribute to the evidence base demonstration of the effect of agriculture on diet and nutrition for rural families (SPRING, 2014). The women's empowerment pathway focuses to improve nutritional impacts through agricultural livelihoods, demonstrated in deeper black boxes in the figure 2.2. However, all the pathways interrelate with each other. Typically, agricultural activities affect more than one pathway and work together with enabling environment including policies, the natural resource base, and cultural practices, among many factors.





The deeper black boxes highlight the Women's Empowerment Pathway

Figure 2.2: Steps concerning improved nutrition: The Women's Empowerment Pathway

Source: adopted from SPRING, 2014

From the figure 2.2, numerous factors that include social norms, knowledge, skills, and sharing of household decision-making power, affect the pathway from women's empowerment to improved nutrition. The pathway involved three interconnected components that includes using income for food and non-food expenses, the ability of women to take care of themselves and their families, and women's energy expenditure.

SPRING report on Understanding the Women's Empowerment Pathway in 2014 mentioned that a key approach in designing the USAID Family Farming Project was to aid improvement in the socioeconomic power of women to serve as a foothold toward better outcomes in agriculture and nutrition. The activity seems to be successful in improving women's control of income, increasing women's control of their time and improving access to health care. The following additional opportunities could be

considered as one moves further along the pathway toward sustainable nutrition outcomes and it is as follows:

2.6.1 Knowledge on Nutrition

Although emphasizing strongly on training has successfully helped to increase nutrition knowledge, the ability to purchase safe water restricts women's purchasing power, impeding their ability to fully utilize the acquired knowledge of nutrition practices. It is necessary to improve or develop potable water systems that will give women the independence to save enough money to purchase nutrient-dense foods and inputs for food production.

2.6.2 Food Access

Women are increasingly getting access to and gaining control of income. However, it is also key to ensure sufficient availability and affordability of more nutrient-dense foods in local markets and connect purchasing power, decision-making to behavior and social change messages.

2.6.3 Women's Time, Labor, and Income Control

The array of activities focusing on women's savings groups call for increased energy and time expenditure of participants. Women pointed out that they do not care spending extra time in essential activities aimed to improve their family's wellbeing and/or that gave opportunities for making extra income. Experimental evidence put forward that women empowerment improves maternal and child nutrition as well as the nutrition of other household members. For instance, increase in women's status helped reduce more than half of all child stunting from 1970 to 1995 (Smith and Haddad, 2000). Some studies in





literature have shown that women's unrestricted income has huge impact on nutrition of children and food security than that of men (Smith et al. 2003; UNICEF, 2011), among agriculture interventions that improve nutrition, and women's active participation has been a regular element (Ruel and Alderman, 2013). Agriculture again poses threats to household nutrition, particularly when women must work overtime and in places that affect the feeding of their infants and young children (UNICEF, 2011). Demanding extreme physical activity during pregnancy may also put unborn babies in danger (Herforth, Jones, and Pinstруп-Andersen, 2012).

2.7 Income, Poverty and Hunger

According to Horton and Steckel, (2005), for many years, economic growth has been uniquely used as a narrow measure for development. The DFID 2010 report focus on solution in itself but a critical catalyst for improving nutrition. The SDG 1 and 2 are rolled out by the United Nations to end extreme poverty in all forms. In addition, the goals are set out to end hunger, achieve food security and improved nutrition while promoting sustainable agriculture Economic growth. The issues of income, poverty and hunger are directly related. Income, poverty and unemployment are also very closely linked together, and by default, unemployment and hunger are correlated. Countries with high unemployment rate, often results in a large part of the population being dependent on subsistence farming. As income is generated rural population can become increasingly food secure which affects dietary intake. Increase income and access to credit will certainly give rise to access to health facilities. According to Sen (1999), employment is a good way to relieve the household of the vulnerability that incapacitate them making them unable to purchase goods and services. As household income is increased, the

opportunity for income diversification becomes a reality. Accessibility to quality food and health facilities also increase, and normally the UNICEF model, is operationalize which will eventually lead to reduced cases of undernutrition.

2.8 Economic Strengthening, Social Protection, and Livelihoods

According to UNICEF 2013 report, economic strengthening and livelihood empowerment programs such as social safety nets, can contribute to improvement in food security of poor households. This is improved by joining vulnerable household beneficiaries to healthcare facilities and social services, which affect nutrition positively. Social protection supports, like food and money transfers directed to help poor households improves incomes and reinforce resilience through resource protection (Leroy *et al.*, 2010). When social protection services is incorporated into healthcare services, money transfer programs have been proved to improve growth, decrease anaemia, and increase dietary diversity and intake of foods with high nutrient density particularly among infants and children from low-income households or communities (Leroy *et al.*, 2008; Rivera *et al.*, 2004).

2.9 The Village Savings and Loans Approach

Village Savings and Loans Association (VSLA) is made up of group of 15 to 30 people, who save collectively and can take small loans from the savings they make. The activities of the VSLA run in rotation of about one year, after which the profits made are shared among the members according to the proportion of one's contribution. VSLAs offer social support through a "Social Fund" for members in distress. They are member-based entities, member managed, and self-selected. VSLA provides financial services including access to loans or gifts to manage the cash flow of household's response to life-cycle





events or invest in activities that generate small income. A normal VSLA program provide people, irrespective of the poor and remote nature, operates and transact on flexible.

CARE International first developed VSLA in 1991 in Maradi in Niger which was designed basically for illiterate and extremely poor rural women. It was introduced into Ghana in 2002 by Care Ghana and later by plan Ghana. The approach has developed over the years to assist both literate and illiterate population, specifically for women who are in rural areas, market towns, peri-urban communities and urban slums. The key purpose of VSLA is to offer modest savings and loan services in communities with no formal financial facilities. VSLA methodology helps fill in the abovementioned gaps and operationalize micro banks in rural communities. VSLA implementation is not costive and it is founded on the principle of fund merging, designed to serve the most vulnerable whose income is uneven.

In the last couple of decades, the success of VSLA has been widely recognized as testament that the economically vulnerable in the society are now “bankable”. Unfortunately, there is lack of developmental structures together with bad roads, high population density and high labour costs. The VSLA is set out the bridge the gaps identified in the operations of microfinance there reducing the financial inclusion gap. VSLA has grown historically since its start in the early 90s and was identified “as an important instrument to achieve the Sustainable Development Goals” (Scheurle, Fanconi, & Staudacher, 2014, p. 142). It enables the poor to take loans and make investments so that improvements in their livelihood conditions become possible. It was primarily used by development institutions that aim at alleviating poverty for the (mainly rural) poor, but



by now a variety of actors have gotten involved. Yunus defines poverty as “imposed on the poor by the system that we created. He argues that society simply never gave poor people the space so that they can grow as tall as anybody else can. A lack of money equates to a lack of space” (Gehrke, 2013). Generally, a distinction is made between extremely poor, moderately poor and vulnerable non-poor (Barnes et al., 2001 p.83), which is relevant for this analysis.

The baseline for microfinance is that a change in the banking system is needed so that the poor get access to money that enables them to grow. Yunus wants to see foreign aid as enabling social business. VSLA which is a branch of microfinance, uses a particular *modus operandi* since it is small-scale and community-based. According to some experts, “VSL schemes are viewed as the one glimmer of hope for the poor, a critical way out of poverty and a means to the empowerment of low income-earners, especially women” (Mochoge, 2016). The fundamental idea of the VSL approach is to reach out to the unbanked rural poor and develop their access to savings, loans and insurance services. Most microcredit projects focus on the availability of credit whereas the VSL approach involves savings as a central part, something that is needed in order to be able to build up assets and insurance for the future. (ASAP, 2012b)

The World Bank (2013) observed that from the 193.6 million families which are categorized as poor worldwide, only 47.8% were found to be in the range of reaching the formal financial institutions’ services (Mochoge, 2016, p. 1). In the case of Uganda, exclusion from the banking sector is great, but a “remarkable improvement in financial inclusion in Uganda from 70% in 2009 to 85% in 2013” has taken place and most

commonly used are non-bank formal or informal financial services (Fin Scope, 2013, p. 5). The VSLA is an important mechanism in the latter category.

The 17 districts where GC RING is implementing the VSLA intervention, the Districts have been actively engaged recently, because it proved a successful mechanism for financial inclusion of the poor. According to a report on VSLA activity in Kabarole, both national and international NGOs have been involved with the promotion and start-up of these kinds of Savings Groups. Within VSLAs, there is the distinction between ‘indigenous groups’ contrary to ‘facilitated groups’, where only the latter rely on external support or training from government or private actors (Ledgerwood, 2013, p. 150). In **Figure 2.2**, a graph illustrates the VSLA scheme. I also refer to the CARE manual (Allen H., 2006), where the approach is described in detail.



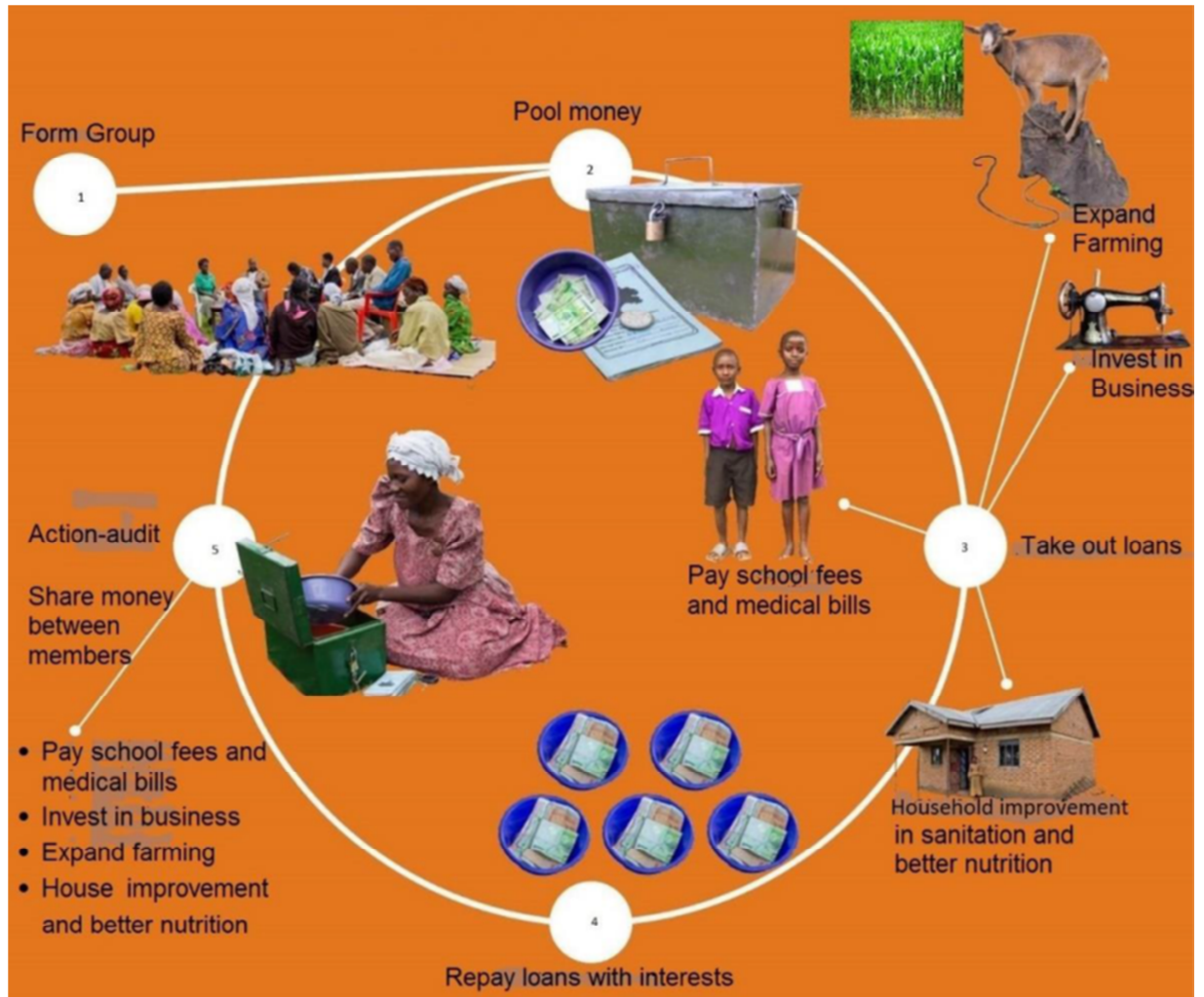


Figure 2.3: The VSLA Cycle

Source: adopted from Allen H., 2006

For the reasons discussed above, there is a great potential for VSLA groups for improving livelihoods and empowering the poor and women in rural communities according to many development actors (cf. Mochoge, 2016). Nevertheless, in the debate on development the methodology has received universal commendation.

Major 'residua lists' institutions like the World Bank advocate for economic 'catch-up' as means for development. Bernstein (1992, p. 24) used the term 'residua lists' in the



‘inclusion/exclusion-discourse’ to refer to those who believe that “inclusion (into capitalism, or globalization, or the world market) brings economic growth and development and improves the incomes and livelihoods of all participants”. For the concept of poverty on the other hand, the researcher refers to Sen’s capability approach which implies that real freedoms come from free from hunger, malnutrition, preventable morbidity and premature mortality, low education status, having good numeracy, having freedom of speech and being politically included. This makes one able to exercise his reasoned agency when increased in order to achieve development. He rejects “the reduction of development to economic measurements” (Sen, 1999). Although not discussed by Sen, the VSLA may signify a constructive development method because of its social positive approach.

Marxist-oriented political economists including Sandbrook (2000) on the other hand criticize Sen’s ‘pragmatic neoliberalist’ approach because it “purveys a false promise to the poor and socially excluded” (p. 1071). In the Global Development Crisis (2014), the Marxist political economist Ben Selwyn critically analyses current development policies, as well as Sen’s take on development, which he finds residual. Selwyn criticizes the relation where “enlightened actors” (states, entrepreneurs, international institutions and Non-Governmental Organizations) such as the UN carry out actions for the poor and develop strategies for expanding their capabilities (Selwyn, 2014, p. 3; p. 168).

We see Yunus’ comparison of the poor with a bonsai tree because of lacking money (cf. supra) contested here. According to Selwyn, development practices should be critical of capitalism rather than encouraging the system. For that reason, he advocates for a more

integrated conception of development that is “undertaken by ‘the poor’ themselves – that is, a labor-centered conception of development” (Selwyn, 2014, p. 3).

