

UNIVERSITY OF EDUCATION, WINNEBA

**CONTRIBUTIONS OF NON-GOVERNMENTAL ORGANISATION TO THE
DEVELOPMENT OF RURAL COMMUNITIES OF GHANA: THE CASE OF
ACDEP IN THE PROVISION OF SUBSIDIZED AGRICULTURAL INPUTS
TO FARMERS IN WA EAST DISTRICT**



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MASTER OF SCIENCE

UNIVERSITY OF EDUCATION WINNEBA

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Faculty of Social Science Education, submitted to the School of
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DECEMBER, 2020

DECLARATION

Student's Declaration

I, NURIDEEN BUALA, declare that this dissertation, 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.

Signature

Date.....

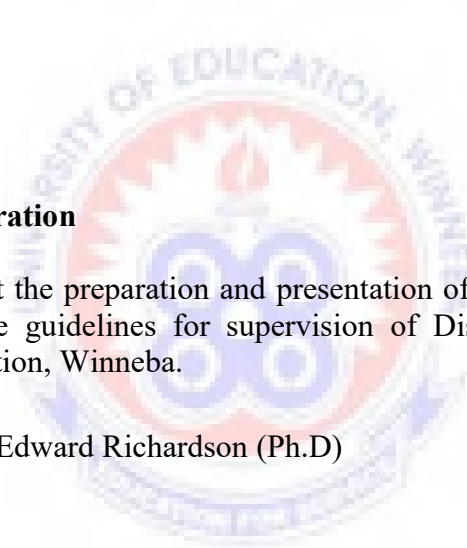
Supervisor's Declaration

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of Dissertation laid down by the University of Education, Winneba.

Name: Theophilus Edward Richardson (Ph.D)

Signature

Date.....



DEDICATION

This Dissertation is dedicated to the Almighty Allah who is my source of wisdom, knowledge and Power and to my lovely wife, Shamira Iddrisu for her support.



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GLOSSARY

ACDEP	Association of Church-Based Development Project
ADP	Agricultural Development Programme
CFED	Cambridge Female Education Department
CFTC	Commodity Future Trading Commission
CSA	Community Alliance Project
FAO	Food and Agriculture Organization
FBO	Farm Base Organisation
GDP	Gross Domestic Product
GNI	Gross National Income
GoG	Government of Ghana
GSS	Ghana Statistical Service
HDI	Human Development Index
IFAD	International Fund for Agriculture
IMF	International Monetary Fund
ISODEC	Integrated Social Development Centre
JHS	Junior High School
MOFA	Ministry of Food and Agriculture
MOH	Ministry of Health
NGO	Non- Governmental Organization
PPP	Public-Private Partnership
RAAP	Rural aid Action Programme
RESULT	Resilient and Sustainable Livelihoods Transformation
SAGE	Strategies for Advancing Girls Education
SHS	Senior High School
STD	Sexually Transmitted Diseases
UN	United Nations
WHO	World Health Organization
WUSC	World University Service of Canada
WVI	World Vision International

ABSTRACT

Though Ghana has made significant development progress in the last decade and is often hailed as a success story in African development, progress has not been equally shared between the north and south of Ghana. Northern Ghana is affected by its remoteness from Ghana's economic core, fragile soil fertility, one rather than two growing seasons, volatile climatic conditions, and a history of marginalization from the national agenda. Consequently, the five northern regions of Ghana have higher incidences of poverty, food insecurity and malnutrition. Although the Government of Ghana (GoG) recognizes the importance of improving the productivity of smallholders in order to transform the agricultural sector, an emphasis on commercial agriculture and market-oriented growth risks excluding poorer, more food insecure smallholders in northern Ghana. These farmers often face entry barriers stemming from their low quality and quantity of agricultural production, limited access to improved inputs and extension support, lack of access to credit, few productive assets, weak links to markets, and aversion to risk. There is therefore a need for interventions that directly support poorer men and women smallholder farmers in Northern Ghana to reduce their vulnerability and food insecurity.



CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Agriculture remains a fundamental instrument for sustainable development and poverty reduction in this 21st century (Kibaara, Ariga, Olwande & Jayne, 2008 & World Bank, 2007). Its impact in Africa has led to the conclusion that it is the lifeblood of many Africa economies. The agricultural industry employs about 70 percent of the workforce in Africa and contributes an average of 30 percent to the continent's Gross Domestic Product (FAO, 2013 & Kariuki, 2011). In Ghana, for example, agriculture was historically the dominant sector of the real economy accounting for more than 30% of GDP post-independence, although more recently, it has declined sharply by 29.9% in 2010 to 18.9% in 2016 and is the smallest sector of the economy as at 2016 (Budget Statement, 2017).

Ministry of Food and Agriculture in Ghana MoFA (2007) reported that agriculture was dominantly practiced on smallholder level using simple technology in producing about 80% of the total agricultural output in Ghana. According to the report, about 2.74 million households own a farm or are keeping livestock. In reference to the 2000 census, 50.6% (4.2 million people) of the labor force, were directly involved in agriculture. From the census, about 90% of most farm lands were not up to 2 hectares in size and mostly oil palm, rubber, coconut, maize, rice and pineapples farms are very large. Generally, agriculture in Ghana is rainfall dependent, although in 1999 an estimated 6,000 farm enterprises across Ghana used some means of irrigation. Agriculture in Ghana continues to contribute the largest share to the Gross Domestic Product (GDP), even though the share of the sector in national output declined from 44% in 1990 to 37% in 2005, (MOFA, 2007). Since 2000, the contribution of agriculture to total GDP has

varied between 35.8% and 37%; Agricultural growth increased from about 4% in 2000 to 6% in 2005 but much of the recent growth has been stimulated by the cocoa industry (MOFA, 2007). However, agriculture in Ghana, is predominantly practiced on smallholder, family-operated farms using rudimentary technology to produce about 80% of Ghana's total agricultural output. It is estimated that about 2.74 million households operate a farm or keep livestock (MOFA, 2018). According to the 2000 census, 50.6% of the labour force, or 4.2 million people, are directly engaged in agriculture. About 90% of farm holdings are less than 2 hectares in size. Larger scale farms and plantations produce mainly oil palm, rubber and coconut and to a lesser extent, maize, soya beans, rice and pineapples, (MOFA 2018).

Agriculture is a source of livelihoods for an estimated 86 percent of rural people worldwide. It provides jobs for 1.3 billion smallholders and landless workers, farm-financed social welfare when there are urban shocks and a foundation for viable rural communities (World Bank, 2016). Of the developing world's 5.5 billion people, 3 billion live in rural areas, nearly half of humanity. Of these rural inhabitants an estimated 2.5 billion are in households involved in agriculture, and 1.5 billion are in smallholder households (World Bank, 2016).

Though the development of the economy is the responsibility of the government of Ghana, it is important to note that the supports of NGOs are needed to the development of the country. Through the implementation of NGO programs, they can help in the provision of Education, in the provision of Health care delivery services and alleviation of poverty in the various communities of their operations. Activities of NGOs complement the efforts of governments in Ghana. Association of church-based development project, Action Aid, USAID, Rebecca Foundation, World Vision, Rising Village Foundation, Catholic Relief Services (CRS), Africana Children Educational Fund, Adventist Development and Relief Agency are some of the NGOs engaging in

activities such as Development of Small Scale Farmers, Research, Monitoring and Evaluation, Enlightenment Campaigns; Advocacy for the poor, Education, Sustainability Programs, Health Issues, Women Empowerment etc. (George, 2005).

The activities of NGOs (local, international and multinational) have improved the living standards of communities they operate. For instance, the USAID has provided clean drinking water for some deprived communities, helped in the educational sector by building schools and educational offices. Reference can be made to the education unit office complex of the Afigya-Kwabre District which helps in the administrative works of the district. Rising Village Foundation which is an international organization has sponsored lots of children in school in Ankaase, Mpobi and Nantan; all in the Afigya Kwabre District. They have also given start-up funds to female single parents in villages who want to learn a trade through their apprentice program (Rising Village Foundation, 2014).

The Upper West Region was part of the then Upper Region of Ghana but was carved out in 1983 in furtherance of Ghana's decentralization programme. The major economic activity of the Region is agriculture. People of the Region are engaged in subsistence agriculture with staples such as maize, soya beans guinea-corn, millet, rice, yams, beans, groundnuts, and bambara beans. Sheep, goats, chickens, pigs and guinea fowls are raised for domestic and commercial purposes. Generally, the Region lacks behind in many aspects of development. For instance, the 2016 Ghana Living Standard Survey revealed that 29.16% of adults in the Region have never been to school. Access to education in the Region is still poor. About 67.1% of school-going-age children have access to primary education while only 17.2% had access to secondary school (GSS, 2005; UNDP, 2007). According to Ghana Statistical Service

(2018), the Region's illiteracy rate for people aged 15 years and above stood at 34.7%. Similarly, the Ghana Statistical Service Living Survey 6 (2014) identified that only 51.7% of adults (15 years and above) in the Region had ever attended school. As Blench (2005) remarked, by many indicators, Upper West Region is the most disadvantaged Region of Ghana. In terms of child mortality, disease incidence, access to health, schooling, roads and communications, it remains at the bottom of the table. It has seen remarkably little donor investment and has been largely neglected by government.

In the Wa East District, institutional inadequacies, limited natural resource endowment coupled with a high rate of out-migration of youth (both skilled and unskilled) to the southern part of Ghana made the district lack behind development. In the recent past however, many NGOs (e.g. Plan Ghana, ActionAid, Suntaa-Nuntaa, World Vision and Rural Aid Action Programme (RAAP) among others have undertaken some operations either solely or in partnership with government in the Upper West Region. Church-based NGOs have also emerged, and all the major denominations have some type of operation (Dugle, Akanbng & Salakpi, 2015).

Among the Church-based NGOs in the Region the one that is into agriculture is the Association of Church Development Projects (ACDEP). ACDEP is a development NGO in Northern Ghana with its Development Secretariat located in Tamale, the capital of the Northern Region. ACDEP's primary focus is on the socio-economic development of Northern Ghana and the rural poor. ACDEP is engaged in the fields of Agricultural Development, Food Security, Livelihoods and Climate Change; Agricultural Value Chains and Market Access; Agri-business Financial Services; Primary Health Care, Community Health and Nutrition; with Youth, Gender and

Environment as a cross-cutting programme. Through these programmes, ACDEP works with other development partners and rural communities to improve livelihoods, household food security, good health and poverty reduction in Northern Ghana.

1.2 Statement of the Problem

It has been revealed by Narayan et al. (2000) that in rural areas much hardship is linked to reduced access to land, bad soils, adverse weather, lack of fertilizer and other inputs, and overexploitation of common resources such as fish, pastureland and forests.

Rural communities are prone to erratic rainfall and marginal soil fertility. As a result, feeding the growing population is a major challenge which is a prerequisite to rural development. Declining soil fertility resulting from continuous cropping and monocropping has led to declining yields of maize, soya beans, sorghum, and groundnut (Abatania & Albert, 1993). In a study sponsored by the World Bank and conducted in 23 countries worldwide including Ghana in 1999, it was revealed that uncertainty of livelihood sources in general was serious for the rural dwellers. Although the Government of Ghana (GoG) recognizes the importance of improving the productivity of smallholders to transform the agricultural sector, an emphasis on commercial agriculture and market-oriented growth risks excluding poorer, more food insecure smallholders in northern Ghana. These farmers often face entry barriers stemming from their low quality and quantity of agricultural production, limited access to improved inputs and extension support, lack of access to credit, few productive assets, weak links to markets. There is therefore a need for interventions that directly support poorer men and women smallholder farmers in the region to reduce their vulnerability and food insecurity.