In this aspect, the VSLA could mean a mediation between the different stances on development, since it aims at making the poor actors rather than subjects and has as objective to increase on the different capitals and encourage freedom for the poor. CARE promotes the VSLA as “100% member owned” (CARE, 2014, p. 17). Is this what Selwyn is looking for as a community-based development strategy or does the CARE’s active promotion of finance through linkage with commercial banks (cf. *infra*) show the true nature of VSLA as a mechanism for expansion of capitalist markets? (Boyle, 2015).

2.9.1 Efficiency of VSLAs

Much research has been done on the functioning of saving groups, but the question whether it serves as a mechanism for livelihoods improvement is difficult to answer. Several researchers have written extensible on internal dynamics and sustainability of groups including: Anderson et al. (2009); Besley et al. (1993); Etang et al. (2011) and Karlan (2006) et al. Bouman (1983). They have written extensible on VSLA members’ motivation for participating in a VSLA. According to UNDP, (2005), it is estimated that 45 percent of the population of Ghana is estimated to be poor, with earnings less than \$US 1 daily, mostly in rural areas that lacks many of the basic social amenities.

2.9.1.1 Advocates

A great share of literature on the methodology of village savings can significantly improve rural livelihoods (Mohanty, Mohapatra and Khuntia, 2013 et al.). Other studies



have shown that although the VSLA procedure has proven its value, it still meets many challenges (Allen, 2006; Allen & Staehle, 2009; Allen & Panetta, 2010; Ghatak, 1999; Hansen 2012; Myrray & Rosenberg, 2006 et al.).

Helmore et al., (2009), indicates that VSLA is hailed as being cost-efficient, self-sustaining, relying on traditional economic systems and not resources. In addition, VSLA is commended for its acclaimed ability to reach out to the most vulnerable households in society. There are linkages between VSLAs and poverty reduction and confirm other positive findings: membership of saving groups is found to contribute to increasing household assets; improvement in housing quality and growth of members income generation activities. Schola (2015) found that VSLA membership can lead to increased social capital, because it encourages a hard-working attitude and improved status within families and the community.

Additional achievements found in other studies include short-term economic empowerment for women; higher profits in business enterprises; increased influence of women in the household and community decisions (Anyango, et al., 2006). Some of the principal development institutions have applauded the VSLA approach for its incorporation of women in the financial system and its empowerment of the rural poor. Mochoge (2016) finds that women form approximately 83% of the reported clients of VSL projects. He observed that the strength of VSL schemes was founded on women's proper utilization of funds, financial discipline and timely repayment of loans. Robinson (2004); Ghadoliya (2000); Martins (2015) et al. found that membership of VSLAs have a significant effect on female rural livelihood outcomes and can lead to an increase in



average monthly gross profit over time. Other capitals can also be stimulated: housing conditions, education and access to healthcare improve.

In other words, the VSLA approach has much potential, but the methodology benefits could become more comprehensive if certain challenges, which opponents of the method pointed out were coped with.

2.9.1.2 Opponents

Over the years some criticism of the method has arisen due to fraud and groups collapsing, for which it was “no longer hailed as the ‘silver bullet’ for poverty alleviation” (Hollingworth, 2014). Unsuccessful targeting of the (very) poor, high interest rates and gender bias of microfinance interventions are some of the common critiques. Hansen (2012) finds the “financial exclusion of particularly the poorest” a major challenge because the scheme misses its ‘access for all’-goal, especially in the farthest regions of especially. Mersland and Eggers (2007) find that because members self-select each other, there is a “continued practice of exclusion in the local communities. The more vulnerable, the disabled, the outcasts etc. are often excluded from participating [in VSLAs]” (Mersland and Eggers, 2007, p. 20). Simanowitz (2002) proposed ways in which the most vulnerable may be removed from membership, due to personality traits, self-selection practices, and negative opinions of the poor or inducements for robust individuals to exclude the most vulnerable community members. I quote from Montesquieu and Sheldon (2014): “serving the extreme poor effectively is more expensive and more difficult, both because such populations are often geographically and socially isolated and because of the complex, multi-dimensional nature of severe poverty”.





Referring to the development debate, Schola (2015, p. 26) finds that other surrounding factors also need to be tackled, because “access to financial services alone cannot solve poverty challenges faced by women”. While some authors argue that there must first be female empowerment within patriarchic societies, others argue that precisely VSLAs will enable this empowerment. According to Microsave Africa (2001), negative impacts for women include an increased workload, indebtedness and vulnerability to domestic violence precisely because of the procedure’s focus on women. Also, Oxaal & Baden (1997, p.9) finished by saying that loans may pose as burden to women rather than a tool to reduce poverty. Oxaal contents husbands of these women who take loans are often forced to surrender their loans to help them manage the home.

Another challenge has to do with the system that relies on trust and bias. Johnson’s (2004) study finds that the group’s social component has a potential negative effect, because “norms are often enforced through sanctions such as guilt, shame and informational sanctions, which may for example aim at damaging someone’s reputation (p.1359). Because of its informal nature, fraud is a common problem and has provided a protective way for the crooks because they know that the only punishment they can receive is to be expelled from the association (Busingye 2015). Busingye adds to this discussion that women by default had been taken to be trustworthy but equally betrayed (2015, p.66).

There are certain requirements that need to be fulfilled to be able to become a member, however, these requirements are mostly about characteristics of the individuals and not necessarily about the economic situation. The objective is to form groups with

individuals with similar economic conditions that are likely to attend the meetings, repay the loans, and in other words, likely to be a “good member”.

When becoming a member of a VSLA a small training is included before the actual group activities begin. This training contains information about; how to save regularly, how to take loans from the savings and how to share out the savings and profits each year according to each person’s contributions. (Allen & Staehle, 2011). The VSLA model was first introduced in Niger and has since then developed and been carried out by several organizations in at least 61 countries in Africa, Asia and Latin America (VSL Associates, 2014).

2.10 Resiliency in Northern Ghana (RING) Project

Resiliency in Northern Ghana (RING) project is a poverty alleviation program implemented to facilitate the improvement in nutrition and livelihood status of weak households in an integrated fashion. USIAD-RING project implementation applies a multidisciplinary methodology to improve the resiliency of these vulnerable households through savings and loans, income generation, agriculture, nutrition, WASH, and leadership mediations. The project targets to improve the lives of women through these interventions by improving their time control, improving their control over household income, and increasing their social resources, thereby making more resilient families (USAID, 2016).

RING has worked closely together with Government of Ghana (GOG) systems since 2014 to provide services to some of the most deprived communities in the Northern Region. In 2014, the RING contract was awarded to the Global Communities and the





technical support of the project was extended across all component communities to the 17 Metropolitan, Municipal and District Assemblies (MMDAs) and the Northern Region Coordinating Council (NRCC). As RING closes out in the 2017 Fiscal Year (FY17), all districts are in the midst of successful implementation of planned agriculture, livelihood, sanitation and hygiene, nutrition, and governance activities. USAID-RING continues to work closely with the leadership of the districts and the region to make sure that there is effective provision of quality services to these vulnerable households (USAID, 2017). Nutrition is one of the major intervention areas of the RING project. The key objectives of the nutrition component of the RING intervention include:

- Component one, which is improved accessibility and consumption of various types and high-quality food among selected households, mainly among women and children;
 - Component two, which is to improved nutrition and hygiene activities among women and children; and
 - Component three, which is strengthened local livelihood, support networks resolving the existing nutrition and livelihood needs of vulnerable households.
- RING VSLA is captured here.

2.10.1 Village Savings and Loans Association's (VSLA) implementation at RING

VSLA has evolved into one of the flagship interventions of the RING project, given its effect on the ability for women to expand their livelihoods and access credit at critical periods throughout the year. Initial indications have been that VSLA is making a viable impact on weak households by increasing their food security, allowing women the



opportunity to diversify into income generating activities, and supporting family needs, such as supplementary food, healthcare, and education (USAID, 2016).

Although only three districts implemented VSLAs in 2014, it was not until the activity scaled up in 2015 that many districts took note of the intervention and its potential. During the 2015 implementation cycle, eleven districts selected VSLAs under their RING Annual Work Plan (AWP). The low-cost, easy to set-up activity proved to have a real impact on the households and the women were enthusiastic. They finally had access to loans and could rejuvenate struggling business ventures, pay down lines of credit at stores or with healthcare providers, and secure school fees for their children. Based on these early successes, Global Communities RING prioritized VSLA and succeeded in ensuring that all districts implemented the activity in 2016 (USAID, 2017).

Though each district included it in their work plan, Global Communities RING added further support to the intervention by hiring VSLA Field Facilitators; short-term consultants - to work alongside district staff in different communities to distribute inputs, train members, and get savings started before handing over general management to the district. This intervention has proven vital to improving the accessibility of rural women to savings and credit and has provided a perfect channel to deliver financial literacy, numeracy and basic business skills trainings. VSLAs have also proven to be useful in terms of increasing women's control over household assets. Many women have utilized their VSLA funds to finance their families' health, education, and food needs during the lean season, to rejuvenate small income generating activities and, in most of cases, start new micro-enterprises. This progress does not only diversify income streams, but it smooth household income throughout the year, particularly at time when food stock are at

its lowest, when funds and food are often scarce in vulnerable households. (USAID, 2017). VSLA intervention has a high potential for sustainability, given the low maintenance costs, and the financial management skills and the cultivation of a savings culture imparted on the women engaged (USAID, 2017).

2.11 Nutrition of Children and Women

Adequate nutrition plays critical role to growth and development in children. The period from birth to 24 months is particularly essential for physical, cognitive growth, mental, health, and development. This is the same period where there is poor infant and young child feeding practices that brings about poor nutrition, including deficiencies in micronutrient and chronic infections that hinders optimal growth. Childhood disorders such as diarrhea and acute respiratory infections (ARIs) are common during this same period. Nutrient adequacy in early stages of life is vital to guarantee good physical and mental development and lasting health (GSS, 2014).

The implications that the nutritional status of women has on their health and that of her children is crucial. Malnutrition in women brings about decreased productivity, increased vulnerability to infections, and slackened recovery from sickness. Low BMI, and short stature and anaemia or other micronutrient deficiencies cause increased threat to complications in pregnancy including poor foetal development, an intensified risk of poor pregnancy outcomes and postpartum hemorrhage causing death (GSS, 2014).

2.12 Nutritional Status of Children

There has been a steady reduction in the prevalence of stunted children from 35 percent to 19 percent from 2003 to 2014 respectively. There has been a decrease trend in the



proportion of wasted children from 8 to 9 percent between 2003 to 2008, to 5 percent in 2014. There has also been a decrease in proportion of underweight children from 18 percent in 2003 to 11 percent in 2014. There were fluctuations in the prevalence of children who are overweight from 4 to 5 percent between 2003 and 2008, which is now at 3 percent (GSS, 2014). According to the GDHS 2014 report, prevalence of stunting and underweight was high in the Northern Region with 33.1% and 20.0% respectively and was third in Wasting with 6.3%. Pervasiveness level of malnutrition in Northern Region is higher than that of the nation. (GSS, 2014)

Table 2.12: Nutrition status of Northern Region (GDHS, 2014)

Malnutrition	Severe %	Moderate %	General Malnutrition %
Stunting	10.7	22.4	33.1
Wasting	1.6	4.7	6.3
Underweight	3.6	16.4	20.0



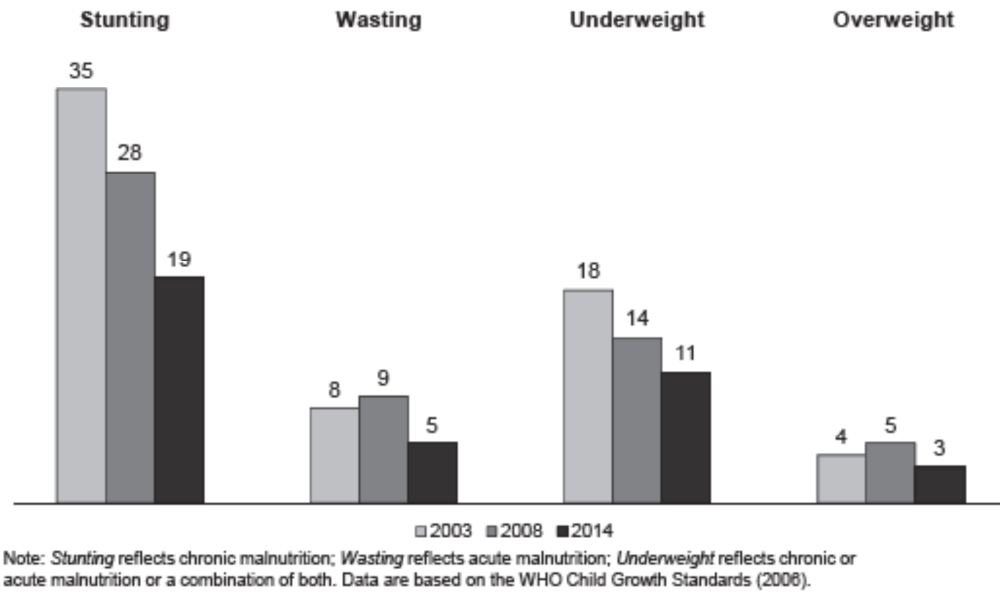


Figure 2.12: Trend of the various forms of malnutrition

Source: GSS, 2014

2.12.1 Measurement of Nutritional Status among Young Children

According to Kyle *et al.* (2002), anthropometric measurements are very much reliable for measuring the nutritional status when compared with other methodologies that are more complicated.

GSS 2014 report computed for height-for-age, weight-for-height, and weight-for-age to know the nutritional status of children under 5 by measuring their weight and height or length and taking their date of birth. Different information about growth and body composition that can be used to assess nutritional status were provided by these indices (GSS, 2014).

Linear growth retardation and cumulative growth deficits is indicated by height-for-age index. Children with height-for-age z-score below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age or stunted



or chronically malnourished. Children below minus three standard deviations (-3 SD) are said to be severely stunted. Stunting is an indicator for failure to obtain adequate nutrition for a long period and is affected by recurring and chronic illness. Therefore height-for-age is the lasting effects of malnutrition, specifically undernutrition, in a population and is not sensitive to current, immediate changes in dietary intake (GSS, 2014).

The weight-for-height index quantifies body weight in relation to body height or length and indicate current nutritional status of children. Children with z-scores below minus two standard deviation (-2 SD) from the median of the reference population are said to be thin or wasted or acutely malnourished. Wasting is the failure to obtain adequate nutrition in current periods. It may result from inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Children whose weight-for-height is below -3 SD are considered severely wasted.

Other forms of malnutrition that are becoming increasingly a concern for children in developing countries including Ghana is overweight and obesity. Children are considered overweight when their z-score is $+2$ SD above the median for weight-for-height (GSS, 2014).

Weight-for-age is a combined index of weight-for-height and height-for-age. Both acute and chronic malnutrition are taken into account. Children are classified as underweight when their weight-for-age is below -2 SD from the median of the reference population. Children who are considered as severely underweight have weight-for-age below -3 SD from the median (GSS, 2014). Summary statistics representing the nutritional status of children in a population are calculated using the means of z-score. These mean scores can be used to describe the nutritional status of the population without using the cut-offs. A

mean z-score of less than 0 which is a negative value for stunting, wasting, or underweight suggests a downward shift in the distribution of the respective index and averagely, children in the WHO Multicentre Growth Reference Study are well nourished compared with children in the general population (GSS, 2014).

2.13 Nutritional Status of Women

Maternal height is a result of the combination of genetics and the effects of childhood and adolescence nutrition. It is an indicator of risk of difficult delivery because small stature is frequently related to small pelvic size. Women with short stature are at higher risk of giving birth to low birth weight babies. A woman is said to be at risk for poor birth outcomes and obstetric complications when the height is below the cutoff point defined as 145 centimeters. In Ghana one percent of women age 15-49 are below the cutoff point (GSS, 2014). Body Mass Index is calculated by dividing weight in kilograms by height in meters squared (kg/m^2). A BMI cutoff point of 18.5 is validated for evaluating chronic energy deficiency in non-pregnant women. The other end of the BMI scale are cutoffs to consider one as overweight if her BMI is between 25.0 and 29.9 and obese if her BMI is 30.0 or greater (GSS, 2014).

Generally, most Ghanaian women representing 54 percent have a normal BMI, few of them representing 6 percent are thin, while an increasing prevalence of overweight or obesity is 40 percent. Five percent of women are considered to be mildly thin, while 1 percent are moderately or severely thin. There is a greater concern on the increasing prevalence of overweight and obesity in Ghana compared with thinness. In Ghana the average BMI for women age 15 to 49 is $24.8 \text{ kg}/\text{m}^2$. Generally, the average BMI increases with age, the lowest value, which is $21.3 \text{ kg}/\text{m}^2$, being observed among



adolescent women age 15 to 19 and the highest value, which is 27.2 kg /m², being observed for adult women age 40-45. There is a positively association between the mean BMI of women and education status of women and household wealth (GSS, 2014).

Among the 40 percent Ghanaian women with BMI greater than 24.9kg/m², 25 percent of them are overweight, and obesity represent 15 percent. There is also a positive correlation between the proportion of overweight or obese women and women's age. There was a proportional increase from 9 percent among women age 15 to 19 to 56 percent for women age 40 to 49. Regional differences are highly remarkable. Women in Greater Accra were four times more as likely to be overweight or obese as those in the Northern region, 57 percent and 12 percent respectively. Obviously, there was a positive correlation between proportion of overweight or obese women and household wealth. There was a steady increase in percentages from 13 percent to 60percent in the least wealth quintile and the highest wealth quintile respectively. The proportion of overweight or obese women also increase with education status, affecting 27 percent of women who have no education and 49 percent of those who attained secondary or higher education status (GSS, 2014).

2.14 The Dietary Diversity

To obtain detailed data on household food access or individual dietary intake can be costly, time consuming and requires adequate technical skill both in data collection and analysis. Dietary diversity is a qualitative measure of food consumption that reflects household access to a variety of foods and is a proxy for nutrient adequacy of the diet of individuals. The dietary diversity questionnaire is a rapid, user-friendly and easily administered low-cost dietary assessment tool (Swindale *et al.*, 2006).



It is easy to score and analyze data collected with the questionnaire. The dietary diversity scores questionnaire is made up of simple count of food groups that an individual or a household has eaten over the past 24 hours (Swindale *et al.*, 2006).

The household dietary diversity score (HDDS) is in a snapshot form is meant to reveal a household's availability, accessibility and affordability to variety of foods. Several studies in literature have revealed that there is a direct and positive correlation between dietary diversity, and socio-economic status and household food security or household energy availability (Hoddinot and Yohannes, 2002; Hatloy *et al.*, 2000). Individual dietary diversity scores are meant to reflect nutrient adequacy. Studies conducted for different age groups have also shown a direct and positive correlation between individual dietary diversity score and nutrient adequacy of the diet. Dietary diversity scores is validated as a proxy for measuring adequacy of macro- and micronutrient of the diet for different age and sex groups. Scores is positively correlated with micronutrient adequacy of complementary foods for infants and young children (FANTA, 2006), and adequate macronutrient and micronutrient density of the diet for non-breastfed children (Ruel *et al.*, 2004; Kennedy *et al.*, 2007), adolescents (Mirmiran *et al.*, 2004) and for adults (Foote *et al.*, 2004; Arimond *et al.*, 2010). These validation studies are not accepted worldwide and may be accepted in only one country while other studies have attempted to validate dietary diversity scores worldwide. Nevertheless, there are still research ongoing and there is currently no international agreement on which food groups to add in the scores at the individual level for different age and sex groups.



2.14.1 Dietary Diversity Score

The numbers of food groups recommended to be included in the HDDS is based on the blend of current available research findings. FANTA proposed the food groups on the HDDS (Swindale *et al.*, 2006). There is no global agreement on which food groups should be included in the HDDS table and the findings of recent research could justify changing the groups. The HDDS is meant to indicate household economic access to food, thus food items that require household incomes to obtain, such as condiments, sugar and sugary foods, and beverages, are included in the table. Individual scores are meant for revealing the nutritional quality of the diet.

WDDS does not include fats and oil food group because it is revealed in previous researches in literature that this food group have no or less micronutrient density. However, it is necessary to know the proportion of individuals eating fats, oils as a separate indicator. This is because oil is known to have high energy density and enhances the absorption of fat-soluble vitamins and plant carotenoids (FAO, 2010). In creating the HDDS, combinations of some food groups were made to form single food group in the dietary diversity questionnaire. The possible score range is 0 to 12 for HDDS. This study used the HDDS questionnaire, which combined some food groups into one as indicated in the table below. The difference between the mean dietary diversity score between the experimental groups and the control groups were used to differentiate between the dietary diversity status between the two groups. (FAO, 2010).



Table 2.14.1: The food items on the HDD questionnaire (FAO, 2010)

Question number(s)	Food group
1	Cereals
2	White tubers and roots
3,4,5	Vegetables ¹
6,7	Fruits ²
8,9	Meat ³
10	Eggs
11	Fish and other sea foods
12	Legumes, nuts and seeds
13	Milk and milk products
14	Oils and fats
15	Sweets
16	Spices, condiments and beverages

¹The vegetable food group is a combination of vitamin A rich vegetables and tubers, dark green leafy vegetables and other vegetables

²The fruit group is a combination of vitamin A rich fruits and other fruits

³The meat group is a combination of organ meat and flesh meat

2.15 The impact of VSLA on Nutrition

Some studies have made it known the influence of microfinance programs for that matter VSLA on nutrition of households. Lant Pritchett and Summers (1996) mentioned that wealthier is healthier and for this reason the more income the mother makes the healthier her child and her household. According to Horwitz (1995), poverty causes malnutrition and malnutrition in turn increases poverty in a vicious cycle. This means that when one's financial situation is improved, it could result in an improved nutritional status.





About 130 million children less than five years are under-weight with the highest prevalence in south Asia and Sub-Saharan Africa due to poverty (Caulfield *et al.*, 2006). Caulfield *et al.*, in their study pointed out that stunting; under-weight and wasting were decreasing in most parts of the world but was increasing in Africa. This implies that any intervention effort such as VSLA geared towards poverty reduction could result in positive impacts in reducing malnutrition. Pronyk *et al.* (2007) showed that households of particularly female microfinance clients resulted in better nutrition and health status compared to households of non-client.

There are more than 147 million children under the age of five who are chronically undernourished or stunted, and more than 126 million who are underweight in low income countries today (World Bank, 2006). Uthman (2007), indicated in his study that there was an inversely proportional relationship between prevalence of stunting and underweight, and household wealth status. The general indices for stunting, underweight and wasting respectively were -0.14 (95% CI: -0.16 to -0.12; $p = 0.001$), -0.15 (95% CI; -0.18 to -0.12; $p = 0.001$), and -0.06 (95% CI; -0.17 to 0.04; $p = 0.067$).

A research conducted by Abdulai *et al.*, (2014) on the impact of VSLA on under 5 nutritional status in the Sissala West District in Upper West region of Ghana, found 81.1% and 24.4% of the children in VSLA and non-VSLA households respectively being well nourished. However, 18.9% of children in VSLA and as much as 68.9% of those in non-VSLA households found to be moderately malnourished. The study found no child under VSLA being severely malnourished as 6.7% were found under non-VSLA households.

Abdulai et al. (2014) also found participation in VSLA program to result in improved food intake in households in the Sissala West District, as all 90 VSLA respondents indicated that they experienced an improvement in their food intake pattern over the past four years against 14.4% of non-VSLA respondents.

According to Barnes (2001), participation in a microfinance program, which is Zambuko Trust Fund in Zimbabwe, had a positive effect on the frequency at which food was eaten in exceedingly poor households along with food quality particularly the intake of high protein food such as meat, milk, egg, fish, chicken etc.

According to Carlson *et al.* (1999), the prevalence and the seriousness of food insecurity increase as household incomes decrease. This signifies that a sound financial status of a household could guarantee food security thereby allowing for dietary diversity within the household. Similarly, Hong *et al.*, (2006), in their study in Bangladesh found a strong and significant relationship between household wealth inequality and chronic childhood under nutrition. It was revealed in this study that children of poorest household had highest risk of being chronically malnourished than the children of wealthiest households.

The review of the literature shows generally that even though several studies have brought to the fore the impact of microfinance programs for that matter VSLA on nutrition of households, no systematic empirical studies have been done in Gushegu District, in Northern Region of Ghana. The purpose of this study is therefore to contribute towards filling in this gap in knowledge.



CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents profile of the study area and methodology employed in data collection and analysis. This includes the design, the sampling techniques and sample size determination, the method of data collection as well as data processing and analysis.

3.1 The Study design

A cross-sectional and a case control study design was used as the framework for assessing the association between Village Savings & Loans Associations (VSLA) program and maternal and child nutrition.

3.2 Study population and area

Gushegu district is part of the 27 districts in the Northern Region of Ghana. According to the 2010 Population and Housing Census, Gushegu has a population of one hundred and eleven thousand, two hundred and fifty-nine (111, 259) representing 4.5 percent of the total population in the region. Gushegu is the capital of the district with 395 communities. The district is primarily rural with slightly over three quarters of the population (76.0%) living in rural communities. The district is situated in the eastern part of the region sharing boundaries with Saboba and Chereponi districts to the east, to the west with Karaga district, to the north with East Mamprusi district and to the south Mion District and Yendi Municipality. The district covers a total land area of almost 2,674.1 square kilometers. The distance between the district and the capital of the region, Tamale is



about 114 km. Gushegu is estimated to be located between longitude 0°W to 19°W and latitude 9°N to 55°N.

The district has an average household size of 9.9 persons. Majority of the people forming 68.1 percent of the people in the district are Muslims with 1.6 percent of them affiliated no religion. Christianity and Traditional religion constitute 8.1 percent and 22.2 percent respectively. Illiterates forms 79.7 percent of the population 11 years and above while literates forms 20.3 percent. Males are more literates in the district (25.7 %) than that of females (15.4%). Majority of the people employed in the district (88.3%) are farmers, 4.4 percent are into service and sales, 2.7 percent are into craft and trade, and about 1.5 percent are engaged in professional work. Almost every nine out of ten people in a household is engaged in farming.

The Gushegu district is part of the Guinea Savanna Vegetation zone having two main annual seasons, which are the dry and the rainy seasons. The rainfall in the district is between 900 and 1,000mm annually. There are high temperatures all year long with an average temperature of 35°C. There are numerous NGOs operating in this area including RING, World Vision, ACTION AID, RAAP and SILDEP. The Village Savings and Loans Association (VSLA) programme was instituted by RING aimed at improving livelihoods and reducing malnutrition in the district and the nation at large.

3.3 Sample size determination

The total number of respondents for this study from VSLA communities and Non VSLA communities is determined below. The sample size of the study was determined using the statistical formula below,



$$n = \frac{z^2 p(1-p)}{ME^2} \text{ (Snedecor and Cochran, 1989)}$$

Where; n = Sample size

ME = Margin of Error

Z = z-value corresponding to confidence level

p= Estimated proportion/Prevalence rate

The prevalence rate (P) of under-five child malnutrition (stunting) of Northern Region stood at 19% (0.19) (GDHS, 2014), margin of error (ME) of 5% at 95% confidence level and z-value = 1.96 were used in the calculation of the sample size.

Calculation:

$$\text{This implies that } n = \frac{1.96^2 \times 0.19(1-0.19)}{0.05^2} = \frac{3.8416 \times 0.1539}{0.0025} = \frac{0.5912}{0.0025} = 236$$

Contingency of 27% = 64

$$236+64=300$$

The implication is that the sample size needed to do this study is 300, 150 from VSLA household or group and 150 from Non VSLA households or group.

3.4 Sampling technique

Simple random sampling technique was used in selecting the VSLA communities using the lottery approach. In this wise, the names of VSLA communities in the target area were written on pieces of paper and folded in a bowl. One research assistant was blindfolded to pick a total of 5 communities from a bowl of thoroughly mixed choices to represent VSLA communities.





Thirty households were visited in each VSLA community for data. These communities include Bating, Jahinfoya, Matenya, Zamashegu, and Koblisung. Convenience sampling was used to select Non-VSLA communities because there was only one non-VSLA community in the area which is Matingda. Ninety households were drawn from Matigda. Four other VSLA communities with non-VSLA households were selected where data was collected from fifteen households. These other four communities include Bating, Jahinfoya, Matenya, and Koblisung.

Once in the randomly selected study community, the lottery approach was still used to select target households. Within selected households, all women who have a child under 5 years were self-selected as the primary target for the study.