Subsidies are most often only targeted at a few inputs and are in many cases limited to fertilizers and seeds. Subsidy schemes are often targeted at those least able to purchase inputs at market prices or seek to otherwise target users depending on the intended objectives of the subsidy (Dorward & Chirwa, 2014). The underlying assumption of subsidy schemes is that by reducing the costs of the use of fertilizer and other inputs, their use will increase, thereby leading to production increases, particularly if the subsidized inputs are used by households facing input market failure (Druilhe & Barreiro-Hurlé, 2012). These subsidies seek to maximise the multiple benefits of subsidies to different stakeholders while minimizing their distortionary effects on inter alia efficient commercial market operation and development (Morris, Kelly, Kopick & Byerlee, 2007). Agricultural input subsidies were common in poor rural economies in the 1960s and 1970s, but conventional wisdom, especially among international lending institutions such as the World Bank and IMF, deemed them ineffective by the 1980s and 1990s and their use declined (Dorward, 2009). However, in recent years, there has been a resurgence of interest and investment, mainly in Africa, in so-called „smart subsidies“. There remains, however, considerable debate among policy makers and analysts regarding the effectiveness and efficiency of investments in agricultural input subsidies and the conditions under which they may or may not work (Wiggins & Brooks, 2010; Kilic, Whitney, Winters, 2013; Pauw & Thurlow, 2014). Funded by commodity future trading commission (CFTC), the Resilient and Sustainable Livelihoods Transformation (RESULT) Project in Ghana is a project that is being implemented by CFTC in partnership with the Association of Church-Based Development Projects (ACDEP). The Project supports farmers to improve their output of maize and soya beans in the Wa East district by supplying subsidized agricultural inputs, however, what they have been able to accomplish

among farmers requires close and careful investigation because of the historical facts about ineffectiveness of subsidies for agricultural inputs.

1.3 Purpose of the Study

This work therefore seeks to assess the contribution of ACDEP agricultural subsidized inputs provision to improving the livelihoods of rural households' farmers in the district especially, Bulinga and its environs.

The study discusses the contribution of NGOs (ACDEP) to the development of Ghana through interventions especially in agriculture.

The specific objectives of the study include:

1. To examine how ACDEP subsidize input interventions in the Wa East district.
2. To analyze the factors influencing household farmer participation in ACDEP agricultural inputs subsidization programme in the District.
3. To discuss the effect of household farmer participation in ACDEP agricultural inputs subsidization programme on their livelihood.

1.5 Research Questions

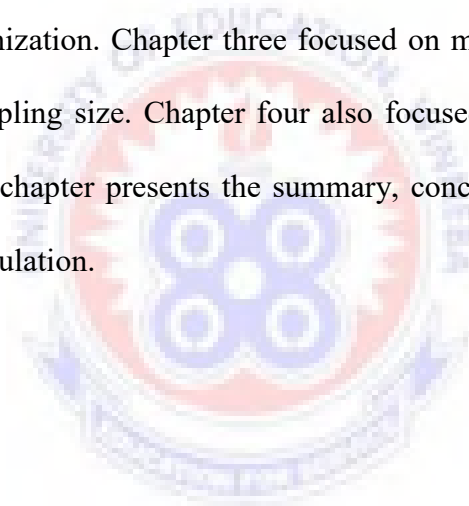
1. How are NGO'S (ACDEP) subsidizing agricultural inputs in Wa East district (Bulinga)?
2. What are the determinants of household farmer participation in NGO'S (ACDEP) programme in the District?
3. How does household farmers' participation in NGO'S (ACDEP) programme influence their livelihood?

1.6 Scope of the Study

The study area is in the Wa East District of the Upper West Region. The study will cover all the Communities in Bulinga and its environs that ACDEP operates in the district.

1.7 Organization of the Study

The study was organized under five chapters. Chapter one, covers the general introduction to the study and it includes the problem statement, research objectives, research questions, purpose of the study, limitation to the study and organisation. The second chapter deals with the review of relevant literature on the subject and Non-governmental Organization. Chapter three focused on methodology, research design, population and sampling size. Chapter four also focused on the analysis of the data gathered. The final chapter presents the summary, conclusions and recommendation towards policy formulation.



CHAPTER TWO

LITERATURE REVIEW

2.1 The role of NGOs in rural development in Ghana

NGOs have a reputation for facilitating development in rural areas. In developing countries, where there is a general belief that the rural populations will benefit if resources are channeled through projects (Alix, 1998). These organizations intervene in agricultural issues, environmental sustainability issues, local economic development, infrastructure development and integrated approaches to rural development. According to Konteh (1999) NGOs continue to play a leading role in the promotion of good government, education, health, infrastructural development, promotion and defense of human rights, peace building and conflict prevention. This is because of their recognized ability to control the power of the central government and the ability to empower people at the grass root level. The profiles of NGOs have improved over the years, and they are recognized as important development actors at local, regional and international levels. NGOs have gained notable prominence in the provision of public goods and developmental assistance (Lewis & Kanji, 2009, p. 1; McGuire, 2013, p. 706). Upswing of NGO recognition can be partly attributed to their assumed ability to fill gaps in service delivery as well as their drive and tenacity in pursuing transformative agendas and equal relationships, through their people centered approaches (Holmen & Jirstrom, 2009; McGuire, 2013; Banks, et al., 2015, p. 10). They have also gained recognition in the economic and political world as important actors in international political economy, based on projections of significant increases in numbers, membership, activities and financial resources. This growth has been stimulated by globalization, as international policy coordination propelled political activity at the international level (Hudson, 2000; McGuire, 2013, p. 706).

Although terminological categorization of NGOs appears to be rigid, classification of its activities is diversified and cannot be sharply divided as their labels portray. They engage in several humanitarian activities that are most often aimed at the deprived and vulnerable in the society. Despite this general drive behind their work, NGOs have experienced some transformations since its inception. Most scholars categorized their activities as service delivery, advocacy, and developmental oriented work (Hill, 2005; Mcguire, 2013).

2.2 Non-Governmental Organizations

Kens (2002) asserts that non-governmental organisations are legal and professionalized independent societal institutions whose basic purpose is to promote common development goals at the national or the international level. In the West, for instance, NGOs are referred to as private institutions working on development in non-industrialized countries Lewis, (1999). This means NGOs are institutions or organisations that engage in ensuring development in the poor or non-industrialized states just like Ghana. The fact is that, this view is solely on non-industrialized countries but failed to include the industrialized states which in certain ways are still grappling with economic inequality and unemployment (Lewis, 1999).

Williams as cited in Oquaye (1996) posits that many non-commercial organisations outside government could loosely be regarded as non-governmental organisations. Thus, he identified what he calls development NGOs which he defines as —those private non-profit making organisations that work with developing countries to relieve suffering, promote the interest of the poor, protect the environment, provide basic social services or undertake community development (Oquaye, 1996). Marten,s argument about the meaning of NGOs is somehow similar to the western

understanding of NGOs because they both focus on development in broad terms. Our study extends this view with local participation, social justice, job creation, improvement in education and health care delivery as the ways of promoting economic growth in Ghana. Oquaye and Katsriku (1996) opine that NGOs are organisations which are voluntary, independent, not-self servicing, not-for-profit-making aim at improving the standard of living of people in society.

Teegen et al. (2004) NGOs are private, non-profit making institutions which focus on serving specific societal interests by aiming at advocacy and or operational efforts on social, political and economic goals, including equity, education, health, environmental protection, water and the protection of people rights (Teegen et al., 2004). Diversity has become a hallmark of NGOs and it is nearly an impossible task to outline the various NGOs characteristics when it comes to their aims, strategies, resources, target groups, tools, effectiveness, impact and sustainability. Even though the NGO sector has grown in scope and operation the principles of altruism and voluntarism remain the major defining characteristics (World Bank, 1995).

Sequeira et al. (2007) opine that NGOs operation is mostly regarded as small scale, flexible, dynamic, adaptive, local, efficient and creative. These are abilities that make them complementary to state action. The government cannot compete with their ability and interest to innovate, since —the government,s capacity and structure does not allow the flexibility required to experiment with new approaches (Sequeira et al., 2007). The view of Sequeira and the other scholars show that NGOs are very adaptive to the conditions of society and very efficient in performing their activities which amount to eradicating absolute poverty in society especially in the rural areas.

Kadzamira (2002) says that non-governmental organisations are often considered as being more flexible and dynamic than donor agencies and international organizations, while adapting easily to the specific political, economic and social context in a given country. As a result, it may be easier for NGOs to promote a needs-based, demand-led approach rather than a donor-driven one. For example, in Malawi, NGOs use needs assessment and prioritisation as an entry point into the community (Kadzamira & Kunje, 2002). In the views of Maddox et al. and Kadzamira et al on the characteristics of NGOs are that they are dynamic, flexible, very adaptive and efficient in the provision of basic services to the society but they all fail to acknowledge the non-profit seeking nature of NGOs, which this study will show using the operations of the WVI as a case study NGOs and the Fight Against Poverty.

2.3 The Role of NGOs in Ghana

According to the UNDP (2007), non-governmental organisations have primarily taken on the role of gap filling; that is, taking on strategies of improving basic education where the government lacks the ability to do so or does not see it as a priority. Some scholars link this role to the structural adjustment programmes that were introduced in the 1980s and 1990s, claiming that they lead to the —disengagement of most African governments from their role as providers of social services such as education and health termed as non-productive sectors. Najam (2013) classifies the operation of NGOs in the policy making process in development in four roles: monitor, advocate, innovator and service provider. NGOs operation in policy making processes could be through a coalition of multiple organisations or a single organisation. It could be institutionalised participation, which is formal and government-oriented, or non-institutionalised participation, which is informal and free from government influence.

To Fowler (2000), the major function of NGOs has been in education and health service provision. Their gap-filling role and independence from government has allowed them to implement innovative approaches that can serve as models for government and the public services. In this regard, NGOs should continue doing what they already do best in order to become a useful laboratory for government. Mainstreaming such successful innovations in cooperation with government thus becomes a capacity development process par excellence; going beyond the individual and community level, this type of scaling up can become part of education sector reform, involving all levels and actors, and incorporating NGOs as policy-partners and advisors. NGOs can become —acknowledged innovators in the public interest, with a constant eye on adoption by bigger and more powerful actors and on enhancing the capacity of claimants Fowler, (2000).

According to Chapman (2002), one role of NGOs is to take on capacity development strategies at various levels. The possibilities for making an impact are many within a decentralized education system and do not have to be restricted to a school focus. Partnerships can be developed, or formalized, with both local and central governments. In his view, NGOs can participate as a policy partner at all levels, bringing knowledge and clarity to education policy formulation and implementation. At the community level, engaging with the authorities can strengthen local education governance as well as local civil society. The latter might be interpreted as more of an indirect than a direct role in capacity development but is important because it can generate greater civil society input at the level of government. Chapman,s view is similar to that of Fowler because of the educational aspect of the role of NGOs but Fowler,,s opinion seems the best for this study because of the emphasis on NGOs in providing education and health services.

The role NGOs play in Ghana includes capacity building (which is the process by which individuals and organizations obtain, improve, and retain the skills, knowledge, tools, equipment and other resources needed to do their jobs competently or to a greater capacity, health care delivery, economic empowerment of the vulnerable groups, development training, provision of employment opportunities, quality education and social amenities, planning and execution of community development projects.

2.4 NGOs and Development in Ghana

In this 21st Century, there has been a tremendous increase in the number of NGOs involved in development aid, in both Northern and Southern countries. The total sum of public funds being spent through NGOs has increased dramatically and the part of development aid going through NGOs, relative to bilateral or multilateral agencies, has also grown tremendously (Pearce et al., 2000). NGOs have become an enormous ally in the development agenda of the developing countries especially in Africa in general and Ghana in particular.