3.5 Data collection methods and tools

Participants were assessed using quantitative and qualitative questionnaires. Semi-structured questionnaires were used to collect primary data for this study mainly because most of these respondents were not able to read and write. The questionnaire was administered through interviews using the questionnaire as a guide. The questionnaire had three parts, including items on demographic characteristics of respondents, assessment of income status, Dietary diversity of households (FANTA, 2006), and anthropometry.

Income status of households was assessed qualitatively. A question was asked to indicate whether there was better or same or worse income levels comparing the year of the study to the previous year.

Dietary diversity was assessed quantitatively using the dietary diversity of household (FANTA, 2006) questionnaire in the table below. Parents/caregivers participating in the study were asked to indicate Yes or No whether the types of foods in the table was eaten by the participants themselves or anyone else in their household the day and night before the day of the study. One is placed in the category area against the food group if the response is Yes and Zero is placed when the response is No.

QUESTIONS AND FILTERS

CODING CATEGORIES

CEREALS: bread, rice noodles, biscuits, or any other foods made from millet, sorghum, maize, rice, wheat, etc.

ROOT & TUBERS: Any potatoes, yams, manioc, cassava or any other foods made from roots or tubers?

VEGETABLES: Any vegetables? Cabbage, “aleefe”, kenaf, green pepper, “ayoyo”, etc.

FRUITS: Any fruits?

MEAT, POULTRY, OFFAL: Any beef, pork, lamb, goat, rabbit wild game, chicken, duck, or other birds, liver, kidney, heart, or other organ meats?

EGGS: Any eggs?

FISH & SEA FOODS: Any fresh or dried fish or shellfish?

PULSES/LEGUMES/ NUTS: Any foods made from beans, peas, lentils, or nuts?



MILK & MILK PRODUCTS: Any cheese, yogurt, milk or other milk products?

OIL/FATS: Any foods made with oil, fat, or butter?

SUGAR/ HONEY: Any sugar or honey?

MISCELLANEOUS: Any other foods, such as condiments, coffee, tea?

TOTAL

Data on nutritional status of children under 5 in this study was collected by measuring their weight, height and taking their date of birth. Z-scores (z) of three indices were calculated using these data collected: height-for-age, weight-for-height, and weight-for-age:

$$z = \frac{X - \mu}{\sigma}$$

Where X is sample mean

μ is the population mean and

σ is the standard deviation

Weight was measured using Seca 878 digital scale that is specially designed for weighing children and adults. Height was measured using UNICEF production measuring board for children. The height of children aged below 24 months were measured by lying them down on the board (recumbent length), and children 24 months and older were made to stand for their height to be measured. Child Record books and identification cards (Voters ID and NHIA card) were used to take the date of birth and age of children and mothers respectively.



BMI was calculated for mothers by computing weight in kilograms divided by height in meters squared (kg/m^2). Women who had given birth in the two months prior to the study were left out from calculating BMI. Confidentiality was assured after which they were interviewed for data.

3.6 The Data analysis

Data collected were analyzed quantitatively and qualitatively using both descriptive and inferential statistics. The data gathered were first edited to remove errors and then coded. Statistical Product and Service Solutions (SPSS, version 21.0) was used for the entry and analysis of the data. World Health Organization's Anthro II was used to categorize the nutritional status of children under 5 years. Data was represented using descriptive statistics such as frequency and percentage. Besides, all the other constructs were analyzed for statistical significance ($p=0.05$) using chi-square test and t-test where appropriate. All analysis was done comparing VSLA and Non VSLA data.

Household dietary diversity was analyzed quantitatively using the total mean score for both groups by adding the responses Yes (as One) and No (as Zeroes). T-test analysis of Dietary Diversity Total Score between VSLA and non-VSLA households was performed to determine statistical significance. The frequency at which the two groups ate a particular food type was also presented.

Household nutrition was analyzed using mothers' nutritional status. BMI was calculated from mother's weight and height. The BMI was presented in means and groups, which are Thin, Normal, Overweight and Obesity. A BMI cutoff point of 18.5 is validated for evaluating chronic energy deficiency in non-pregnant women. The other end of the BMI



scale are cutoffs to consider one as overweight if her BMI is between 25.0 and 29.9 and obese if her BMI is 30.0 or greater. Z-score for height-for-age, weight-for-height and weight-for-age were computed for stunting, wasting and underweight in children under 5 years respectively. Z-score of less than -3 indicates severe acute malnutrition while Z-score of less than -2 to -3 indicates moderate acute malnutrition. Children with Z-score of greater than -2 indicates that they are normal. Means of MUAC was used in the analysis.

The association between VSLA status and the nutritional status of mothers and children were analyzed using chi-square test. The level of significance observed was compared to the expected value ($p=0.05$) to determine association.

1.6 Ethical Consideration

The conduct of this study was approved and sanctioned by the School of Allied Health Sciences, Department of Nutrition, and University for Development Studies (UDS). As a community base study, proper community entry and mobilization procedures were ensured. The consent of each of the study respondents was obtained before commencement of the interview after the background and goal of the study was explained to them. They were also assured that the information given was going to be kept confidential both during and after the study.





CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presented the findings on effects of VSLAs on mothers and their children under five nutrition. The foremost portion of the section gives the socio-demographic characteristics of respondents including age, sex, religion and education. The review of the literature suggests that these are important background variables against which cross

tabulations could be done in the subsequent analysis of the data. The second section provides both the quantitative findings in answering the research objectives.

4.1 Socio-demographic characteristics

In all, a total 300 Konkomba women in reproductive age between 15 - 44 years were interviewed (150 women each was interviewed from VSLA and Non-VSLA households respectively.) Respondents were mothers 'of households that had at least one child under five years old. The results showed that all VSLA respondents were married while few (2.9%) of the Non VSLA respondents were not married. In addition, the results further show that all the non VSLA households were male-headed, while 4.3% of females headed the VSLA households. The results also show that over 91% of both the VSLA and non-VSLA groups had no education. However, 5.9% of respondents from the Non VSLA group managed to reach primary education, while only 2.9% of the VSLA groups reached same primary education. **Table 4.1** gives a summary of socio-demographic characteristics of respondents.

Table 4.1A: Sociodemographic characteristics between VSLA and Non-VSLA respondents

Variable		VSLA household (%) (N=150)	Non-VSLA household (%) (N=150)
Ethnicity	Konkomba	100.0	100.0
Type of Household	Males	95.7	100.0
	Female	4.3	0.0



Marital Status	Yes	100.0	97.1
	No	0.0	2.9
Education Level	None	92.8	91.2
	Primary	2.9	5.9
	JHS	1.4	0.0
	SHS	2.9	2.9
	Tertiary	0.0	0.0

Source: Field survey, 2018

Table 4.1A shows that, as to be expected in rural communities and a patriarchal system, men dominate as heads of households (96%). The very few households headed by women (4.3%) were mainly because of deceased husbands where the widow had not remarried. Among other interpretations, this finding may reflect the fact that the campaign against widow inheritance where women were forced to marry the kin of a deceased husband as a cultural practice is paying off. This development coupled with the disapproval for divorce within the cultural setting may account for the emergence of women headed households in the prototypical patriarchal traditional system of the Kokomba.

To achieve good nutrition and adequate nutritive diversity at the household level, USAID RING provides both nutrition-specific and nutrition-sensitive interventions as required. USAID RING does not only give financial support in the form of the VSLA program to its beneficiaries, but also provides crop production interventions which mostly include food items like Soya beans, Leafy Green Vegetables, and Groundnuts. These crop production interventions are to help provide adequate household food security and dietary diversity. In the first place (**Table 4.1B**), VSLA respondents were interviewed on the types of interventions RING extended to them. In the second place, VSLA respondents were asked to indicate who primarily took the decision on loan taking from VSLA. This





second indicator was based on the idea that women empowerment is noted in the literature as one major factor that contributes positively to household nutrition. It has positive impact on household income, household dietary diversity and especially on under five nutrition. Under the women empowerment indicator therefore, other studies (Carlson *et al.* (1999), Hong *et al.*, 2006), have explored issues including acquisition of land by females, being head of the house, improving on nutrition knowledge, and participating in making decision both at the household and community levels. In the current study however, women empowerment under the VSLA was assessed using decision making on taking personal loans from the VSLA program.

Respondents under the VSLA program were requested to indicate what type of crop intervention they are involved with under the program. They were further asked to state who was responsible for the decision on loan taking from VSLA. **Table 4.2B** gives a summary of the findings.

Table 4.1B: Other characteristics of VSLA respondents

Variable		Percentage (%)
Type of RING crop intervention	Soybean	74.0
	Groundnut	1.9
	Leafy Green Vegetables (LGV)	24.1
Decision on loan taking from VSLA	Myself	100.0
	My Husband	0.0
	Both of us	0.0

Source: Field survey, 2018



Table 4.2 shows that in line with the objective of empowering females to initiate their own decisions on income generating ventures, all women interviewed said they personally took their own decision on accessing VSLA loans. At the practice level therefore, even though individuals may benefit from the experience of other members of society including spouses, group members have demonstrated their ability to become prime-movers and therefore able to take personal decisions as regards their own income generating ventures. This finding must be seen against the background that, among other objectives, the VSLA program is aimed at empowering females to take decisions that affect their lives. One of the issues emphasized during training activities has been autonomy in deciding to take a loan and the sole responsibility to use that loan and be able to refund the loan with interest in time. Invariably in a dominant patriarchal system, this is an important value acquisition and could serve as entry point in self-assertiveness for women.

The objectives of VSLA include enhancing female dignity through advocating that women should be seen as persons with personal goals who possess options for their own livelihood even within marriage. In this wise, the project empowers women to make a step towards enhancing a level of mutual respect and egalitarianism even if seen to be against the sex-role socialization of the marital dyad that makes men sole decision makers.

In this study therefore, efforts were made to understand how married females negotiated this concept within their respective marriages not to incur so much disequilibrium within the family setting. One member of the Jahinfoya VSLA explains her strategy as follows:



Today, it is increasingly difficult for the man alone to shoulder all those family responsibilities. The wife must find something that could bring in money. Already traditionally, the woman must provide some ingredients for preparing food and upkeep of the family. Everything shows – TV, radio, basic family needs, the hardships, and general need for more and more money to keep the family - that today women who work outside the home bring good money contributing to the welfare of the family. The VSLA project helps enterprising women to step out. It is my opportunity to play my roles better. My husband consented to my becoming a member of the VSLA because he has seen the advantages through other families reaping big and able to do bigger things. I started with the group and he has seen the difference not only in money I earn but also things I learn that go to make life better. Now, I am a role model in the society and he is very proud to be associated with my new image (Fati; member of Jahinfoya VSLA)

Among other things, Madam Fati's explanation about her strategy of gaining grounds within the family in relation to space to make the decision of joining the VSLA group suggests it is more a negotiated order than an autonomous decision. In a marital relationship, Fati had to find a way of expressing her aspirations meaningfully to the spouse within the context of her personal desire to be able to contribute more to her own welfare and that of the family. The premise of her quest for some autonomy in decision making is therefore negotiated through aligning her aspirations with her traditional role within the family and pointing out the obvious social current on social media. The

success of the negotiation also seems to depend on the perceived advantage to the husband as a person also and how far the woman's acquired image rubs on the ego of the husband. She explains: *"Now, I am a role model in the society and he is very proud to be associated with my new image"*

Another woman (Madam Memuna) noted that:

My main work has been farming on a small family land. My spouse was aware that getting extra support could make a huge difference. Discussing with him was not difficult at all because it was clear more financial support to invest into my groundnut farm was important to me, and to us. A wife must do something with her life or she becomes a laughing stock to neighbours. When the Chairperson (VSLA) announced that it was a loan taking day, I quickly took advantage of registering into the group and the opportunity to get money to plough my field and to benefit from all the training activities. Getting extra money was good and my spouse was aware that there are strict rules that should be kept safeguarding repayment of loans. That is the point where it turns to be a personal decision – to manage the funds without any other interference so as to pay back in time in order to loan more and more. It is an individual decision, an individual determination to avoid public ridicule of debt.

Again, Madam Memuna had to negotiate with the spouse especially where the husband could not afford the capital she needed for her farm. It is interesting that in negotiating





the new order, Madam Memuna appealed to the very society that hitherto traditionally locked married women in-doors rather than work to earn their own income. She evoked sanctions against idle women by society as an important reason for her quest for space and decision making: *“A wife must do something with her life or she becomes a laughing stock to neighbours.”*

Again, the negotiation creates a situation where the female is to take the lead decision especially because there is the “payback time” that should be fulfilled. The appeal to society again helps to create the necessary autonomy for the woman: *“... my spouse was aware that there are strict rules that should be kept safeguarding repayment of loans.”*

In the case of Madam Memuna, the incentive of repayment of the loan created the supportive aura for the woman to acquire space to perform as individual. The notion is that should the woman who carries the burden of repaying the loan in due time defaults because she was not provided the opportunity to work hard for repayment, the burden of debt incurred would negatively affect the social image of the family: *“That is the point where it turns to be a personal decision – to manage the funds without any other interference so as to pay back in time in order to loan more and more. It is an individual decision, an individual determination to avoid public ridicule of debt...”* Upholding family pride and image has been identified as a driving force for men and family overlooking some hitherto dominant values. Admittedly, rapid social change, the money economy and its concomitant demands on the nuclear family is far reaching. The VSLA program is seen as a bridge that contributes towards enabling families to cope with the new dictates. Despite the cultural hegemony, the incentive to be a progressive family within the society and the quest to win a positive image as ‘enlightened family’ is

apparently becoming a viable influence within this competitive traditional social environment. The appeal by the VSLA program to this sentiment becomes a vehicle for any enterprising female that seeks strategies for empowerment.

4.2 Anthropometry

4.2.1 Anthropometry of Women

One main objective of the study was to investigate the contributions of VSLAs to the nutritional wellbeing of households. In order to provide answers to the research questions, the anthropometry of respondents and their children under 5 years in the VSLA program was compared with that of the sample of women from non-VSLA communities. Table 4.3 gives the summary of the findings of the anthropometry data of women and children in the study area.

Table 4.2.1: Anthropometry between VSLA respondents and Non-VSLA respondents

Variable	VSLA household Mean± SD	Non VSLA household Mean ±SD	Total Mean ±SD	p-value
Household size	7.6 ± 3.5	5.7 ± 1.6	6.9 ± 3.1	<0.001
Women				
Age (years)	34.2 ± 8.9	31.1 ± 7.2	33.1 ± 8.4	0.024
Weight (kg)	57.1 ± 9.5	54.1 ± 7.1	56.4 ± 8.8	0.205



Height (cm)	158.4 ± 6.6	160.9 ± 4.9	159.2 ± 6.2	0.007
BMI (kg/m ²)	22.7 ± 3.3	21.2 ± 2.6	22.2 ± 3.2	0.173
Children				
Age (months)	31.7 ± 18.5	27.7 ± 13.5	30.4 ± 17.0	0.004
Weight (kg)	10.4 ± 3.8	10.5 ± 3.1	10.4 ± 3.6	0.109
Height/Length (cm)	84.4 ± 16.8	82.5 ± 10.9	83.8 ± 15.1	0.065
MUAC (cm)	14.2 ± 1.2	14.2 ± 1.3	14.2 ± 1.2	0.339
Height-for-age (z-score)	-1.2 ± 2.9	-1.4 ± 1.8	-1.3 ± 2.6	0.418
Weight-for-height (z-score)	-1.5 ± 2.2	-0.9 ± 1.4	-1.3 ± 1.9	0.247
Weight-for-age (z-score)	-1.7 ± 1.9	-1.4 ± 1.3	-1.6 ± 1.7	0.773

Source: Field survey, 2018

The Table shows that the average weight of VSLA respondents was 57.1kg as compared with the average weight of the Non VSLA group of 54.1kg. However, on the issue of height, the Non-VSLA respondents had an average height of 160.9cm tall compared with the average height of 158.4cm of the VSLA respondents. The average BMI of the VSLA respondents is 22.7 compared with that of the Non VSLA group (21.2). The results indicated that there was no statistical significance between the BMI of beneficiaries of the VSLA program and the control group, and both groups were within the normal nutrition status category.

4.2.1 Anthropometry of Children

Table 4.2.1 further show results on the anthropometry of children in the study. The above data displays that, the height of under-five children in the VSLA households was 83.8cm while that of the Non VSLA category was 84.4cm which is slightly higher when compared to that of the VSLA households. Furthermore, **Table 4.2.1** shows that the



average upper bound of MUAC for the children (14.2 ± 1.2) was the same for both the VSLA and the Non-VSLA groups. This notwithstanding, the average weight of children in the Non-VSLA group was 10.5kg which was slightly higher weight than that of the VSLA households which was 10.4kg.

Table 4.2.1 furthermore presents results for comparing z-scores on: height-for-age, weight-for-height and weight-for-age for VSLA respondents and that of their counterparts respectively. The findings show that there was no statistically significant difference between the two groups considering the z-scores of the three indices.

On the height-for-age, the average score for the VSLA households was -1.2, compared with -1.4 for the Non-VSLA group. However, the average z-score for the study was -1.3.

For weight-for-height, the Non-VSLA group indicated an average score of -0.9, while that of the VSLA group was -1.5. The average z-score for weight-for-height for all children in the study however was -1.3. The z-score for weight-for-age for the Non-VSLA group was -1.4 while that for VSLA group was -1.7. The average for the study was however -1.6.

4.3 Household Income

Both the Sustainable Development Goal (SDG) 1 and 2 stress the need for striving to end “extreme poverty in all forms” including hunger through achieving food security, improved nutrition and promoting sustainable agriculture. The literature suggests that income, poverty and hunger are directly correlated. Income poverty and unemployment are also very closely linked together, and by default, unemployment and hunger are



correlated. In this study therefore, efforts were made to explore whether the VSLA program has influenced individual incomes and how that affects the access to food and health facilities. Madam Dalabra Laamihi (a 46-year-old woman of Matenya), explains the difference:

Before the VLSA, women were doing their best in their different self-employed ventures. Many women have their personal dreams for economic well-being but if you have no capital, those ideas remain just wishes. That was the predicament of many female contemporaries of mine in this community before. The VSLA brought those women eager to do something better about their lives together in groups and provided loans and counseling services to individuals within the group. This has been the push that made a huge difference in the lives of these women generally. Before VSLA it was difficult to get ready money to subscribe for my Health Insurance or to pay for extra cost for health care for the family. In 2017 for example, I was admitted in the hospital and because we had extra income through working under the VSLA loan scheme, we could pay all my medical bills that were not covered by the insurance. Accessing loans has maximized our ability to improve income and for that matter our ability to access some basic needs compared with previous years when we had no access to loans.

As noted by Madam Dalabra Laamihi, the program has brought advantages in relation to the ability of women to afford some basic needs for themselves and the family. The example of being able to help through financial contributions when family members are





sick is considered a crucial development in customary gender roles. Hitherto, all was left to the man as the head of household and in effect, where he cannot afford, the sick suffered unduly. Sometimes because the man may not be able to afford health insurance for all members of the family, a sick member including children were only sent to traditional healers because of comparative cost.

Madam Dalabra Laamihi's account points to the female spouses' direct contributions thanks to be a member of the VSLA scheme. This positive trend is seen as a very remarkable development in the life of the family.

Now your husband knows you can also do more than just receiving money from him. A woman should be able to afford basic personal needs without having always to account to the husband about what she is going to do about her life (Madam Latifa, 34-year-old member of Bating)

Madam Kofi-Fati - from the non-VSLA group – was aware of the advantages of support programs like VSLA and laments over not having the opportunity to access funding to support her own venture:

My husband and I started a yam farm that has proven to be a viable source of regular income. We have quite a huge fertile family land at our disposal and we are ready and eager to engage in farming yam as a bigger business venture. The demand for yam is huge on the market. Yet we are limited by lack of access to financial support. Apart from having very high interest rates, the banks could be very frustrating not only



because of the intimidating procedures but also because of corrupt officials that seek to exploit the illiterate farmer. How do you even approach the bank without a viable collateral security? This makes access to loans from the bank impossible to the small farmer. For now, my husband and I produce just 300 tubers annually, but we have the capacity to produce at least double of this quantity. The challenge has been accessing the necessary affordable loan that could fit our need. (Kofi-Fati, 24-year-old member of Jahinfoya)

Madam Kofi-Fati's predicament was reechoed by many of the women interviewed from non-VSLA communities generally. The general complaint has been that it is quite difficult for smallholder farmers to access loans from the traditional banks. As noted, among other things, the challenge relates to the perceived tedious bureaucratic process, the high interest rates, getting a viable collateral security to back the loans as well as the human element of fear of extortion by corrupt bank officials. Madam Kofi-Fati is recommending a better avenue for accessing loans that is more conducive to the smallholder farmer, low interest, and with more convenient terms for repayment. Invariably, Madam Kofi-Fati's predicament clearly demonstrates the need for a stopgap for the expediency of the smallholder farmer who wants to sustain her agribusiness. Compared to this situation, interviews with beneficiaries of the VSLA program show how being a member of the group could help the individual access loans without these pitfalls.

Another important research questions this study sought to answer was: What resources do VSLAs provide in support of maternal and child health. The findings indicate that VSLA



provides financial services including opportunity to save and take loans to solve household nutritional and dietary challenges. Members of VSLA can take loan from the group to buy food stuff and ingredients to improve upon household diet. Beyond the financial services VSLAs also provide a social sense of belongingness where members can leverage the resources one another to improve upon their nutrition. Members freely depend on one another's resources such household backyard garden to improve their nutrition freely. This study sought to compare household income of VSLA and that of non-VSLA respondents. This is important because household income is a strong indicator for household food security and household dietary diversity. Women empowerment together with adequate household income has positive impact on household nutrition and food intake.

The findings suggest that all VSLA household respondents indicated that their income was better under the VSLA program compared to previous years they were without VSLA intervention.

VSLA beneficiaries were unanimous that there has been comparatively positive improvement of their household income status because of becoming member of VSLAs. Comparatively however, the results show that for majority of respondents (60.6%) from Non-VSLA households, their income was invariant over the years. It is important to note that even though 18.2% of respondents from the Non-VSLA group indicated their household income increased over the years, about 21.2% of them said their household income status had worsened over the years.

One non-beneficiary of the VSLA compared her fortunes over time with what she perceived to be a far better achievement by a neighbor who is a beneficiary of the VSLA program:

I have been working very hard on my own over the years to accumulate capital with a dream of upscaling to a commercial level. I think I have achieved quite much by myself but not as I wanted. When I compare my achievements over the years with Memuna whose farm is adjacent mine in Zamashegu and whose expansion and current diversity in farming activities marvel all around, I noticed a huge difference. For the past two years, this neighbor benefits from the VSLA program not only financially to engage extra farm-hands, tractors and even acquire fertilizer on time but it is obvious that she has advanced in her knowledge about accessing diverse markets for her produce, good seeds and more radical farm management skills. I have seriously made up my mind to join the program (Adijah, 31-year-old from Matingda)

Adijah's observation gives some more details about inherent advantages in belonging to the VSLA program. Getting a loan from the VSLA program is not only regarded as a better option to traditional Banks but it comes with hidden added advantages. Adijah made other very important observations. She placed the success of Memuna (beneficiary of VSLA program) not just on the financial support but also from social capital that engenders cutting-edge agribusiness strategies derived from the VSLA services. She noted the opportunity for a more scientific agronomic approach and practices. For example, the neighbor associates the comparative advantage of Memuna to the





opportunity for timely access to funds, timely ploughing, more accurate anticipation of planting period, improved seeds and spacing, planting in line, fertilizer applications, weedicide applications and other agronomic practices which are associated with the orientation provided as package of the VSLA program. Another informant, Sala (a non-VSLA farmer) observed further that even though government Extension Officers are designated for each sub-district, their impact on increasing farm yields and general support of the farmer has always remained poor. Sala believes “those blessed to belong to the VSLA target communities have tremendous advantages.” To Sala, the VSLA program has demonstrated a more effective routine monitoring of these Extension officers in their respective designated project communities and therefore they are more likely focused on meeting clearly stated objectives.

One VSLA respondent (Sakina) summarized the comparative benefits accruing to members as follows:

I am happy to be part of this program. Even though my personal efforts and earnings were not bad before I became part of this program, my earnings were quite unpredictable generally at that time. I felt vulnerable especially because of the intermittent nature of the situation. Then the VSLA program came and I signed into the membership. Now I get the necessary counseling services, and all farm necessities that I need to make my business better. I think the program has brought a lot of knowledge, enlightenment and improved farm practices generally (Abubakari Sakina, 37-year-old member of Zamashegu)

Sakina's experience is that since the VSLA groups are not-for-profit unions, they share revolving funds in the form of better interest rates. VSLA groups tend to have lower rates on personal loans compared to the traditional retail banks generally.

A chi-square test between VSLA status and Income revealed that being a beneficiary of the VSLA program was associated with better Income compared with the other counterpart [$p < 0.001$] (**Table 4.3**).

Comparatively, the VSLA program clearly increases the income of beneficiaries compared with non-beneficiaries. It has made extra money available for beneficiaries to increase their produce. The program further helps to reduce post-harvest losses and connect beneficiaries to good market. This greatly improves the income of beneficiaries.

Table 4.3: Household income between the two groups

Variable		VSLA household (%) (N=150)	Non-VSLA household (%) (N=150)
Income compared to last year	Better	100.0	18.2
	Same	0.0	60.6
	Worse	0.0	21.2
p<0.001			

Source: Field survey, 2018

4.4 Household Dietary Diversity Score

Household dietary diversity is defined for this study as the number of unique foods consumed by household members over a given period. By this indirect indicator of quality and quantity of diet, this study seeks to measure household food access. The



household dietary diversity score (HDDS) is meant to reflect, in a snapshot, the economic ability of a household to access a variety of foods. Individual dietary diversity scores aim to reflect nutrient adequacy.

On household dietary diversity score, both the VSLA and the Non-VSLA households were interviewed on 12 local food items they are very familiar with. From **Table 4.4A**, the average intake from the twelve (12) food items on the dietary diversity score for this study was 6, and the dietary diversity for VSLA group was significantly higher with 6.5 which was approximately 7 food items than that for Non-VSLA group with 5 food items.

The food items consumed most in the study area were Vegetables, Grains/Cereals, Fish. All respondents said they consumed vegetables, 98.1% consumed Grains/Cereals and 95.1% consumed Fish. Both groups said they ate vegetables within the past 24 hours. Some women reacted to the increased intake of these foods and indicated:

Vegetables are used for soups and stews for all the foods we prepare at home. Some of the staple green vegetables here in our community are bra, ayoyo and alefo. Other vegetables include tomatoes, okro, onion and pepper. Rice, maize, millet and sorghums are the most eaten grains and cereals in this community. For fish, it is fish powder that is mostly eaten. I occasionally buy fresh fish from cold stores and smoked fish from the market. (Nanpoche Alhassan, 46-year-old member of Bating, VSLA beneficiary).

We eat tuozaafi everyday with dry okro and bra stew or soup prepared with fish powder as base. We are used to eating that every day. That is



what my husband and I have been eating since childhood. We don't eat fresh fish because there is no cold store in this community. Market is not always available so for smoked fish too we do not get to buy. (David Felicia, 28-year-old member of Matingda, Non-VSLA beneficiary)

A trader who eat fresh and smoked fish had this to say:

At home we do eat tuozaafi every day, but we do not eat with only powdered pepper but also with fresh or smoked fish. I am a trader and for this reason, I mostly go to market during the market days in Gushegu or nearby towns and communities or even far away Tamale each week. Because there are many foodstuffs available in the market, I often buy fresh or smoked fish for food. (Mohammed Awabu, 34-year member of Matenya, VSLA beneficiary)

These foods are staples which are widely eaten in the study area because they are greatly available and affordable. They mostly form the bulk of meals in these communities and the poor and the rich can afford them. However, respondents were quick in pointing out that protein is sometimes a major challenge depending on the season. Fresh and smoked fish is less or not always available as one woman mentioned, and it is only available during major market days or when there is a well-stocked market in the community. Affordability is another issue in one community where there is cold store. VSLA members have an opportunity to leverage the financial services of the group to improve their purchasing power at this cold store. The VSLAs that are also MTMSG have an added advantage because the nutrition component of the RING intervention provides education on infant and young child feeding (IYCF). The VSLAs are exposed to best





complementary feeding practices on plant protein rather than relying on animal protein which is readily available. Breast feeding Mothers have been taken through food fortification using soya which is widely produced in the area. These opportunities may not be available in non VSLA communities.

The food items less consumed were eggs (4.9%), Milk and Milk Products (11.7%), and Pulses/Legumes (19.4%).