NGOs fill the gap in development, although working with inadequate funds of their own. NGOs make it feasible for districts to execute their desired projects at very minimal costs (Osei-Hwedie, 2000). Thus, NGOs perform an important role in development in Ghana. There is no region or district in the country that has not benefitted from the operation of NGOs. NGOs have been a driving force in development in Ghana. Through its operation, over 650 communities in Ghana have been able to put up school blocks and health centres; construct drainage systems, community dams, roads; undertake agricultural projects; women empowerment, payment of school fees, granting loans, microfinance, provision of mosquito nets,

payment of apprentice fees, organize health education programmes, food security, potable water and disseminate information and knowledge to the local people (Osei-Hwedie, 2000). This study supports this view because NGOs are complementing the efforts of government in providing the basic services of people in Ghana but complements the use of local participation and job creation as part of the role of NGOs in the development of communities in Ghana.

NGOs provide health service, women empowerment and food security services to the people of Ghana especially those in the rural areas to enable them meet their basic needs. For example, the Catholic Relief Service which is a Catholic organization supported the Ghana government and Ministry of Health in 1994 with 1410.10 metric tons of food supplements to about 24,740 beneficiaries and families in the rural areas of Upper West, Upper East and Northern regions (Oquaye, 2010). This shows that NGOs have been engaged in providing health service, women empowerment and food security that this study supports and which is based on assessing the role of NGOs in Ghana,,s development.

Oquaye (1996) opines that NGOs also provide education to the communities in Ghana especially in the three Northern regions. The World Vision International, a Catholic organization, had provided teaching aid and text books for a kindergarten school and four teachers,,quarters in Nadowli district, a JSS classroom block was built and 600 pieces of furniture were provided Oquaye, (1996). The literature has shown that NGOs provide education, health services, technical assistance, economic empowerment and building of community development projects in Ghana even though there is still poverty and inequality in the country (World Bank, 2015).

2.5 Classification of NGOs

There are numerous possibilities to classify NGOs. The World Bank classifies NGOs into operational and that of advocacy NGOs. The primary purpose of the operational NGOs is the design and the implementation of development related projects. One categorization that is frequently used is the division into relief-oriented or development oriented organizations; they can also be classified according to whether, they stress service delivery or participation; or whether they are religious and secular and whether they are more public or private – orientated. Operational Ngo can be community –based, national or international.

The primary purpose of the advocacy NGOs is to defend or promote a specific cause. As opposed to operational project management, these organizations typically try to raise awareness, acceptance and knowledge by lobbying, press work and activist events. Also in Ghana and in many African countries, there are a number of NGOs involved in education in general and girl-child education in particular. Such NGOs as Catholic Relief Services (CRS), World University Services of Canada (WUSC), Action Aid Ghana, Community Alliance Project (CSA), Strategies for Advancing Girls Education (SAGE), Cambridge Female Education Department, Integrated Social Development Centre (ISODEC) etc are all engaged in especially girl-child education (Sutherland -Addy, 2002).

2.5.1 Education

According to Curzon (1996), education in our culture is concerned generally with the handing on of the beliefs and moral standards, accumulated knowledge and skills, the nurture of human personality and as investment in human capital. In its essence, to him, it is recognition of the fact that society's way of life must be learned – since an

understanding of it is not inherited – by each individual. The concept of education does not “pick out” any specific process simply involving imparting of information, presentation of knowledge or even encouragement of interest. Neither is it tied to the acquisition of specific trade skills. Rather, it is a process which „pick out“ general conditions or guiding criteria to which all particular process and activities of teaching and learning ought to conform (Bennaars & Otiende, 1994).

2.5.2 NGOs in Health Delivery

The role of NGOs, in the context of health delivery systems, is conceptualized as a public-private partnership (PPP) recognizing that NGOs are independent actors in their own right and active in collaborating with others based on mutually beneficial relationships. Indeed, the World Health Organisation has recognised and acknowledged the need for inter-sectoral collaboration and action for effective health delivery (WHO, 2007). In developing countries where governments are facing enormous challenges in providing basic social services to needy citizens civil society organisations have often filled gaps in the health delivery system.

2.5.3 Agriculture ACDEP

Though Ghana has made significant development progress in the last decade and is often hailed as a success story in African development, progress has not been equally shared between the north and south of Ghana. Northern Ghana is affected by its remoteness from Ghana’s economic core, fragile soil fertility, one rather than two growing seasons, volatile climatic conditions, and a history of marginalization from the national agenda.(FAO, 2013 and Karuiki, 2011)

Consequently, the five northern regions of Ghana have higher incidences of poverty, food insecurity and malnutrition. Although the Government of Ghana (GoG)

recognizes the importance of improving the productivity of smallholders in order to transform the agricultural sector, an emphasis on commercial agriculture and market-oriented growth risks excluding poorer, more food insecure smallholders in northern Ghana. These farmers often face entry barriers stemming from their low quality and quantity of agricultural production, limited access to improved inputs and extension support, lack of access to credit, few productive assets, weak links to markets, and aversion to risk. There is therefore a need for interventions that directly support poorer men and women smallholder farmers in Northern Ghana to reduce their vulnerability and food insecurity. Funded by commodity future trading commission (CFTC), the Resilient and Sustainable Livelihoods Transformation (RESULT) Project in Northern Ghana is a 6 year (2012-2018), \$19 million project that is being implemented by CFTC in partnership with the Association of Church-Based Development Projects (ACDEP). The Project addresses the four basic elements of food security by increasing food availability, access, utilization and stability (i.e. resilience). It is based on proven approaches developed by CFTC and ACDEP, integrating food security and sustainable livelihoods interventions that increase adaptation to climate change and reduce vulnerability to disasters.

2.5.6 Intervention

Agricultural input subsidy interventions aim to make inputs, most commonly fertilizers and seeds, available to potential users at below market costs as a way of incentivizing adoption, increasing agricultural productivity and profitability and ultimately reducing poverty and stimulating economic growth among farm households. Examples include tax exemptions, free provision of agricultural inputs, price subsidies where inputs are made available at lower prices to consumers or, as is common in many contemporary contexts, the provision of vouchers to farm

households that they are free to redeem in local markets. Agricultural inputs that can be subsidized include seeds, fertilizers, pesticides, herbicides, animal feed, machinery and fuel. The key features of smart subsidies include promotion of fertilizers as part of a wider agricultural strategy; leveraging the private sector through the use of redeemable vouchers that can promote competition among input suppliers, giving farmers market choices; planning some form of exit strategy into the scheme from its inception; and, a focus on ensuring sustainability and promoting pro-poor economic growth (Morris et al., 2007).

2.6 NGOs and the Fight against Poverty

Development experts consider the sector to put measures at correcting the failures of the state and the market Edwards (2009). In the development world, NGOs are regarded as parallel and legitimate development institution to central government programs and projects Liebenberg (2009). Due to their immense contributions to socioeconomic and political development in the developing world, some scholars have described NGOs as the third most important sector in the economies of developing nations, next only to government and the private sector (Latha & Prabhakar, 2011; Bromideh, 2011). The growth of NGOs over the past few decades has given them an increasingly important role in reduction of poverty and community development globally. This has gradually led them into forming a distinctive sector and a dominant force within civil society (Chant & Mellwaine, 2009; Todaro & Smith, 2009). However, conflicts in some parts of the country derail the positive impact these NGO's are making. According to Mahama, Ibrahim (2003), before the 1994 ethnic conflict (Guinea Fowl War,) in

Northern Region which was the most widespread ever witnessed in modern Ghana there were similar less extensive ones in 1981, 1989 and 1991. The rural areas bore the brunt of the 1994 conflict with dire consequences on livelihoods.

Alikhan et al. (2007) argue that the failures of state-led development approaches throughout the 1970s and 1980s in the developing world fueled interest in NGOs as a development alternative, offering innovative and people-centered approaches to service delivery, advocacy, and empowerment. Across the developing world, it is a known fact that NGO operations are mainly focused on low-income communities and the sector is recognized by development agencies and stakeholders to possess the capacity to work directly with the marginalized and low-income communities (Mitlin, 2005).

Hossain (2001) outlines four key roles played by NGOs in poverty reduction. Firstly, NGOs encourage the involvement of the poor and are able to access areas that are neglected by the government. By this role, NGOs encourage participation of beneficiaries in their programs which enable them to identify the true hopes and aspirations of the poor and provide the right antidote to their problems. Secondly, in fighting poverty, NGOs are more economical in service delivery and do not seek returns from their actions: they are primarily driven by the passion to serve the poor and the disadvantaged. Thirdly, unlike public sector policies and programs that are subject to unforeseen changes due to power play, NGOs are less susceptible to political manipulations (Todaro & Smith, 2009). Their programs are more likely to be carried through and be evaluated than public programs (Liebenberg, 2009). Lastly, NGOs are sensitive to local needs and are respectful of informal traditional structures within communities. This role allows communities to articulate their development

needs and set priorities. These critical roles of the sector in development arena give them greater acceptability and success in their poverty reduction efforts, and they are able to touch many lives through their activities.

In the estimation of Todaro and Smith (2009), NGOs in the developing countries have affected the lives of some 250 million people. In urban areas, NGOs have been recognized to assist the urban poor in accessing credit, enhancing livelihoods, protecting the environment, and providing services, especially through sanitation and slum and squatter upgrading programs (Ibrahim & Hulme 2010; Sabry, 2009; Mitlin & Satterthwaite, 2004). However, in contributing to urban poverty, Lawson et al. (2009) contends that the sector shift alliances in a way that will facilitate policies and interventions for the benefit of the urban poor. Several strategies are adopted by NGOs in the execution of their programs and projects. Empirically, two key approaches employed by NGOs in urban poverty reduction especially in the developing countries such as Ghana include strategies for improving access and utilization of social services and strategies for human and financial capital development towards improved household productivity and income (Adjei et al. 2012).

Some of the ways of improving access and utilization of social services include the provision of medical facilities such as community health centers, registration of beneficiaries under national health insurance schemes, and health education to the urban poor. In Mozambique, one of the intervention programs adopted by NGOs including World Vision is to change risky behaviors by raising awareness of STDs and the training of health staff. Care and prevention teams have also been trained to provide basic home care for chronically ill people (Mulenga, 2002). Similarly, in

Kenya, microbusiness loans are given to individuals or groups who have saved with Jamii Bora for a minimum of 6 weeks to expand their enterprises (Salim, 2010).

Suharko (2007) has therefore classified the numerous strategies used by NGOs into the supply-side strategies and demand-side strategies. He posits that supply-side strategies focus on providing services directly to beneficiaries. Such strategies result in improving access to and utilization of social services, capacity building, and empowerment. Demand-side strategies on the other hand are strategies that target at providing services indirectly to the poor. Such strategies result in enhanced access to services provided by the state or society. They take the form of advocacy of all kinds (human rights, environmental protection, among others) and social protection. It must be noted that for NGOs as a sector to be effective in the fight against poverty, the two strategies must be implemented in a complementary manner. Notwithstanding their critical role in development agenda of developing nations, some scholars have remained skeptical of NGOs' ultimate agenda of reducing poverty. Such group of scholars considers NGOs to satisfy their donors rather than meeting the needs of the low-income group that their activities are supposed to uplift.

Anzorena et al. (1998) have argued that many donors impose demands that limit the possibilities for NGOs to work in true spirit with low-income groups. Such NGOs therefore become bureaucratic, non-transparent, and non-participatory and such attitudes water down any poverty reduction initiative. In line with this argument, Chant and McIlwaine (2009) have described the poverty reduction efforts of many NGOs as a paradox. They contend that in as much as they make efforts to reduce poverty, NGOs end up enriching themselves and not affecting lives of beneficiaries

2.7 Empirical Reviews

The empirical issue encompasses studies conducted within NGOs. Mwandinga (2009) researched on the role of world vision in improving agriculture and food security in Tanzania revealed that Agriculture activities and food security are improving in good rate. About 90.3% of people are smallholder farmers and about 52.3% were food secured. However, the majority of the community members are now empowered and practicing improved agriculture techniques. About 63.95% of them use improved inputs and improved farm implement such as ox plough, tractors and subsoiler. More over the average yield currently 7-10bags of maize/acre/year depending on annual climatic condition. Asanso-Okyere et al (1997), in the analysis of food security issues at the individual level, the households are considered because decisions about production and consumption are taken at this level. These households level decisions are usually taken by farm households since a higher percentage of the active population are involved in agriculture in West Africa. Falcoz and Seurot (2009) researched in Tanzania on impact of the pump assistance from NGOs, on the farmers' life, revealed that unquestionably the pump assistance enables farmers to improve their conditions of life and work. Pump makes farmers to manage to increase their cultivated area due to availability of water, and beside they save time and can use it to develop their social life which is important for them or for other activities. These activities enabled them to have supplementary incomes, and so to facilitate their life. Moreover, probably the increases of area, enable farmers to have more income as well as more profits that they use in order to improve their working conditions.

Cocoa production supports the livelihoods of more than 800,000 smallholder households (Anim Kwapong and Frimpong,(2004) and many others who depend on it for a significant share of their income. Poverty reduction among cocoa farmers is

therefore clearer than in other crop production. In addition other stakeholders like chemical companies, input distributors and licensed cocoa buying companies also depend largely on cocoa for markets for their products, employment and income (Asamoah and Baah,(2002).

Belshaw and Coyle (2001) qualitative study researched in Ethiopia shows that NGOs projects have significant impacts in terms of rural development. Half of the projects had direct impacts. The remainder had indirect or preventive impacts in improving access to social services, improving community health or individuals' future access to livelihoods or through reducing the rate deterioration in natural or built environment. Magistro et al (2004) researched in Nepal and India in international NGO on strengthening linkages between the intervention of irrigation development and rural development. Data from field projects suggest that the approach can lead to significant additional income for small farmers and other micro and small enterprises in agricultural value chains. Olujenyo (2006) making impact assessment of Ondo State (in Nigeria) on the Agriculture Development Programme (ADP) experience employed regression method.

The impact of ADP was felt in the increase of the average farm size which had increased from 0.768 to 1.6 hectares since the inspection of the programme. The level of the adoption of the ADP strategies by the farmers was medium. The majority of farmers adopted between 4 and 6 out of 10 innovations from the ADP and there was no significance difference in the level of adoption of the contact and non –contact farmers. In general, the impact of ADP on the highest percentage of rural farmers in Ondo state was significant.

2.8 Conceptual Framework

In this framework developed by Alobo (2012) as referred from IFAD (2009), assets activities, and their access, are altogether required for a means of living by an individual or a household to construct a livelihood. The framework shows how, in different contexts, sustainable livelihoods are achieved through access to a range of livelihood assets which are combined in the pursuit of different livelihood interventions to achieve certain livelihood outcomes such as increased incomes (Alinovi et al., 2010). Households can access a range of assets or resources (physical, natural, economic, human and social capital) which they can use to engage in farm or non-farm activities or both (Scoones, 1998). The decision of rural households to participate in non-farm activities is influenced by individual or household specific factors, as well as other social, economic and environmental factors (Barrett et al., 2001; Barrett, Reardon and Webb, 2001; Escobal, 2001; Lay et al., 2008; Idowu et al., 2011). Various social relations, institutions, organizations, policies, as well as trends, shocks and seasonality modify access to and ability to convert livelihood assets into livelihood outcomes (Vedeld et al., 2012). The livelihood framework provides a comprehensive but complex, approach to understand the way people especially the rural dwellers live by employing the various resource endowments at their disposal (IFAD, 2009). It also emphasizes understanding of the context within which rural lives take place, the assets available, the various livelihood interventions chosen and respective intended or expected outcomes. The issue for attention then should be on what interventions are available and accessible, what kind of activities are developed with these interventions to produce a desired outcome. In any livelihood analysis, the major components defined in the framework include the vulnerability context, Assets, Policies-Institutions-livelihood Strategies and outcomes. In comparison to other

livelihood frameworks, the IFAD's brings in several changes making it less sequential and dependent, placing the poor at the core, emphasizing key processes, integrating personal assets and incorporating the „Hub Model“ for analyzing policies and institutions, unpacking processes (e.g. the markets, hospitals or clinic). It also highlights the relationship with the vulnerability context, introducing aspirations and opportunities, actions than strategies, emphasizing the feedback from strategies and outcomes to other livelihood elements and making the spiritual aspects of livelihoods more explicit. The expected effect of this study is to find out the effect of ACDEP's intervention on farm households to improve their income and reduce their vulnerability level.

2.9 Theoretical Framework

The individual's decision to participate in a development intervention is dichotomous, involving two mutually exclusive alternatives. In this study, the individual either participate in ACDEP intervention in the Wa East District (Bulinga) or does not. Models for estimating such phenomena in which the dependent variable is binary have been propounded (Green, 2005; Cameron & Trivedi, 2005; Wooldridge, 2006). The framework for such analysis has its root in the threshold theory of decision making in which a reaction occurs only after the strength of a stimulus increases beyond the individual's reaction threshold (Hill & Kau, 1981). The Probit model was used to determine the factors influencing a household farmer participation in ACDEP's agricultural intervention.

2.9.1 Probit model

In this study, the dependent variable of interests is participation in ACDEP intervention, which is generated through the Bernoulli process. The Probit model

constrains the estimated probabilities to be between 0 and 1 and relaxes the constraint of the effect of independent variables across different predicted values of the dependent variable (Nagler, 2002). The probit model advantage over linear probability models estimated via ordinary least square is that changes in the independent variable is not assumed to have constant change in the dependent variable (Nagler, 2002). Participation in ACDEP's agricultural intervention takes values of 1, if the household is participating in ACDEP intervention production and 0 otherwise. The probit model takes the form: $y_i = \begin{cases} 1, & y_i > 0 \\ 0, & \text{otherwise} \end{cases}$ y is the latent variable that cannot be observed while y_i takes the value of 1 if the event occurs and 0 if otherwise. The probability (P_i) of an i th farmer to participate or not, depends on an unobservable latent variable y_i determined by the prevailing socioeconomic and demographic factors X . Guided by related literature (e.g Cameron and Trivedi (2005), the probit model specifies the conditional probability as: $P_i = \Pr [y_i = 1 | X] = \Phi(X'\beta)$ 1

Where X is a "K by 1" vector of socioeconomic and demographic factors and β is "1 by k" vector of slope parameters. Cumulative density function is used to restrict the probability values to 0 and 1. The probit regression is a non-linear model hence parameter estimates are often obtained by maximum likelihood estimation method specified as follows:

$$\Phi(X'\beta) = \int_{-\infty}^{x'} \phi(z) dz \dots\dots\dots 2$$

Where $X'\beta$ is the index function and $\phi(z) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}z^2}$ 3

Substituting equation (3) into equation (2) and rearranging yield

$$\Phi(X'\beta) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x'\beta} e^{-\frac{1}{2}z^2} dz \dots\dots\dots 4$$

Taking the inverse of the cumulative normal function in equation (4) gives estimates of the index

$$Z_i = \Phi^{-1}(P_i) = X_i'\beta + \mu_i \dots \dots \dots 5$$

The marginal effect is the change in the jth regressor on the conditional probability that an individual farmer participate in the intervention is derived as

$$\frac{\partial P_i}{\partial x_{ij}} = \Phi(X_i'\beta)\beta_j = \Phi[\Phi^{-1}(P_i)]\beta_j \dots \dots \dots 6$$

The empirical probit model is specified as:

$$(Par) = \beta_0 + \beta_1 \text{gender} + \beta_2 \text{Age} + \beta_3 \text{marital_status} + \beta_4 \text{household_size} + \beta_5 \text{Occupation} + \beta_6 \text{level_education} + \beta_7 \text{farmer_experiece} + \mu_i$$

The explanatory variables used in model are explained in the Table below. These variables were selected based on literature reviewed and observation.

Table 2.1.: Description, Measurements and Expected Signs of Variables in the Participation and the impact Models.

Variable	Description	Nature	Expected sign
Dependent variable			
Y1=Participation in ACDEP	1=Participation in ACDEP,0=otherwise	Dummy	Nil
Independent variable			
X1=gender	1=male, 0=otherwise	Dummy	+/-
X2=age	Number of years	Continuous	+
X3=Marital status	1=if married,0=otherwise	Dummy	+
X4=Household	Total household members	Continuous	+
X5=Occupation of the Head	1=if employed off-farm(excluding self employment), 0=otherwise	Dummy	-
X6=education of the head	1=if head has basic education and above,0=otherwise	Dummy	-
X7=Farming experience	Number of years in farming	Continuous	+

Source: Authors Construct (2020).

2.9.2 Discussion of the expected signs in the probit model

The expected sign of gender of the head was uncertain. This is because the literature shows contradicting evidence. Emerole (2012) found more men to participate in agriculture intervention than women when they have land. Adenoyu (2012) also found men work in the farms during dry and wet season than women. These studies related the findings to the fact that according to cultural norms, men are expected to provide food and other household requirements. However other studies reported that in developing countries men have access to productive resources than women and when these women can be supported, they could increase yields on their farms by 20-30 percent (FAO, 2010). A report compiled by Raney et al., (2011) highlighted that women play a big role in to agriculture in all regions of the world but it is difficult to show exact contribution in terms of quantity and nature. Age group of the household head has six categories, these are under20, 21-30, 31-40, 41-50 and 60+ The likelihood of household head in the last three categories to participate in agricultural intervention is expected to be positive because the reviewed studies revealed that agriculture is practiced by older people. Younger people still shuttle between off-farm employments. The results of the study conducted by Abdulai and Delgado (1999) showed that at younger ages an increase in age increases the probability of labour supply to the nonfarm sector and at older ages, the probability of participating in nonfarm work decreases as age increases. Thus it is expected in this study that older people will likely supply labour in agricultural production compared to young people.

Marital status of the household head was categorized into four categories- married, divorced, widowed and single. Married household heads were expected to have a positive sign because these household have dependents to support thus their participation in agricultural production plays an important role in provision of

subsistence at home. Household size with more adults results in division of labour, leading to the choice of agricultural intervention, also households with more working age adults means increased labour for income generating activities (Joshi et al., 2005). Hence, the expectation of this study with regards to household size is positive. Education of the household head has three categories; these are no formal education, primary, JSS/ Middle school, SHS/Vocational/ Technical school, diploma, bachelor's degree and post-graduate degree. The expected sign for this variable was negative. The rationale for the sign was that education increases the likelihood of acquiring employment in off farm sector. The education level of the household head is important as the determinant of labour supply as it captures a household's endowment with skills that are important for increasing labour productivity. Considering the current employment requirements in South Africa, it is expected that the likelihood of household with post-matric diploma or certificates to participate in agriculture will be negative significant because education increases the likelihood of this households to work off farm. Farming experience increases the marginal value of farm work relative to the marginal value of off-farm work (Beyene, 2008). So a positive sign is expected for this variable to indicate that more years of farming experience increases the likelihood of households to supply household labour into agricultural production. A study by Anim (2011) revealed a positive and significant farming experience at 5 percent which meant that high number of years of farming experience was associated with high farm labour supply. Toluwase and Apata (2013) revealed that farmer's involvement in agricultural organisation leads to improvement in agricultural productivity and better incomes. These benefits are triggered by exposure to agricultural information and access to capital which becomes easily accessible when farmers formed agricultural cooperatives; as such the variable agricultural cooperative

was expected to be positive indicating that the likelihood of household participation in agricultural production increases when household head is a member of agricultural cooperative. One of the sources off agricultural information is extension agents and therefore the variable access to extension service was expected to have a positive impact on the likelihood of household participation in agricultural production. The variable access to credit for the purchase of production input was hypothesized to have a positive sign indicating that access to credit increases the likelihood of participation in agricultural production. Households which have access to credit can be able to purchase inputs and expand production.



CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the methods and procedures used to collect and analyse data in order to Examine the contribution of NGOs (ACDEP) in the Development of rural communities in Ghana especially through agricultural intervention. It involves the research design, population, sample and sampling technique, instrument used for data collection, procedure for data collection and data analysis.