Respondents explain however that despite the abundance of domesticated fowls (guinea fowls/chicken) and especially the eggs of domestic fowls, it is not customary to consume this at the household level. When asked why the strong avoidance of the consumption of eggs and fowls, Madam Saantu explains the situation as follows:

Egg of domestic fowls is generously available and accessible even to the poorest of the poor in any of our communities. Every household keeps domestic fowls in abundance. From our ancestry however, no one is allowed to eat eggs. There is a very strong connect that if the child is fed on eggs, he/she develops thievery. From childhood therefore, members were taught to abhor consumption of eggs. Eggs are never a component of our household food items and a family could not easily deviate from this norm. We produce a lot of fowls and eggs, but we only sell to the cities.

(Yakubu Saantu, 25 years of Matingda, Non-VSLA beneficiary)

Madam Saantu's explanation of the historical reasons for non-consumption of eggs and fowls which are very abundant and accessible to all households in both VLSA and non-VSLA communities meant that the cheapest and most available/accessible viable protein

sources in these localities was cut off since generations. Health facilities have over the years been trying to bring health education to change the situation around but have virtually failed.

Antenatal clinics have tried to encourage families and especially pregnant women and their children to take advantage of the abundance of eggs and fowls to improve the quality of food eaten. But no family is bold enough to break this very old tradition. (Abdulai Barikisu, 22-year-old member of Matingda, Non-VSLA beneficiary)

Barikisu's observation is a common opinion of the populace generally. Given that VSLA seeks to bring about social change and to improve access and consumption of food items to facilitate dietary diversity and quality nutrition, the concern for this study was to find out how VSLA program contributes alternatives to the situation.

As shown already, the household dietary diversity score shows that VSLA group was significantly higher with 6.5 which were approximately 7 food items than that for Non-VSLA group with 5 food items. How did the VSLA program manage the situation? Madam Alima (a beneficiary of the VSLA program) explains the essence of a more focused in-depth discussion on the subject.

Since the inception of the VSLA program, discussion on quality food for the family was one of the important concerns for education of group members. Among other things, making people discuss eggs as important in the family diet is one issue the program has battled and battled with. Now



it seems at least VSLA members are making that difference (Alima Aziz, 28-year-old member of Koblisung, VSLA beneficiary).

Alima`s observation demonstrates the trajectory of VSLA program in its efforts towards enforcing some positive social change within the family. Such an approach, she explains, has proven to be comparatively better in enhancing knowledge, changing attitudes and engendering positive practices in relation to new values that promote the rethinking on some cultural tenets like the consumption of fowls and eggs. For Madam Alima, it is the approach to health education (in-depth discussions rather than lectures per se) provided by VSLA program that is making positive inroads in project communities unlike the limited approach of Ghana Health Service facilities. In this sense, VSLA program members serve as innovators. Some members said now they could have variety of egg sauce especially for children. Cecelia explains:

Though egg was customarily forbidden to eat in this community, it is now being considered as a staple food because of education for our support groups under the VSLA. Children especially now have ready rich food easily. This child of mine who is three years old started eating egg when she was a year and two months old. We are told it is very nutritious for everyone. Certainly, the has helped to change our mind towards the eating of eggs (Cecelia, 45-year-old member of Bating, VSLA beneficiary).

A similar revolution is identified with local fresh milk gradually becoming a staple in especially VSLA communities. The findings suggest that before the introduction of VSLA program, consumption of fresh milk products was frowned upon and therefore



despite the fact of abundance, its use to enhance diversity of the diet in the locality was very limited.

On legumes and nuts one woman made a very remarkable statement:

I benefit from the crop intervention module of the VSLA program and I grow groundnut and soya beans. Before the VSLA program, crops like soya beans were only for cash. It is not our staple. Neither did I know of its value nor how to prepare its diets. Things have changed with food preparation demonstrations under the VSLA program. Women now have the capacity to diversify family diets. This has certainly helped the family to afford sustenance for especially the children because soya beans are readily available and accessible and offers a variety of diets that are rich and delicious (Azindo Naakoi, 38 year old member of Jahinfoya, VSLA beneficiary).

Affordability, availability and cultural beliefs seem to be the main reasons why some foods, though very rich in nutrients are less eaten. Education through discussions and food demonstrations as well as increased income engendered through the VSLA program has contributed to changing people's attitude towards consumption of these foods especially in most VSLA beneficiary communities.

From **Table 4.4A**, VSLA group ate more food items compared with non-VSLA group. They were nine (9) food items including Grains and Cereals, Root and Tubers, Eggs, Fish, Pulses and Legumes, Milk and Milk Products, Oils/Fats, Sugar/Honey and the Miscellaneous foods. The non-VSLA group ate two (2) food items more than VSLA



group and these food items were Fruits, and Meat/Poultry/Offal. Intakes of Vegetable food items were same for both groups. See **Appendix III** and **IV** for more on food item intake for both groups.

Mangoes were gradually going off-season during the study period. Non-VSLA beneficiaries ate more of fruits comparatively because mangoes were more available in these communities.

As shown in Table 4.4A, the t-testing conducted showed a significant relationship between the participation of VSLAs members and the consumption of a particular type of food (p-value <0.001).

Majority of VSLA respondents performed better in the consumption of most of the food items considered in the study. It was found that 100% and 94.1% of VSLA and non-VSLA respondents respectively consumed grains and cereals and shows a significant association (p-value = 0.042). Similarly, the consumption of roots and tubers, fruits, pulses/legumes/nuts and oils/fats between the two groups respectively stood at [(72.5% & 11.8%; $p < 0.001$), (50.7% & 79.4%; $p = 0.005$), (27.5% & 2.9%; $p = 0.003$) and (47.8% & 2.9%; $p < 0.001$)].

However, one would realise that respondents of the non-VSLA backgrounds performed better in the consumption of fruits with a significant association ($p = 0.005$). This is an indication that the non VSLA household resort to eating fruits (shea fruits, dawadawa and ebony) during the lean season due to low cash trap.





Table 4.4A: Dietary diversity between VSLA respondents and non-VSLA respondents

Food Groups	VSLA respondents (N=150)	Non VSLA respondents (N=150)	Total (N=300)	p-value
	Percentage (%)	Percentage (%)	Percentage (%)	
Grains and Cereals	100.0	94.1	98.1	0.042
Root and Tubers	72.5	11.8	52.4	<0.001
Vegetables	100.0	100.0	100.0	
Fruits	50.7	79.4	60.2	0.005
Meat, Poultry, Offal	26.1	29.4	27.2	0.721
Eggs	7.2	0.0	4.9	0.108
Fish and Sea Foods	95.7	94.1	95.1	0.733
Pulses/Legumes/Nuts	27.5	2.9	19.4	0.003
Milk and Milk Products	13.0	8.8	11.7	0.530
Oil/Fats	47.8	2.9	33.0	<0.001
Sugar/Honey	71.0	76.5	72.8	0.558
Miscellaneous	33.3	2.9	23.3	0.001

Source: Field survey, 2018

The results displayed in Table 4.4B below shows a statistical test of significance between dietary diversity score and respondent's participation in VSLA and non-VSLA status. The results revealed that being a beneficiary of the VSLA program was associated with better dietary diversity score compared with VSLA non-beneficiary counterparts [$t = 4.9$, $df = 101$, $p < 0.001$].



Table 4.4B: t-test analysis of Dietary Diversity Total Score between VSLA and non-VSLA households

Group Statistics									
				N	Mean	Std. Deviation		Std. Error Mean	
VSLA Status									
Dietary Diversity Total Score				69	6.45	1.586		0.191	
Yes				34	5.03	0.797		0.137	
No									
Independent Samples Test									
Dietary Diversity Total Score	Levene's Test for Equality of Variances				t-test for Equality of Means				
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	24.20	0.00	4.91	101.00	0.00	1.42	0.29	0.85	1.99
Equal variances not			6.05	100.93	0.00	1.42	0.24	0.95	1.89

assumed

Source: Field survey, 2018

4.5 Association between VSLA status and Nutritional status of mothers and children

4.5.1 Association between VSLA status and Nutritional status of mothers

To examine the effect of VSLA on the nutritional wellbeing of mothers and children, anthropometric data was collected from both VSLA households and Non-VSLA household's respondents. Table 4.5.1 shows that 2.9% women from both groups were thin. There is therefore no difference in the thinness level between the VSLA women and the Non VSLA members. The findings also disclosed that majority of the VSLA women (75.4%) were of normal weight, 20.3% were overweight, and 1.4% found to be obese. For the Non-VSLA members on the other hand, 85.3% were normal, 11.8% were overweight and none was obese.

A chi-square test of association between mothers' participation in VSLA and their nutritional status showed no statistically significant association between VSLA group and Non-VSLA group [$X^2 = 3.417$, $p = 0.636$]. This indicates that even though the VSLA group might have economic power and other resources, the changes it brings in the nutritional status of women in the group was not different from the Non-VSLA group.

On the issue of mothers' nutritional status, some respondents indicated that their income has increased since belonging to the VSLA group and that has helped the household in





diverse ways in food security. Madam Namonga a member of the VSLA program explains her experiences:

Since I joined the program, my income has improved, and I can at least afford some necessities, buy variety of food stuff that I could not afford previously for my household. Before that, things were comparatively difficult. I can see that I have grown a little plumper than I was. I used to be very slim (Iddrisu Namonga, 31-year-old member of Zamashegu, VSLA beneficiary).

For Madam Namonga, the opinion is that the VSLA intervention has profound positive effect on her personal and the household nutritional well-being. A critical look at her view denotes the cultural tenet of well-being; *`I can see that I have grown a little plumper than I was. I used to be very slim`*. Even though Madam Namonga was found to be of normal weight, her expression connotes the cultural expectation that *`plumpness`* signifies *`good living`*. She associates the VSLA intervention with fostering *`good living`* which to her implies a good measure of food security.

But some VSLA beneficiaries saw the support of the program from another angle. Madam Zenab said she came to the program hoping to reduce weight. She was obese and associated obesity to idleness and psychological torture when individuals are jobless and are unable to meet their basic needs. Madam Zenab found the VSLA program invigorating and brought a difference in her life:

I was overweight and had tried so hard to lose weight. I had nothing to do for a living then and I was a worried person. But then I joined the VSLA



program and started farming as part of their crop intervention. Among other things, for me, farming is not only an opportunity for exercise, but the mood and feeling that you have something to commit to is good. That has positively affected me and good to my health generally, something to live for, a vocation and a profitable one too. I have lost some weight and I like this current state. My income too is better and now I have choices at least for what I eat and can control the type of food. It has been helpful joining this program (Banankpen Biduu Zenab, 30-year-old from Jahinfoya, VSLA beneficiary).

Contrary to these positive opinions, Madam Sikeina, a non-VSLA beneficiary, comments on challenges that make life quite difficult. As regards food security for the individual mother she laments:

Look at me; eh... (She turns around in a beauty-pageant-fashion to make an impression on the interviewer) just look... life is more and more difficult. I wish I could put on a little more weight than the way I am now. The unfortunate thing is that I know the right kind of food I should be eating but I do not have the purchasing power. Of course, everyone desires better living for herself but if you cannot afford then you have to ... as they say ... sew your coat according to your size (Yidana Sikeina, 23, year member of Matindang, Non-VSLA beneficiary).

Madam Sikeina observes that having knowledge about nutritional food that is crucial for the individual may not mean much if this knowledge is untranslatable into practice



because of poor affordability. Madam Sikeina's personal obstruction is well expressed in her admonition: *'sew your coat according to your size'*. There is the undercurrent that even though she has good knowledge of appropriate nutrition, she lacks the wherewithal and feels helpless in practicing what she knows. The findings suggest that VSLA beneficiaries were more informed on the appropriate nutrition and hygiene practices and may have relatively better opportunity to practice acquired knowledge.

Findings also suggest that the latent function of becoming a member of the VSLA program, among other things, is the opportunity for a wider social capital and the feeling of belongingness. Apart from sharing aspirations with the collection of likeminded colleagues, informants are of the view that the VSLA program fosters the fertilization of ideas and empowering individuals on even other social issues. Members noted for example that the VSLA program fosters healthy relationship with members. On the other hand, however, even though the findings suggest that a chi-square test of association between mothers' participation in VSLA and their nutritional status showed no statistically significant association between VSLA group and Non-VSLA group, informants generally agree there are many other advantages of being a VSLA member. It is hoped that subsequent program activities of intervention would show more glaring positive results on nutritional status of beneficiaries as expressed by program objectives.

Table 4.5.1: Nutritional status of mothers of VSLA and those with non-VSLA backgrounds

Status	VSLA household (%) (N=150)	Non-VSLA household (%) (N=150)	Total (%) (N=300)
Women			

Thinness	2.9	2.9	2.9
Normal	75.4	85.3	78.6
Overweight	20.3	11.8	17.4
Obese	1.4	0.0	1.0
Chi-square; $X^2= 3.417$, $p=0.636$			

Source: Field survey, 2018

4.5.2 Association between VSLA status and Nutritional status of children under-five years

4.5.2.1 Association between VSLA status and Stunting

Stunting reflects failure to receive adequate nutrition over a long period and is associated with recurrent and chronic illness. The results displayed in **Table 4.5.2** below captures the stunting status of children under 5 years in the research area. The results showed that majority (76%) of children in the VSLA household were found to be of normal nutritional status, with 22.2% moderately stunted (Below -2D) and 1.6% said to be severely stunted (-3D). For the Non-VSLA category, 61.3% were found to be normal, 25.8% moderately stunted (Below -2D), while 12.9% were severely stunted (-3D).

In general, a chi-square test of association between child's background in terms of mother being VSLA or non-VSLA, and stunting, showed no statistically significant association [$X^2 = 5.763$, $p = 0.056$] as shown in **Table 4.5.2**. This implies that prevalence of stunting in children from VSLA background was not different from those from non-VSLA background. For this reason, being part of the VSLA program did not considerably help reduce stunting.

Madam Majuoba, a VSLA beneficiary from the Jahinfoya community, gives her opinion about the effect of VSLA program on her children.





My first and second children have been falling sick frequently since birth. At the time I gave birth to them, I was not part of the program. I had my third child last year when I had enrolled on the program and I must admit that this child's health is comparatively better than the first two. No frequent sickness and she look stronger and plumper than they were during their childhood days. The improved knowledge and practices, increased income and access to variable foods under this program I think made the difference. (Gundana Majuoba, 30-year-old member of Jahinfoya, VSLA beneficiary)

Madam Majuoba has reasons to compare at her own level the difference between her children's health prior to her becoming a member of the VSLA program and now that she is a member. She thinks that this income generating activity (VSLA) membership has a comparatively encouraging outcome on children's nutritional status and health. Yet another mother under the program recounted her experience as follows:

My child is taller and looks better than his age mates. He is even the most brilliant boy in school (Banankpen Biduu Zenab, 30-year-old member of Jahinfoya, VSLA beneficiary)

The general impression gleaned from these opinions is that, even though statistically there is no significant difference between VSLA membership and non-membership by stunting of the child, there is a high level of satisfaction of mothers based on their prior knowledge of the situation in study area. The issues of stunting is quite high in the northern region of Ghana.