3.2 Research Design

The function of the research designed was to provide for the collection of relevant information with minimal expenditure of effort, time and money. In this study, the research methodology was designed to obtain data to find out the contributions of ACDEP in the area of rural communities through agricultural interventions. The method used in this thesis is a combination of both quantitative and qualitative forms of research designs.

3.3 Data Sources

Secondary and primary data were gathered to realize the objectives of this work. Secondary data refers to data that has been processed. These were data that were sought from the district and regional departments of agriculture, Department of Social Welfare and some selected NGOs in Bulinga. Primary data is data that is first hand and this was obtained through direct and indirect approaches. These comprises of the data that was obtained through interviews and questionnaires administered to members of the communities under study, staff of the selected NGOs, and Social Welfare.

3.4 Population

For the purpose of this research, the population comprises the selected communities that have benefitted from the activities of the ACDEP'S and the staff of ACDEP. This population was respondents from 11 communities in Bulinga and its environs.

Table 3.1 Beneficiary communities and institutions

COMMUNITIES	INSTITUTIONS
BULINGNA	ACDEP
CHAGU	ACDEP
TANPIENI	ACDEP
KOLIKPON	ACDEP
DUUSIE	ACDEP
FUNSI	ACDEP
GORIPIE	ACDEP
CHAASIE	ACDEP
DUPARI	ACDEP
JEYIRI	ACDEP
MANWE	ACDEP

Source field survey (2020)

3.5 Sample Size

The sample frame includes selected members of the population from which the sample is to be taken. Purposive sampling was used. Schools and organizations which were deemed relevant to the subject matter were chosen to gather data. The unit of analysis was the personnel in the institutions and communities. It is from the unit of analysis that the data required for this research was gathered for analysis.

3.6 Sampling

Specifically purposive sampling method was used. It was heavily dependent on the subjective decision of the researcher. This was because of the nature of objectives to

be achieved. Purposive sampling method gave the chance to target specific people within the population which the researcher perceived to possess the required information.

3.7 Questionnaire design and Administration

Based on the literature reviewed and field observations a set of proposed questionnaires, based on research questions and objectives for the study, were pre tested to test validity before the survey was conducted. The pre testing helped to eliminate unnecessary and inappropriate questions and hence was very necessary. Questionnaires were designed to gather information from the area of operation of ACDEP, beneficiary institutions and communities. Interviews were also conducted to gather information from the staff of the selected ACDEP.

The questionnaire involved both open ended and structured questions which made it simpler to assess the impact of the ACDEP on agriculture. The structured questionnaires contained responses that were supposed to be ticked and these options reflected the opinions, practices and attitudes of the respondents. The open ended ones gave opportunity for the respondents to express their personal views in plain language. The questionnaires were distributed to the various institutions and some were administered in the presence of the respondents whereas others were left to be filled and picked up later.

3.8 Method of Data Analysis

All responses were reviewed; the structured questions were coded with the use of SPSS and the open ended questions, interviews were first grouped and categorized before being coded and analyzed. Responses were then presented in the forms of descriptive statistics which gave a clear impression of the information gathered.

Graphs and pie chart were also used to create pictorial view of the impacts of NGOs (ACDEP) on Agriculture in improving the social standards of the people from the data gathered in Bulinga and its environs. In some instances, age differences were identified to influence some programs of the organizations which were pictorially shown. The data was analyzed using both quantitative and qualitative methods of analysis.

3.8.1 NGO'S (ACDEP) Intervention in Wa East District (Bulinga)

Analysis of ACDEP intervention in the Wa East District was done using both qualitative and quantitative methods. The quantitative methods were applied. They involve the frequency tables with simple proportions and chi-square analysis. Both descriptive and inferential statistics were used. This was done by generating cross tabulations on some of the respondent's activities being facilitated by ACDEP. The qualitative method was done by presenting the interview results from ACDEP officials in a form of quotations to support the statistical analysis results. Qualitative method was also used to arrive at how farmers living standard have improved through the acquisition of assets over the period compared with the period before the interventions.

3.8.2 Determinants of Farmers' Participation in NGO'S (ACDEP) intervention

Binary probit model is used by this study to estimate the factors that influence farmer's participation in agricultural intervention using the case of ACDEP. Farmer's participation was captured as a dummy variable with the value 1 assigned to a farmer who is participating in ACDEP's interventions and 0 otherwise. The empirical probit model is specified as:

$$(Par) = \beta_0 + \beta_1 \text{gender} + \beta_2 \text{Age} + \beta_3 \text{marital_status} + \beta_4 \text{household_size} + \beta_5 \text{Occupation} + \beta_6 \text{level_education} + \beta_7 \text{farmer_experiece} + \mu_i$$

Where β_0 is the constant term or intercept β_1-7 represent the parameters to be estimated and μ_i represents the error term. The maximum likelihood estimates of the parameters are generated using the STATA software.

3.8.3 Effect of household farmer participation in NGO'S (ACDEP) agricultural intervention on their livilihood

The effects of household farmer participation in ACDEP intervention was analyzed using descriptive and inferential statistics. The descriptive statistics used are summary statistics of variables comprising of both measures of central tendency and measures of spread. The inferential statistics consist of both parametric and non-parametric statistics. The parametric statistics used is mean test using the t-test and the non-parametric statistics used is the Pearson chi-square test of independence. Pearson chi-square test of independence was used to find if respondents' indication of acquisition of some livelihood outcome variables is independent of their participation in ACDEP intervention. Their responses (frequencies and percentages) were cross tabulated and this resulted in contingency tables that allowed the use of Peason chi-square. Besides, the livelihood outcomes of participants before ACDEP interventions were observed and compared with their current situation (After ACDEP intervention). The results were recorded in continuous variables that enabled the use of parametric statistics. The paired t test was used at various significant levels. The significant of t-values would mean a significant variation between observe values for the before and after intervention.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the results of the study and a detail discussion of the findings. The results are presented on different issues that have relations with the research objectives. The chapter contains different sections that discuss broad issues on the specific objectives of the study. The first analysis is on the background information of the respondents, followed by an examination of ACDEP intervention in the Wa East District. Other sections of the chapter are devoted to an analysis of factors influencing household farmers participation in ACDEP intervention and finally on the effects of participation in ACDEP intervention on livelihood.

4.1 Background Information of Respondents

Gender

The result of gender distribution is displayed in Table 4.1. About 74.7% of household heads is male while about 26.3% is female. This is inconsistent with the gender distribution in Ghana where 65.7% are male-headed and 34.7% are female-headed (GSS, 2012).

Table 4.1: Gender of Respondents

Gender	Frequency	Percent
Male	112	74.7
Female	38	26.3
Total	150	100

Source: Field Survey (2020)

From the survey, female headed households were those where the female head was either a widow or the man was physically or financially weak to carry out

responsibilities as the head. This explains the large representation of male heads in the sample.

Age of Respondents

The ages of respondents were recorded and categorized in to six; comprising of those under age 20 years, 21-30 years, 31-40 years, 41-50 years, 51-60 years and those above age 60. From Figure 4.1, only 1 respondent was found to be less than 20 years and this represent 2% of the sample. Besides, 37 respondents who represent 26.7% are between the age category of 21-30 years, 54 respondents who represent 32% are between the age category of 31-40 years. It was also discovered that 29 respondents are within the age category of 41-50 years and this represent 20%. Those who fall within the category of 51-60 years are 28 in number and they represent 16.7%. Finally, only 1 respondent was found to be more than 60 years and this represent 2.7% of the sample.

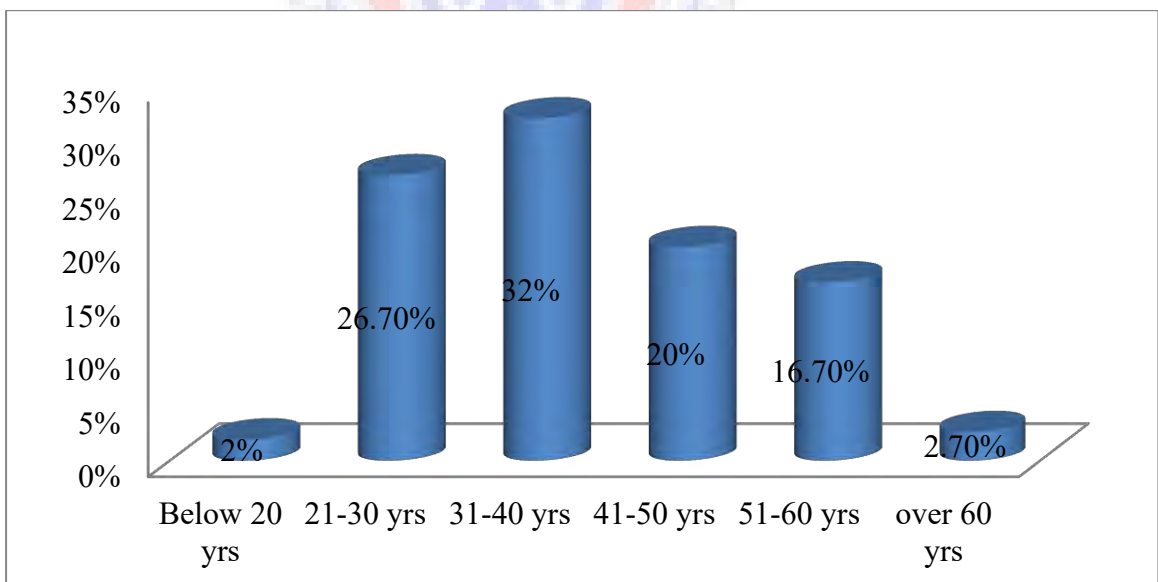


Figure 4.1: Age Distribution of Respondents

Source: Field Survey (2020)

In Figure 4.1 above, it can be seen that majority of the farmers fall within 31-40 age bracket which is characterised by positive skewness. The findings imply that majority of the respondents fall within the age category of 31- 40 years. Besides, people take up farming as they are getting closer to the modal age category and stop as they getting to 60 years old. The age categories have a relation with gender of the respondents. This was discovered by generating a cross tabulations of gender and age of the respondents as shown in Table 4.2.

Table 4.2: Age of Respondent by Gender

Age Category	Gender		Total
	Male	Female	
Under 20	1 (100.0%)	0 (0.0%)	1 (100%)
21-30	18 (48.6%)	19 (51.4%)	37 (100%)
31-40	26 (48.1%)	28 (51.9%)	54 (100%)
41-50	23 (79.3%)	6 (20.7%)	29 (100%)
51-60	28 (100.0%)	0 (0.0%)	28 (100%)
Over 60	1 (100.0%)	0 (0.0%)	1 (100%)
Total	97(64.7%)	53(35.3%)	150 (100%)

Source: Field Survey (2020)

The distribution suggests that only females within the age categories of 21-30, 31-40 and 41-50 years are engaged in farming activities in the District. On the other hand male respondents are found in all the categories of ages as shown in the Table 4.2. This also implies that females enter into farming as at age 20 and leaves at age 50. It means that male farmers remain longer in the business than their female counterparts.

Marital Status of Respondents

The respondents of the study have different marital status but generally have been grouped into those currently in marital relations and those who are not (single, devoice, widow, widower). From Table 4.2, 90 respondents were found to have been

in a marital relation with their spouses and this represents 69.3% of the sample. On the other hand, 51 respondents are currently not in a marital relationship and this represents 30.7%.

Table 4.3: Marital Status of Respondents

Marital Status	Frequency	Percent
Currently married	90	60.3
Not in a marital relation	60	39.7
Total	150	100

Source: Field Survey (20120)

The results in Table 4.2 implies that more people are in a marital relationship than those who are currently not. Households in marital relations will have an advantage of sharing ideas regarding their farm management and livelihood activities. Besides, people in a marital relationship can engage in different aspects of livelihood activities and this can improve their income towards meeting the household needs.