4.5.2.2 Effects of VSLA on Wasting

Table 4.5.2 presents results on the status of children under 5 years on wasting in the study. The weight-for-height index gives information about children's recent experience with food intake. Wasting represents failure to receive adequate nutrition in the period immediately preceding the study. It may be as result of recent illness or of seasonal variations of food. It may also be as a result of inadequate food intake causing loss of weight and the onset of malnutrition.

In this study children were measured on weight-for-height index. The results indicated that more children were normal among the VSLA group representing 84.8% compared with 76.5% among the Non-VSLA group. For moderate and severe wasting, the prevalence was sophisticated in the Non-VSLA cluster compared with the VSLA cluster. Also, about 15% of children in the Non-VSLA group were severely wasting, while 3% of children in the VSLA category were severely wasting. In addition, 4.5% of children in the VSLA group were moderate wasting, compared with 8.8% in the VSLA group. The finding that children from non-VSLA are more likely to score higher figures on both severely and moderately wasting suggests that children from VSLA households were comparatively more likely to be receiving adequate nutrition in the period preceding the study or the situation may be due to recent illness for children of non-VSLAs. The impression is that children of VSLA members exhibit comparatively better health than children of non-VSLA members. However, the chi-square test of association between VSLA status and wasting shown in Table 4.5.2 below revealed that VSLA status had no statistically strong association with Wasting. [$\chi^2 = (2, 300) = 1.191, p=0.551$]. This implies that prevalence of wasting in children from VSLA background was not different



from those from non-VSLA background. For this reason, being part of the VSLA program did not considerably help reduce wasting.

Even though there is no statistically strong association with Wasting between the two cohorts, it is important to explain that one of the latent functions of the VSLA program, as explained already, has been the approach to educating mothers. Again, lectures on child welfare may be given at the health facilities generally, but VSLA program beneficiaries are comparatively emphatic about the advantage of one-to-one as well as group discussions at meetings that have become a useful source of knowledge that helps them in their upkeep of children. Compared with this dependable source of knowledge, even though lectures are given at the health facility level, some non-VSLA members lack the knowledge for promoting the health of their children generally. The story of Safia, a non-VSLA beneficiary from Matindang, gives the overview of the situation.

Some few days ago the community health nurse in the CHIP Compound followed my 4-year-old boy to the house and indicated she wanted to have a conversation with me privately. It was about the health of my child. At a school health education program, my child was found to be unhealthy after measuring his weight for height. I had noticed for some time back that my child had been growing lean and I did not know what to do about it. The nurse then educated me on the food I should provide to my child so that he could grow well. Certainly, I had been going through a lot of stress with this child especially the frequent sicknesses. Now, with that education, things are far better now (Safia Koyaja, 32-year member of Matindang, non-VSLA beneficiary).



Clearly as Safia (a non-VSLA member) noted, one-to-one encounters with service providers is a very important approach in helping rural families to have adequate knowledge about what is best for their children. Unfortunately, this exercise is hardly a regular one especially in the rural setting. As reported by informants, the advantage of VSLA approach is that group members watch over each other. This offers a supportive system focusing not only on income and well-being but also on the health of households through regular home visits for health purposes.

4.5.2.3 Effects of VSLA on Underweight

Table 4.5.2 also captures the underweight status among children under 5 years in the study area. Underweight considers both acute and chronic malnutrition. The results indicated that 72.7% of children in the VSLA category were normal, 24.2% moderately (-2D) underweight and 3% severely underweight (-3D). For the Non VSLA category, 70.6% were normal, 4.7% (-2D) were moderately underweight and 14.7% (-3D) severely underweight. Children whose weight-for-age is below minus two standard deviations (-2 SD) from the median of the reference population are considered underweight. The measure reflects the effects of both acute and chronic malnutrition. This is indicative non-VSLA households have higher proportions of children for both moderately to severe underweight. A chi-square test of association between VSLA status and Underweight shown in Table 4.5.2 below had VSLA status showing no statistically significant association with Underweight. [$X^2 = 5.356$, $p=0.069$] (Table 4.7). This implies that prevalence of underweight in children from VSLA background was not different from those from non-VSLA background. For this reason, being part of the VSLA program did not considerably help reduce underweight.





Table 4.5.2: Nutritional status of children in VSLA and non-VSLA households

Status	VSLA household (%) (N=150)	Non-VSLA household (%) (N=150)	Total (%) (N=300)
<i>Stunting</i>			
Severe Stunting	1.6	12.9	5.3
Moderate Stunting	22.2	25.8	23.4
Normal	76.2	61.3	71.3
Chi-square; $X^2 = (2, 300) = 5.763, p=0.056$			
<i>Wasting</i>			
Severe Wasting	4.5	8.8	6.0
Moderate Wasting	10.6	14.7	12.0
Normal	84.8	76.5	82.0
Chi-square; $X^2 = 1.191, p=0.551$			
<i>Underweight</i>			
Severe Underweight	3.0	14.7	7.0
Moderate Underweight	24.2	14.7	21.0
Normal	72.7	70.6	72.0
Chi-square; $X^2 = 5.356, p=0.069$			

Source: Field survey, 2018

A critical look suggests that women in VSLA communities are comparatively more able to use peer pressure in ensuring that families begin to use nutritional knowledge acquired during meetings in appropriate food choices and practices. The idea that VSLAs are also mother to mother support groups where their additional education on infant and young child feeding practices are discussed during meetings. This predisposes the VSLA

members to make better informed nutritional choices. Generally, during child welfare clinics the issue the community based well-baby contest also provides some level of competition and incentive for all family members to be concerned about what they eat.

CHAPTER FIVE

DISCUSSIONS

1.0 Introduction

The chapter presents the main findings and relates with available relevant literature. It included all the main variables of the study, namely; socio-demographic characteristics, nutritional status indicators, dietary diversity and effects of VSLA.

5.1 Decision making on taking loans as farmers

In line with the objective of the VSLA program to empower females to initiate their own decisions on income generating ventures, all women interviewed said they personally took their own decision on accessing VSLA loans. This might be as direct consequence of the financial education that all VSLA members are taken through as an empowering tool that helps VSLA members-built asserts. This development is an improvement over the baseline report which indicated the women usually depended on their husbands for almost everything including decisions on taking loans to support initiatives of the household.

According to the beneficiary base survey report by GC RING indicates that majority of household types present in the study area, are male and female headed households. The findings indicate that when there are two or more adults responsible for the livelihood of



all household members, the decision-making process concerning household funds may be shared. The findings show that the decision to take out a loan from the VSLA, the largest number of respondents (73% female beneficiaries) indicated that they alone were responsible for deciding the time and quantity of the loan to be taken, followed by 22% of respondents that stated it was a bilateral decision between husband and spouse.

Apart from that, respondents under VSLA program also said they diversified their cropping from just Groundnuts and Leafy Green Vegetables to include a Soya bean crop intervention which hitherto was a preserve and cash crop for male farmers. The diversification into cash cropping is perceived by the society as a new development with far reaching positive effects on the well-being of female farmers. This finding is similar to GC RING's project midterm evaluation report which indicates that VSLA women diversify their incomes into cash crop farming such Soya and groundnut farming. This is partly because the cultivation of these groups does not require the use of fertilizers.

5.2 Household Income

This study realized that the RING VSLA program in the district helped in household income where all VSLA respondents said their income was better compared to the previous year. Even though few Non-VSLA respondents (18.2%) said their income from farming had improved from the previous year, compared with the VSLA program there is evidence that the later enjoys a comparatively better opportunity. The relationship between VSLA and household income was found to be statistically significant ($X^2=$



79.827, $p < 0.001$). This finding is in consonance with Abdulai *et al.* (2014) who found that 89.8% and 24.1% VSLA and non-VSLA families mentioned that their income was better respectively. Other researchers had a similar position, with the conclusion that livelihood support like microfinance intervention programs that provide financial credits to beneficiaries increases their annual household income (Barnes *et al.*, 2002; Pronyk *et al.*, 2007).

Furthermore, Dunn and Arbuckle (2001), concluded that members who participated in microfinance in Lima, Peru have more than half percent higher income than non-participants. This finding corresponds to MkNelly and Dunford (1999) who indicated that most participants (67 percent) of the CRECER Credit with Education Program in Bolivia feel that their incomes have ‘increased’ or ‘increased greatly’ since they joined the program. Additionally, MkNelly and Dunford found in their research that clients of Lower Pra Rural Bank Credit with Education Program in Ghana have increased their incomes by \$36 compared to \$18 for non-clients. These findings are indicating that VSLA intervention either as a development tool or economic activity has the potency of helping beneficiaries to grow their income and graduate from the poverty line if managed very well. This finding also agrees with GC RING field report which indicated that 47% of VSLA share out funds was used for business and other profit-making events, with the outstanding 53% capitalized in education, healthcare and some farming events, just to mention but a few. The GC RING’s field report continued to show that females in susceptible families have access to financial opportunities and loans to meet their persistent family food and income desires, especially to cushion the shocks experienced by vulnerable households during that period, which is well noted as the lean season.



VSLAs that are yet to reach the end of the savings cycle (10-11/12 months) to be qualified for graduation (share-out) also practice participants' borrowing VSLA funds to purchase food stuff, participate in profits making doings (sale of: ingredients, cooked food, LVGs etc.), education and health needs of their families. These opportunities available for VSLA members are generally not available for non VSLA beneficiaries, making the VSLAs a more economically stable group.

This confirms the findings of this study on income diversification among VSLA beneficiaries which is a necessary condition for financial stability.

5.3 Household Dietary Diversity

The study revealed that the household dietary diversity of VSLA respondents is better than Non-VSLA respondents. The VSLA household scored an average of 7 out of the 12 food items on the table while the non VSLA households scored an average of 5. More VSLA households ate foods from Grains and Cereals, Root and Tubers, Eggs, Fish, Pulses and Legumes, Milk and Milk Products, Oils/Fats, Sugar/Honey and the miscellaneous foods than their counterpart. Non-VSLA households ate from Fruits, and Meat/Poultry/Offal. Both groups ate Vegetables equally as the staple in the locality. The finding of this study is in consonance with Abdulai et al. (2014) whose findings revealed that the VSLA program contributed much to the food intake pattern of households. He reported that all VSLA respondents attested to the fact that the program has helped with their dietary intake pattern against 14.4% of the Non-VSLA group. Buttressing the position of this study and that of Abdulai *et al.*, Barnes' (2001) study in Zimbabwe intimated that taking part in microfinance program had impact on the frequency and the quality of food eaten especially the consumption of protein foods especially soya beans,



egg, meat, milk, fish, etc. Similarly, Carlson *et al.* (1999) revealed that the occurrence and severity of food insecurity rise as household revenues decline, pointing out that a sound financial situation of a household could guarantee food security thereby allowing for dietary diversity within the household.

5.4 Association between VSLA status and Nutritional status of mothers and children

5.4.1 Association between VSLA status and Nutritional status of mothers

The association between VSLA status of mothers and their nutritional status in this study was found not to be statistically significant ($X^2 = 3.417$, $p = 0.636$). This could be because of a shared characteristic(s) among the VSLA and Non-VSLA groups such as their occupation which is farming which affects the time and quality of care for themselves and their children. UNICEF report in 2011 mentioned that agriculture poses threats to household nutrition, particularly when women must work overtime and in places that affect the feeding of their infants and young children and even themselves (UNICEF, 2011).

5.4.2 Association between VSLA status and Nutritional status of children under 5

The general finding of this study reveals that the relationship between the VSLA status of a mother and the nutritional status (stunting, wasting and underweight) of her child was respectively found not to be statistically significant [$(X^2 = 5.763, p=0.056)$; $(X^2 = 1.191, p=0.551)$; $(X^2 = 5.356, p=0.069)$] and that the program did not have any impact on the nutritional status on children under 5. Uthman's study in 2007 found that the prevalence of stunting and underweight increased as the household wealth status increased, with the



overall concentration indices for stunting, underweight and wasting respectively being - 0.14 (95% CI: -0.16 to -0.12; $p = 0.001$), -0.15 (95% CI: -0.18 to -0.12; $p = 0.001$), and - 0.06 (95% CI: -0.17 to 0.04; $p = 0.067$). The general finding of this study agrees with that of Uthman's study.

On the contrary, most studies including Abdulai *et al.*, (2014) and Hong *et al.*, (2006) reveals significant association between VSLA status and childhood nutrition and that VSLA package has huge helpful effect on households' nutritional status.

The finding of this study does not agree with that of Abdulai *et al.*, (2014) and Hong *et al.*, (2006) probably because of some common characteristics like their occupation and education level among the two groups. This agrees with UNICEF's report in 2011 that mentioned that agriculture poses threats to household nutrition, particularly when women have to work overtime and in places that affect the feeding of their infants and young children and even themselves (UNICEF, 2011).



CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the summary of findings, conclusion and recommendations of the study.

6.1 Summary of findings

Among other things, findings show that the VSLA program has financial and social capitals as the main resources that it provides to maternal and child health. The financial capital is the money used to help pay for the acquisition of nutritious foods and payment for improve health services, equipment (VSLA kit box) and other terms needed to build the products (VSLA) or offer services. The financial resources of VSLA include the savings opportunity, loan opportunity, grants from the social fund and share out funds. The Social capital on the other hand is a form of economic and cultural capital in which social networks (VSLA or group) are central; transactions are marked by reciprocity, trust and cooperation; and market agents produce goods and services not mainly for themselves, but for a common good. On the other the social capitals comprise the social platform that is leveraged for the Mother-to-mother support program and the intangible sense of belongingness it brings to members. The relationship between VSLA and household income was found to be statistically significant ($p < 0.001$). The VSLA intervention has also contributed enormously to improve household income and dietary diversity of the beneficiaries.





The findings from the study also indicates that VSLAs contributes to the household feeding and dietary diversity of the rural mother and the child through the provision of the financial and social resources to the members. The rural woman through VSLA has the opportunity to access credit either through loans, grants or share out funds which she uses to majorly diversify household meals. This study revealed that the household dietary diversity of VSLA respondents is better than Non-VSLA respondents. The VSLA household scored 7 out of the 12 food items on the table while the non VSLA households scored 5 food items.