Household Size

Mean household size of farm households in the district is about 6 people and ranges from 1 to 15. This average size is about 0.2 higher than the GSS (2012) average of 5.8 for the district. The reason for this difference is attributed to the composition of the sample. Agriculture related households especially smallholders are found in the rural areas where the household sizes are large. One potential for the large size is that it ensures adequate supply of family labour for production (Martey et al., 2012). Also, Al-Hassan (2008) argues that large families enable household members to earn additional income from non-farm activities.

Table 4.4: Descriptive Statistics of Respondents' Household Size

Household size	N	Min	Max	Mean	Std Deviation
Household size	150	1	15	6.00	2.809
Household size age >17<60	149	1	10	3.08	1.540

Source: Field Survey (2020)

The mean values of the two variables in Table 4.3 imply that household members who are not in the labour force category constitute almost half of the entire members of the households as suggested by the mean values. This means that much of the farm or livelihood activities will be done by half of the members of the households if international labour laws (which regulate child labour) are to be adhered to.

Level of Formal Education

It was discovered from the study that the respondents have different levels of formal educational attainment. The various categories identified include those with primary school education, Junior High (JHS)/Middle School, Senior High School (SHS)/vocational education, Diploma and those with Bachelor Degree. The distribution of this is shown in Figure 4.2. From the figure, 20 respondents who represent 13% have no form of formal education. Figure 4.2 indicate that 29 respondents (19.3%) have Primary education, 50 respondents (33.3%) have JHS/Middle school certificates, 34 respondents (22.7%) completed SHS/vocational/Technical School, 10 respondents representing 7% have Diploma Degree and 7 respondents (4.7%) attained Bachelor Degree.

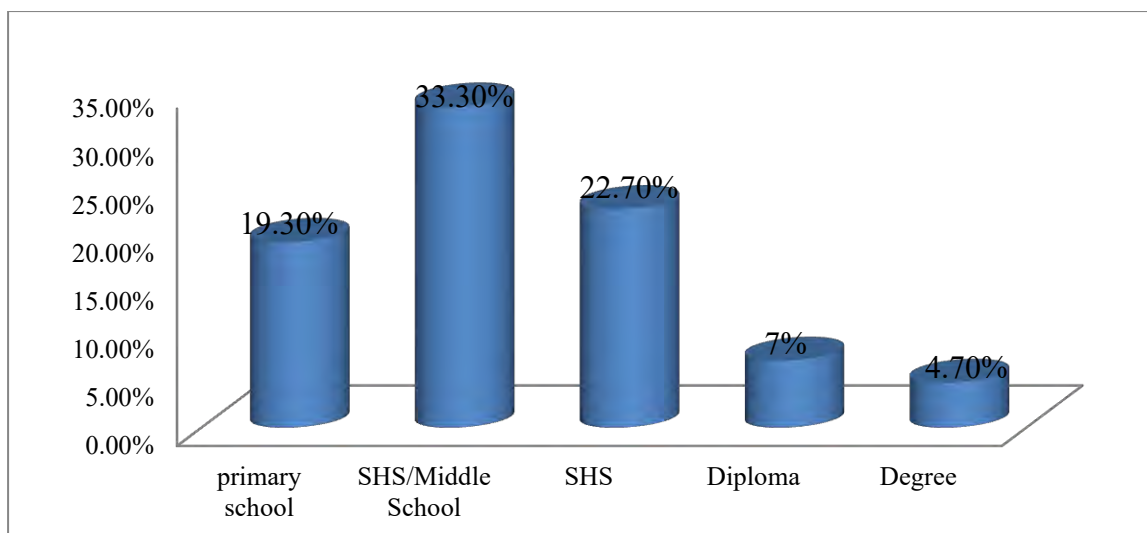


Figure 4.2: Level of Formal Education

Source: Field Survey (2019)

It can therefore be concluded that most of the respondents representing about (87%) were educated, but to different levels. The mean years of education also shows that on average the highest level of education attained by a household head is primary education (approximately primary 3). The result is consistent with the finding of the GSS (2008) that about half of adults in Ghana neither attended school nor completed middle school/JSS. This could have some negative influence on agriculture in terms of technology adoption and application of farm inputs.

Farm Size and Farming Experience

The size of farm holdings were observed in acres and converted into hectares (a standard measurement). Descriptive statistics (see Table 4.4) of this revealed a minimum farm size of 0.41 (ha) and a maximum of 28.89 (ha). The mean farm size is 4.89 (ha) with a standard deviation of 4.59. The mean farm size suggests that most of the farmers are large scale farmers once they hold an average farm size of more than 3 (ha). Households have on the average 15 years of farming experience. The minimum and maximum farming experiences are 3 and 41 years respectively, with a standard

deviation of 8.57. The mean farming experience is sufficient for farmers to be abreast with the expertise of farming and can quickly adopt improved farming technology even though majority are without secondary education.

Table 4.5: Descriptive Statistics of Farm Size and Farming Experience

Farm Size and Farming Experience	N	Min	Max	Mean	Std Deviation
Farm size (ha)	150	0.41	28.35	4.89	4.59
Years of farming experience	150	3	41	15.38	8.70

Source: Field Survey (2020)

Table 4.4 suggests that some farmers have kept large tracks of farm size as large as 28 (ha) and others too have gain long years of experience in farming.

Membership to Farmer Based Organisations (FBOs)

It was realised that some of the participants of the study belong to associations that share information regarding their farming activities. Such associations often receive external facilitation and that qualified them as Famer Based Organstions. The results point out as shown in Table 4.5 that 92 respondents (61.3%) were found to be members of FBOs in the district while the remaining 58 members (38.7%) are not members of such associations.

Table 4.6: Membership to Farmer Based Organisations

Membership Status	Frequency	Percent
Member	92	61.3
Not a member	58	38.7
Total	150	100

Source: Field Survey (2020)

Most of the respondents are members of Farmer of FBOs. This enables them to have access to information regarding their farming practices. Besides, FBO members could have information regarding programmes and other interventions in agricultural activities if such FBOs are functioning.

4.2 NGO's (ACDEP) Intervention in WA East District

ACDEP intervention in the Wa East District was examined and several issues uncovered. Among them include mobilization of local farmers for facilitation, promotion of selected crops to enhance food security, and facilitation of farm management practices for higher output. This finding was discovered through an interview with a project officer of ACDEP in an interview.

During the interview, the respondent explained the various intervention of ACDEP in the Wa East District in the following words. "ACDEP seeks to improve livelihood of rural households in general. The organization therefore, seeks to achieve that through capacity building of the poor in various forms such as mobilization of the rural poor for facilitation, promotion of agricultural activities and facilitation for farmer adoption of better practices form improved output""

The above quotation suggests that ACDEP intervention in the Wa East District aim at promoting sustainable livelihood of the rural poor in Bulinga and its environs. The organization therefore, tries to achieve that through capacity building of rural farmers. It is evidence from the results that the main activities of ACDEP in building the capacities of farmers include among other things mobilization of farmers into Farmer Based Organisation, promotion of the cultivation of selected crops and improvement in farm practices to raise their production levels. The main interventions are therefore considered for further discussion as follows.

4.2.1 Mobilization of farmers for facilitation

The results of the study confirmed that some farmers in the Wa East District are working with ACDEP. The study identified 85 of them out of the total of 150 respondents. The respondents of the study as shown in Table 4.6 therefore consist of 56.7% participants of ACDEP intervention and 44.3% of non-participants. The participants are those mobilized by Irrespective of whether one participates in ACDEP intervention or not, some of the farmers have been using improved seeds. From Table 4.6, 109 respondents who represent 72.7% have been using improved seeds while 27.3% were found not to be using improved seeds. ACDEP and giving facilitation in their production or livelihood activities.

Table 4.7: Participation in ACDEP and Use of Improved Seeds

Variable	Yes	No	Total
Participation in ACDEP	85(56.7%)	65(44.3%)	150(100%)
Use of improve seeds	110(73.7%)	40(26.3%)	150(100%)

Source: Field Survey (2020)

The use of improved seeds is one of a recommended practice for higher crop productivity. An inquiry was therefore, made to know whether access to improved seeds was part of ACDEP intervention. This was done by asking the respondents to indicate their sources of improved seeds. The results were obtained and illustrated in Table 4.7.

Table 4.8: Source of improved seeds

Source of improve seeds	Frequency	Percent
ACDEP	86	78.9
Government offices	4	3.7
Market	19	17.4
Total	109	72.7

Source: Field Survey (2020)

From Table 4.7, 79 of the 109 respondents who use improved seeds had them, through ACDEP facilitation, 4 respondents had through government offices and 19 respondents accessed them from the open market. Most (78.9%) of the respondents had their seeds from ACDEP and this implies that ACDEP intervene in the Wa East District through facilitating farmers access to agricultural inputs such as improved seeds. This result was supported and confirmed through an interview with a field officer of ACEP. The key informant made his point regarding the role of ACDEP in the use of improved seeds by farmers as follows: “One of the key activities of ACDEP is to discourage farmers from using grains as seeds. As a result, ACDEP has collaborated with major agribusiness firms to procure certified seeds for farmers under its facilitation. ACDEP has been doing this facilitation for more than six years”.

From the interview, it can be argued that ACDEP have been making efforts to arrange with producers and sellers of certified seeds and procure such seeds for farmers. This is an enabling effort towards developing the value chain of producers in the Wa East District for sustainable production. Besides, the intervention of ACDEP creates market for seeds dealers. The results also indicate that farmers in the Wa East District have been receiving facilitation by ACDEP for considerable period of time. This has been confirmed by the respondents as shown in Figure 4.3.

From the figure, out of the 86 respondents who are beneficiaries of ACDEP facilitation, 8.8% have benefited from a period of 1 to 2 years, and 58.8% benefited for 3 to 4 years. It is also indicated that 31.3% benefited from 5 to 6 years while 1.3% benefited for 6 years or above.

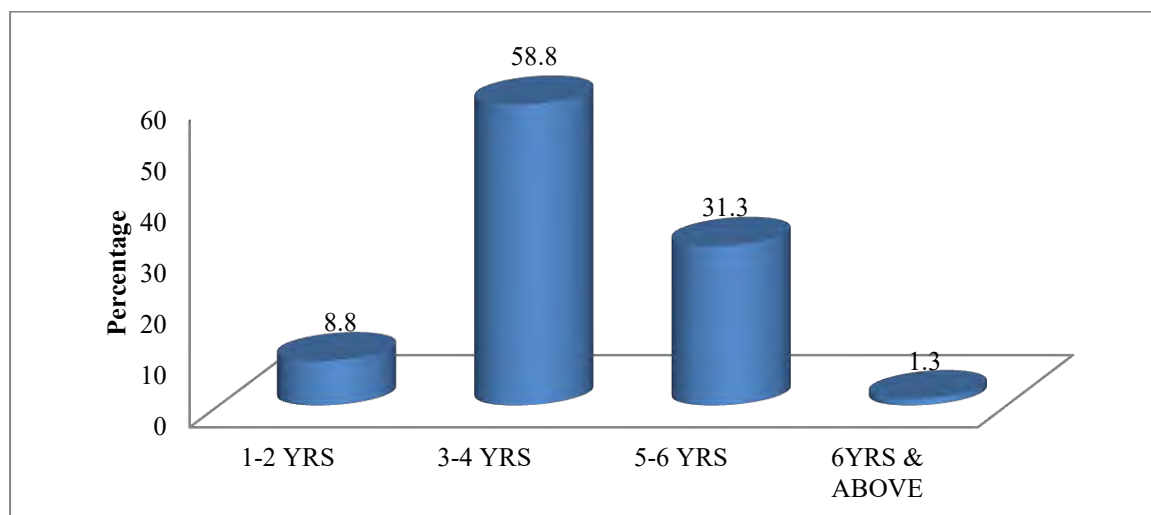


Figure 4.3: Years of Engagement with ACDEP

Source: Field Survey (2020)

4.2.2 Promotion of selected crops to enhance food security

To embark on its food security campaigns, ACDEP is promoting the cultivation of selected crops in the Wa East District in Bulinga and its environs. Among these crops as discovered by the study are maize and soybeans. The respondents were asked to indicate the crops they cultivate under ACDEP facilitation. As shown in Table 4.8, 44.7% of the beneficiaries of ACDEP interventions indicate that they produce both Maize and soybean while 8.7% maintained that they cultivate only maize under ACDEP facilitation.

Table 4.9: Crops under ACDEP Facilitation

Type of crop produced under ADECP Facilitation	Frequency	Percent
Maize and soya beans	70	47.7
Maize	10	5.7
Total	80	53.3

Source: Field Survey (2020)

The results in Table 4.8 imply that maize and soybean are the key crops being promoted by ACDEP. They are considered as essential crops that can achieved food security objectives as well as commercialisation. This assertion may be valid because all the participants of ACDEP cultivate at least one of the crops. The scale of production of the crops under ACDEP facilitation varies per farmer and this means that farmers under the intervention have relative capacities in their production process. The scale of production in terms of land size and output is shown in

Table 4.10: Descriptive Statistics of scale of production under ACDEP Facilitation

Scale of production	N	Min	Max	Mean	Std. Deviation
Number of acres of maize	80	3	50	14.38	9.926
Maize output (bags*) per Acre	80	14	25	18.28	2.439
Number of acres* of soya Beans	67	1	18	4.66	3.241
Soybean output (bags) per acre	67	6	12	8.28	1.535

*Bag equivalent to 100kg; *1 acre equivalent to 0.405 hectare

Source: Field Survey (2020)

As indicated in Table 4.9, all the 80 farmers under ACDEP facilitation have cultivated maize and their scale of production by land size varies from a minimum of 3 acres to a maximum of 50 acres. The mean land size of maize is 14.38 with a standard

deviation of 9.26. Besides, maize output in bags (100kg) ranges from a minimum of 14 bags to a maximum of 25 bags. The mean output of bags in Table 4.9 is 18.28 with a standard deviation of 2.43. The results in Table 4.9 also indicate that 67 farmers under ACDEP facilitation cultivate soybeans. It was observed that the land under cultivation vary from a minimum of 1 acre to a maximum of 18 acres per farmer. The mean land size of soybean is 4.66 with a standard deviation of 3.24. Various output of soybean was discovered and this ranges from a minimum of 6 bags to a maximum of 12 bags.

The mean output of soybean in bags is 8.28 and this has a standard deviation of 1.53. The average yield of maize is higher than soya beans as a result of the use of too much fertilizer on maize farms than on soya beans farms. It was gathered that maize is basically for consumption while soya beans is treated as a cash crop in the district.

4.2.3 Facilitation of farm management services for higher output

ACDEP also engages in providing farm management practices for the beneficiaries. From Table 4.10, some of the activities include fertilizer application, supply of farm implements to farmers, facilitation of farmers to access tractor services, facilitation of the delivery of extension services, access to credit and facilitating farmer access to training services. The results in the table suggest that almost all the respondents have been benefiting these services from ACDEP.

Table 4.11: Intervention through specific farm activities

Activity	Yes	No	Total
Application of fertilizer	80 (100%)	0 (0.0%)	80 (100%)
Obtained fertilizer from ACDEP	79 (98.75)	1 (1.25)	80 (100%)
Received farm implement from ACDEP	80 (100%)	0 (0.0%)	80 (100%)
Tractor service	80 (100%)	0 (0.0%)	80 (100%)
Extension service	80 (100%)	0 (0.0%)	80 (100%)
Credit	80 (100%)	0 (0.0%)	80 (100%)
Training	80 (100%)	0 (0.0%)	80 (100%)
Guaranteed prices	80 (100%)	0 (0.0%)	80 (100%)

Source: Field Survey (2020)

From Table 4.10, the respondents confirmed that some services have been provided for them by ACDEP. For example, all the 80 respondents, except one indicated that they receive fertilizers from the organization. Besides, all have maintained that they received farm implement from ACDEP. The other services received include tractor services, extension services, credit and training for better management practices. It could be seen that ACDEP interventions have a focus on improving the agricultural practices of farmers in the district.

4.3 Factors influencing Farmers' Participation in ACDEP Intervention

Probit regression analysis was conducted to identify factors that significantly influence household participation in ACDEP development interventions. Participation (whether an individual is currently under ACDEP facilitation) was regressed on gender, age, marital status, household's size, occupation (besides farming) level of education, and farming experience.

From the results in Table 4.11, a likelihood ratio (LR) statistic of 180.92 was significant at less than 1%. This means that at least one of the variables in the model has a significant effect on farmers' decision to participate in ACDEP intervention. Besides, the significance of the likelihood ratio statistics means that the explanatory variables jointly influence the farmers' decision to participate. Five (5) out of the 7 covariates were found to have significant effect on the likelihood of farmer participation. They include age, marital status, household size, occupation, and farmer experience in farming. All these variables were found to be in conformity with the a priori expectations. Besides, gender, and level of education have no significant effect on the probability of participation. The significant variables are considered for further discussion as follows:

Table 4.12: Probit Estimates of Factors Influencing Participation in ACDEP

Variable	Coef.	Std. Err.	Z	[95% Conf. Interval]		Marginal Effects
Gender	0.2499	0.631	0.40	-0.987	1.486	0.0653
Age***	-0.3307	0.090	-3.66	-0.508	-0.154	-0.0835
Marital_status***	-1.9634	0.767	-2.56	-3.466	-0.461	-0.4205
Household_size***	1.5641	0.378	4.13	0.822	2.306	0.3952
Occupation*	1.8093	1.027	1.76	-0.204	3.823	0.2459
Level_education	0.7466	0.771	0.97	-0.765	2.258	0.2182
Farmer_experience***	-0.1360	0.053	-2.56	-0.240	-0.032	-0.0343
Cons	6.4847	2.369	2.74	1.841	11.129	

N=150, LR $\chi^2(7) = 180.92$, Prob > $\chi^2 = 0.00$, Log likelihood = -13.177 Pseudo R² = 0.8728

Source: Field Survey (2020)

4.3.1 Age

Age of the respondent was found to have a significant influence on farmer participation in ACDEP interventions in the Wa East District. Its coefficient in Table 4.11 is negative but significant at 1%. This means that age of respondent is inversely related to participation in ACDEP development interventions. The marginal effect is -0.0835 and this implies that an increase in farmers' age by 1 year will reduce his likelihood of participation in ACDEP programme by 8.35%. This finding suggests that young farmers are more motivated to participate in the development interventions under ACDEP facilitation than older farmers. One possible explanation could be the fact that older people may be complacent of themselves and do not see the need to join any development interventions. On the other hand, various development interventions nowadays are targeting the youth as they remain the potential for national development. Such thoughts could influence the programme objectives towards developing the youth in their livelihood drives. This is consistent with the finding of Randela et al. (2008) who observed that younger farmers are expected to be progressive, more receptive to new ideas and to better understand the benefits of agricultural interventions.

4.3.2 Marital status

Marital status was measured as a categorical variable comprising of people who are currently married, those separated through divorce, widow/widower, and those that have not yet entered into any marital relationship. This variable was then transformed into two categories; consisting of those who are currently in their marital relationships or otherwise. They generated a dummy variable that takes the value of 1 if an individual is currently in a marital relationship and 0 if otherwise. From Table 4.12, the sign of the coefficient of marital status is negative and was found to be significant

at 1%. This means that being in a marital relationship is inversely related to participation in ACDEP facilitation in the District. Its marginal effect was estimated at -0.4205 and this implies that being in a marital relationship is associated with 42.05% likelihood of not participating in the programme. This observation was not expected as it is not in conformity with the a-priori expectation. It was expected that people in a marital relationship with their livelihood as farming would have been interested in joining such development interventions to take advantage of their external facilitation. However, being in a marital relation could be an opportunity for the spouses to pull together their resources for production activities and this could reduce their probability of relying in external agencies for support in their farming activities.

4.3.3 Household size

Household in this study represents the number of people in the same house with similar expenditure decisions. Such people often eat from the same source or pot. This was included in the model predicting participation in ACDEP development intervention. It was discovered from Table 4.12 that the coefficient of this variable is positive and significant at 1%. This means that the number of people in a household has a direct influence on the likelihood of participation.

Further analysis provides the marginal effect to be 0.3952 and this means that additional member to a household in the district will increase the probability of participation by 39.52%. This indicates that households with more members are motivated to participate in development interventions in the district.

4.3.4 Occupation

In this study the respondents were basically household farmers who depend largely on crop production as a means of livelihood. However, some have engaged in off-farm employment in order to raised income to augment their produce from the farm. This was considered a dummy variable and included in the model predicting participation in ACDEP development intervention.

An individual respondent with off-farm employment takes a value of 1 and 0 if otherwise. From Table 4.12, the coefficient of this variable is positive and is significant at 10%. This means that people with off-farm employment as a secondary occupation are more likely to participate in ACDEP intervention. The corresponding marginal effect of this variable as shown in Table 4.12 is 0.2459 and this suggests that having an off-farm employment besides, farming is associated with 24.59% likelihood of participating in ACDEP intervention relative to those who have not taken off-farm employment. This observation is in conformity with the expectation since people with this status are prepared to scan their immediate environment to discover opportunities that will support their livelihoods. The passion for additional income sources to better their households living will drive their passion for participation to see what benefit they could get. Those without off-farm employment may be reluctant to explore and may not be interested in trying out new things such as joining a development intervention.

4.3.5 Experience in farming

The farmer experience in farming is a continuous variable, measured by the number of years engage in farming activities. This was included in the model predicting participation in ACDEP interventions. From Table 4.12, the coefficient of this

variable appeared negative and highly significant at 1%. This means that experience in farming and participation in ACDEP development intervention are negatively related. The marginal effect predicting the probability is -0.0343 and this means that an increase in a farmer experienced by 1 year will reduce the likelihood of participation by 3.43%. Weir (1999) also found a negative relationship between farming experience and agricultural production. It was highlighted that older farmers with many years of farming experience are not able to produce as much as young household heads. This discourages older household heads with many years of farming experience to practice agriculture and thus they rely on social transfers.

4.4 Effects of ACDEP Intervention on Livelihood of Households

It is expected that the interventions of ACDEP in the Wa East District especially Bulinga and its environs improves the livelihoods of beneficiary households. The programmes effect on households is measured using proxy variables that depict changes in households' livelihoods assets and outcomes. First, this section therefore, analyses the livelihood outcome between participants and non-participants of ACDEP intervention. Secondly, the livelihood outcomes of participants before and after ACDEP intervention have been analyzed.

4.4.1 Livelihoods outcomes between participants and non-participants in

ACDEP Interventions

Various cross tabulations were generated on some livelihood outcomes by participation and non-participation in ACDEP interventions. The key indicators used include membership to an FBO, having savings at the bank, buying food during deficit. Other variables include asset ownership such as ownership of a house roofed with zinc, ownership of land, ownership of livestock, ownership of motorbike and

ownership of a bicycle. Besides, household ability to meet various expenses such as medical expenses, school fees, school uniform. The relative frequencies of the responses are shown in Table 4.12.