Finally, the findings of the study indicate that there is no statistically significant relationship between the resources of VSLA and improvement of nutritional status of mothers ($X^2 = 3.417$, $p = 0.636$) and children under five [Stunting ($X^2 = 5.763$, $p=0.056$); Wasting ($X^2 = 1.191$, $p=0.551$); Underweight ($X^2 = 5.356$, $p=0.069$)]. The introduction of the VSLA program by USAID's RING in Gushegu has contributed to household income and dietary diversity but has not contributed to the reduction of the prevalence of malnutrition especially stunting among children under-five years in the district probably because of common characteristics between the two groups including their occupation.

6.1 Conclusion

In conclusion, it is important to reiterate that VSLA has financial and social capitals as the main resources that it provides to the cause of maternal and child health. The association between VSLA and household income was found to be statistically significant ($p<0.001$). It also brings with its financial resources including the savings, loan opportunity and share-out-funds which the beneficiaries say have helped them tremendously. The social capital comprises the sense of belongingness and the support

they lent to one another in times of need. The mother to mother support program leverages the VSLA platform for nutrition sensitive education.

VSLAs also contribute to household feeding and dietary diversity of rural mother and child through the provision of the financial and social resources to the members. The rural woman through VSLA can access credit either through loans, grants or share out funds which she uses to majorly diversify household meals.

The study did not find a statistically significant relationship to exist between the resources of VSLA and improvement of nutritional status of children under-five years. It could therefore be concluded that the introduction of the VSLA program by USAID's RING in Gushegu has contributed to improved household income and household dietary diversity but has not helped in the reduction of the prevalence of malnutrition especially stunting among children under-five years in the district.

6.2 Recommendations

Based on the finding of this study, these recommendations are made:

- The VSLA programme should be scaled-up to cover all communities in the Gushegu district, especially to less income households or communities.
- Nutrition education and promotion should be intensified or strategized during mother-to-mother support groups
- All programmes under the VSLA should be reinforced by RING and other NGOs to bring about behavioral change especially towards the intake of fruits, egg, meat/poultry and milk and milk products.



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APPENDICES

Appendix I: Questionnaire

Questionnaire

Good morning/afternoon/evening. My name is Akapule Gifty, a student at University for Development Studies (UDS) conducting a study on the topic “**Assessing the Effects of Village Savings & Loans Associations (VSLA) On Maternal and Child Nutrition In Gushegu District Of Northern Region, Ghana**”.

This questionnaire is going to be used solely to collect data on women (doing VSLA) and their children U-5. All information provided will be kept confidential. Please feel free to answer the questions. However, you can opt out if you so desire at any time during the survey.

This interview usually takes between 10 and 20 minutes to complete. I hope you will participate fully in the exercise since your views are important.

COMMUNITY Control Group	CODE		Experimental	Group
C1_____	_____	1.E1 _____	_____	6.
C2_____	_____	2. E2 _____	_____	7.
_____	_____	3. E3 _____	_____	8. C3
C4_____	_____	4.E4 _____	_____	9.
_____	_____	5. E5 _____	_____	10.C5



SECTION A: SOCIODEMOGRAPHIC CHARACTERISTICS

Name of HH members? [START WITH THE MAIN RESPONDENT (RING BENEFICIARY) CONTINUE WITH SECONDARY RESPONDENT, IF APPLICABLE, AND OTHER MEMBERS]			Sex 1 = M 2 = F	Household size	What is [NAME's] marital status? 1 = Yes 2 = No	What is the highest-grade education completed by [NAME]? in number.
Su r n a m e	First Name	Popular Name				
A3	A4	A5	A6	A7	A8	A9

RING HOUSEHOLD HEAD DETAILS		
A1	What is the ethnicity of the Household Head?	1. Akan 2. Dagomba 3. Chokosi 4. Guan (including Gonja) 5. Mole-Dagbani 6. Grusi 7. Fulani 8. Other
A2	What type of household is this? (CIRCLE ONE)	1=Male headed 2=Female headed 3=Child headed (Age 16 or under) 4=Other (Specify.....)



A10. Who made the decision to take out a loan?

1. Myself
2. My Husband
3. Both my Husband and I
4. Others (specify)_____

A11. How was your income this year as compared to last year?

1. Better
2. Same
3. Worse

A12. Which of the following RING crop interventions are you engaged in? (Circle all that apply)

1. Groundnuts
2. Soybean
3. Orange Flesh Sweet Potatoes (OFSP)
4. Leafy Green Vegetable (LGV)

SECTION B: HOUSEHOLD DIETARY DIVERSITY SCORE

Now I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day and at night.

READ THE LIST OF FOODS. PLACE A **ONE** IN THE BOX IF ANYONE IN THE HOUSEHOLD ATE THE FOOD IN QUESTION, PLACE A **ZERO** IN THE BOX IF NO ONE IN THE HOUSEHOLD ATE THE FOOD.

QUESTIONS AND FILTERS

CODING CATEGORIES

CEREALS: bread, rice noodles, biscuits, or any other foods made from millet, sorghum, maize, rice, wheat, etc.

ROOT & TUBERS: Any potatoes, yams, manioc, cassava or any other foods made from roots or tubers?

VEGETABLES: Any vegetables? Cabbage, “aleefe”, kenaf, green pepper, “ayoyo”, etc.



FRUITS: Any fruits?

MEAT, POULTRY, OFFAL: Any beef, pork, lamb, goat, rabbit wild game, chicken, duck, or other birds, liver, kidney, heart, or other organ meats?

EGGS: Any eggs?

FISH & SEA FOODS: Any fresh or dried fish or shellfish?

PULSES/LEGUMES/ NUTS: Any foods made from beans, peas, lentils, or nuts?

MILK & MILK PRODUCTS: Any cheese, yogurt, milk or other milk products?

OIL/FATS: Any foods made with oil, fat, or butter?

SUGAR/ HONEY: Any sugar or honey?

MISCELLANEOUS: Any other foods, such as condiments, coffee, tea?

TOTAL

SECTION C: ANTHROPOMETRY

Mothers with children under 5 yrs.:

C1. Age:

C2. Weight: _____._____kg

C3. Height/Length: _____._____cm

C4. BMI _____

Under 5 children

C5. Sex: _____

C6. Date of Birth: _____

C7. Weight: _____._____kg

C8. MUAC: _____._____cm

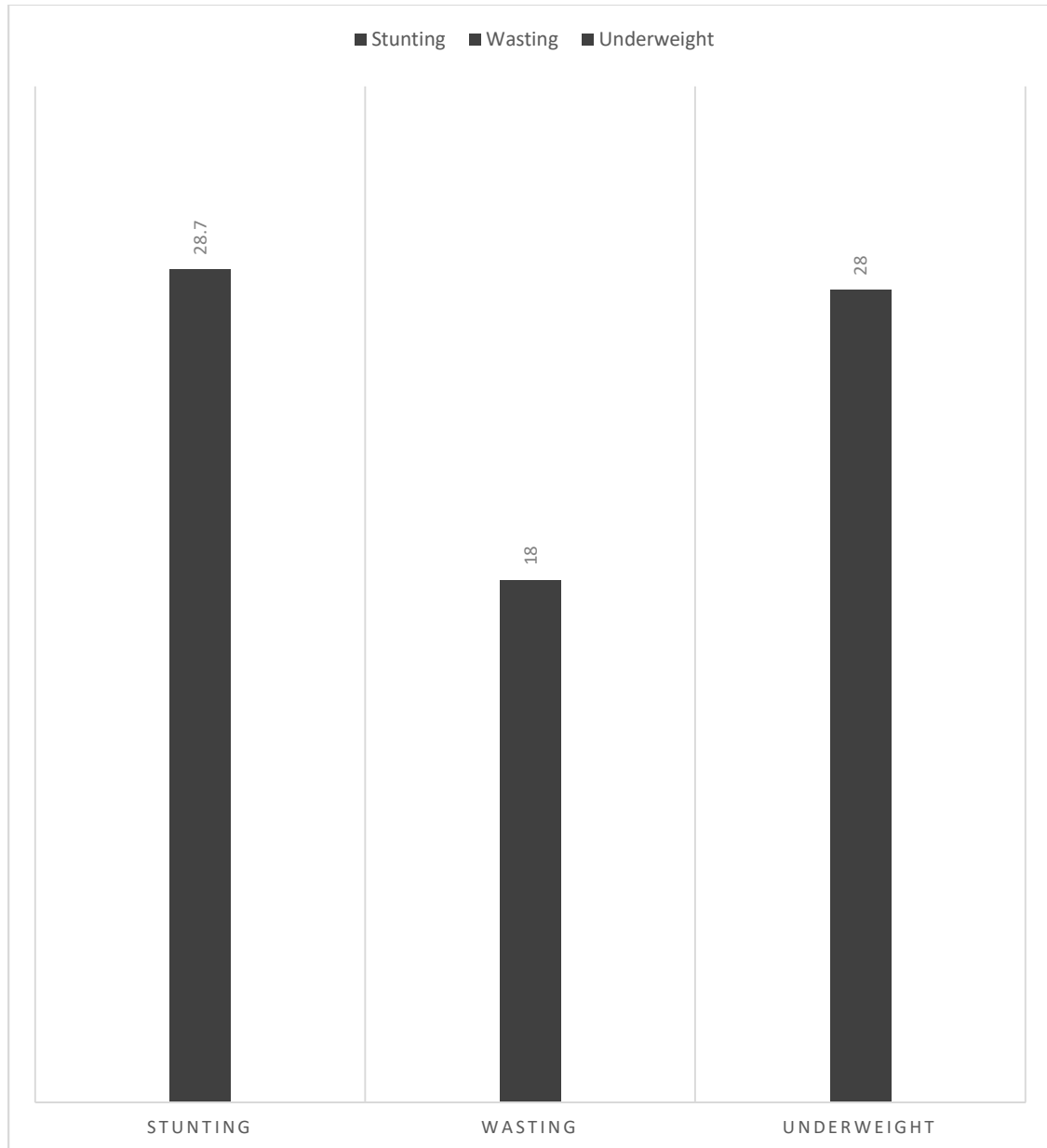
C9. Height/Length: _____._____cm

C10. Measured: Recumbent____ Standing____

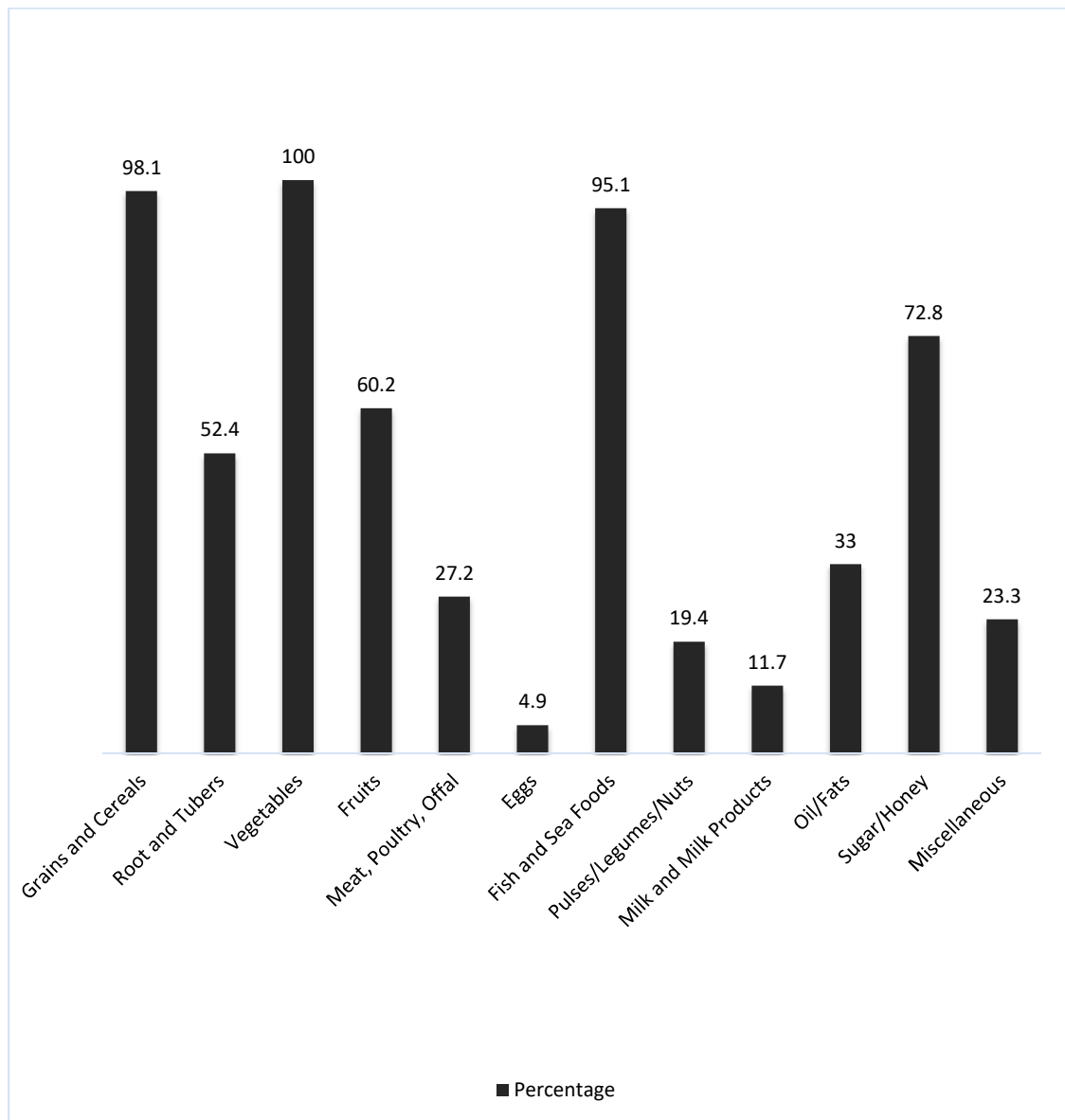
C11. Oedema: Yes____ No____



Appendix II: Prevalence of the various forms of malnutrition assessed in the study



Appendix III: General percentage intakes of the various food groups in the Household Dietary Diversity table



Appendix IV: Graphical presentation of intakes of the various food groups in the Household Dietary Diversity table between VSLA and non-VSLA groups