Further analysis is done on whether the outcomes of these variables are independent on participation in ACDEP intervention. This was validated by performing Pearson chi-square test of independence. The chi-square test values and their significance (P-values) are also shown in Table 4.12. With the exception of ownership of land, ownership of livestock, and ability to pay for medical expenses, the chi-square values for all the remaining variables were significant at least 10%. The significance of these variables means that the livelihood outcomes are not independent of participation. The variables are considered for further discussion as follows:



Table 4.13: Livelihood Outcome between Participants and Non-participants

Variables	Participation in ACDEP		Total	Chi2	Pvalue
	Participants	Non-participant			
Member of FBO	Yes 80 (92.0%)	7 (8.0%)	87(100%)	124.13	0.000
	No 0(0.0%)	63 (100%)	63(100%)		
Having bank Savings	Yes 41(78.8%)	11(21.2%)	52(100%)	20.81	0.000
	No 39(39.8%)	59(60.2%)	98(100%)		
Buying food during deficit	Yes 29(30.9%)	65(69.1%)	94(100%)	51.13	0.000
	No 51(91.1%)	5(8.9%)	56(100%)		
Ownership of a house roof with zinc	Yes 45(65.2%)	24(34.8%)	69(100%)	7.2	0.009
	No 35(43.2%)	46(56.8%)	81(100%)		
Ownership of land	Yes 46(50%)	46(50%)	92(100%)	1.06	0.319
	No 34(58.6%)	24(41.4%)	58(100%)		
Ownership of Livestock	Yes 23(45.1%)	28(54.9%)	51(100%)	2.10	0.169
	No 57(57.6%)	42(42.4%)	99(100%)		
Ownership of Motorbike	Yes 43(61.4%)	27(38.6%)	70(100%)	3.45	0.073
	No 37(46.2%)	43(53.8%)	80(100%)		
Ownership of a bicycle	Yes 47(61.8%)	29(38.2%)	76(100%)	4.48	0.049
	No 33(44.6%)	41(55.4%)	74(100%)		
Ability to pay for medical expenses	Yes 40(50.6%)	39(49.4%)	79(100%)	0.48	0.515
	No 40(56.3%)	31(43.7%)	71(100%)		
Ability to pay for school fees	Yes 36(70.6%)	15(29.4%)	51(100%)	9.24	0.003
	No 44(44.4%)	55(55.6%)	99(100%)		
Ability to pay for school uniform	Yes 47(81%)	11(19%)	58(100%)	29.15	0.000
	No 33(35.9%)	59(64.1%)	92(100%)		

Source: Field Survey (2020)

The results in Table 4.13 indicate that 92% of members of FBO are participants of ACDEP intervention and only 8% are non-participants. The chi-square value associated with this outcome is 124.13 and this is significant at 1%. This means that there exists significant variation between participants and non-participants in ACDEP interventions in terms of having the opportunity to join an FBO. Farmer Based Organizations are platforms that bring useful information to farmers and granting them access to agricultural inputs and other services. They also serve as guarantees

for credit for further production activities. The relatively larger difference in the number of FBO members among participants means that ACDEP has created an opportunity for its beneficiaries to link up with other service providers and better alternatives for livelihoods enhancement.

The results also show that having savings in a bank vary among participants and nonparticipants. Out of 52 respondents who have made savings in a bank, 78.8% are those under ACDEP facilitation and the remaining 21.2% are non-participants. The chi-square test value of 20.8 is significant at 1%, and this implies that having savings in a bank is not independent on participation. ACDEP has been able to facilitate its beneficiaries to open accounts with various rural banks and making savings. The purpose is to grant the households credit worthiness through periodic savings so that they will be able to access investment credit at any point in time. It was noted that only 39.8% of those who buy food during deficit were households under

ACDEP facilitation and the remaining 60.2% were non-beneficiaries of ACDEP. The chi-square test value (51.13) is significant at 1% and this means that purchasing of food to supplement production is not independent on participation in ACDEP intervention. What this suggests is that beneficiaries of ACDEP have been able to produce enough to ensure food security. Such households do not have deficit within the year. On the other hand, majority of those who buy food to support their yearly production are the non-participants of ACDEP interventions. The production capacities of these households are said to be low and do not guarantee them enough for the year.

Ownership of assets such as a house roofed with zinc, motorbike, and bicycle are all significantly (at least 10%) dependent on participation in ACDEP interventions. The

associated chi-square test values of these variables are significant and relatively more participants have acquired these assets than those who are not under ACDEP facilitation. However, some assets such as ownership of land and livestock are independent on participation. Their associated chi-square values are not significant even at 10%. One main explanation for this is that land has been traditionally owned and can be inherited in most rural areas of northern Ghana. This means that households can acquire it irrespective of their participation in development interventions.

Households' ability to pay for expenses, such as school fees and school uniform show significant difference among participants and non-participant in ACDEP interventions. As shown in Table 4.12, the chi-square values of these variables are significant at 1% and this provides evidence that they are not independent of participation. More participants have acquired these assets more than the non-participants and this can be attributed to the facilitation given by ACDEP. However, households' ability to pay for medical expenses is independent on participation because its associated chi-square value is not significant even at 10%. The possible reason for absence in variation could be the fact that most households nowadays covered under the National Health Insurance Scheme as a basic requirement. This has nullified the effect of meeting large amount of health expenses that will be beyond the household ability to pay.

4.4.2 Livelihood outcomes before and after participation in ACDEP

interventions

Another analysis was done on the participants of ACDEP interventions to know whether their livelihood outcomes improve over the years since they joined the programme. The analysis was done by comparing their livelihood outcomes before and after the intervention using paired sample t-test as shown in Table 4.13. From the table, the variables considered include number of meals taken per day, yearly income, savings, number of livestock, rooms roofed with zinc, number of motorbikes, and number of vehicles. The various statistics generated are shown in Table 4.13. There exist significant differences at 1% in the means of all the variables between household livelihood situation before and after ACDEP intervention. This means that households' livelihood situation has improved after they have participated in ACDEP interventions.

The statistics in Table 4.13 were generated by taking the difference of household livelihood outcome after the intervention and their previous situation before they joined the intervention. The mean differences were estimated and all were significant at 1%.

Table 4.14: Paired Samples Test of Livelihood Assets of households before and after ACDEP Interventions

Livelihood Assets (Differences before and after ACDEP Interventions)	Paired Difference			Std Error	t	df	2 tailed	sig		
	Mean	Std Dev.	Mean						95% confidence	
									Lower	Upper
Pair1: Number of meals taken per day - Number of meals taken per day before ACDEP	1.32	0.70	0.079	1.16	1.482	16.74	79	0.000		
Pair2: Average income per year – Average income per year before ACDEP	973.31	1068.7 3	119.488	735.47	1211.14	8.14	79	0.000		
Pair3: Average amount of money saved – Average money saved before ACDEP	363.06	368.13	41.159	281.13	444.98	8.82	79	0.000		
Pair4: Livestock owned – Livestock own before ACDEP	11.01	8.91	1.003	9.01	13.01	10.98	79	0.000		
Pair5: Rooms roofed with zinc – Rooms roofed with zinc before ACDEP	3.17	2.72	0.304	2.56	3.78	10.43	79	0.000		
Pair6: Bicycles own – Bicycle own before ACDEP	1.37	0.76	0.086	1.20	1.54	15.98	79	0.000		
Pair7: Motorcycles own – Motorcycles own before ACDEP	0.83	0.56	0.063	0.71	0.96	13.34	79	0.000		
Pair8: Vehicles own – Vehicles own before ACDEP	0.33	0.52	0.059	0.22	0.45	5.73	79	0.000		

Source: Field Survey (2020)

From Table 4.13, the difference in mean values implies that households after joining ACDEP have their number of meals per day increased by 1.32, and annual income improved by GH¢973.31. Their savings in the bank too has improved by GH¢363.06 and their livestock increased by 11. It has also been noted that households under ACDEP facilitation have increased their number of rooms roofed with zinc by 3, increased their bicycles by an average of 1.3. The average increase in their motorcycles is 0.83 and that of their vehicles is 0.33. In all cases, the study has recorded a significant increase in their livelihood's outcomes.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the major findings, the conclusions and the policy recommendations arising from the conclusions of the study. Limitation of the study and suggestions for future research are also presented.

5.1 Summary of the Study

Based on the analysis carried out in this study, the following major findings are presented.

1. The participation of ACDEP agricultural intervention has contributed to the increase of maize and soya beans production by a minimum of 14 and 6 bags per acre to a maximum of 25 and 12 bags per acre respectively.
2. Households after joining ACDEP have their number of meals per day increased by an average of 1.32 meals per day.
3. Households after joining ACDEP have their annual income improved by an average of GH¢973.31 and their savings in the bank too has improved by an average of GH¢363.06
4. Households under ACDEP facilitation have increased their number of rooms roofed with zinc by an average of 3, increased their bicycles by an average of 1.3, an average increase in their motorcycles is 0.83 and that of their vehicles is 0.33
5. ACDEP supported farmers with farm inputs, access to credit and guarantee prices, access tractor services, facilitation of the delivery of extension services, and access to training services.

6. The decision to participate in ACDEP agricultural intervention in the district was significantly determined by age, marital status, household size, occupation, and farmer experience in farming.

5.2 Conclusions of the Study

Based on the major findings of this study, the following conclusions are drawn.

1. The study revealed that ACDEP provides training to small household farmers, as well as inputs and implements at reduced costs. Also, in collaboration with the District agricultural extension officers ACDEP helps farmers access to extension services as well as inputs and implement.
2. A strong case can be made in favour of the fact that maize is a household consumption commodity mainly produced as a staple. While soya beans is produced for both consumption and as a cash crop in the district.

5.3 Policy Recommendations

Based on the conclusions of this study, the following recommendations are distilled.

1. Although the interventions implemented by ACDEP have been relevant and made a positive impact amongst beneficiary households, their community impact has been modest as few people benefited. It is recommended that the programme expanded to cover many more farmers.
2. Ministry of Food and Agriculture, NGOs and private practitioners in agricultural industry should include in their sensitization programmes as ways of enhancing farmers to adopt better farm management practice, to increase production.
3. To ensure increase production and productivity of maize and soya beans, there should be the delivery of effective and proactive extension service alongside

effective monitoring and supervision to ensure that what is delivered to farmers is effectively implemented by them. Extension agents should be well motivated through the provision of adequate fuel and field allowances to regularly visit and monitor the progress of farm households.

4. Based on the findings that access to credit is an influencing factor to both maize and soya beans output, MoFA and other stakeholders should establish rural agricultural finance scheme aimed at addressing the credit needs of smallholder farmers. The development of the informal credit market should also be considered.
5. NGOs who are into agriculture should be encouraged to go into the rural poor districts in the upper west region to help improve farmers livelihoods.

5.4 Limitation of the Study

Most farmers in Bulinga and its environs have poor or no record keeping systems. The lack of good record keeping system makes it difficult to obtain accurate production data. Bad road, period of data collection, and limited resources were also some limitations as these factors made it difficult for the study to cover many ACDEP intervention communities in the study area. The rainy season is at its peak between August and October in the study area.

However, this was the only timely period for data collection, if this project was to be completed within its required schedule for the successful and timely completion of the academic program.

5.6 Suggestions for Future Research

Based on the findings of the study, especially on the effects of ACDEP agricultural intervention on the output of household farmer, it is suggested for future research to consider the challenges of ACDEP in the upper west region of Ghana.



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APPENDIX

Questionnaires for Households Heads

UNIVERSITY OF EDUCATION, WINNEBA

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF ECONOMICS EDUCATION

This questionnaire is seeking your opinion in an effort to solicit information to write a thesis on the topic „Contribution of NGOs to rural development: A case of ACDEP’s Agricultural intervention in Wa East district“. This study is being conducted in partial fulfillment of the award of a master’s degree (MSc Economics Education) your opinion is therefore needed for academic purpose only and will be treated confidentially.

Community:

SECTION A- BACKGROUND INFORMATION OF THE RESPONDENT

(Demography)

1. Sex: Male Female
2. Age: Under 20 21-30 31- 40 41-50 51-60 60+
3. Marital status: Single Married Divorced/Separated Widow/Widower
4. Household size.....
5. Off farm employment not employed
6. What is your highest level of education? No formal education Primary JSS/Middle school Secondary Education (SHS/Vocational/Technical school) Diploma Bachelors Post graduate
7. Farm size in acres -----
8. How many years of farming experiences do you have? -----
9. Are you a member of a famer-based organization? Yes No
10. Do you use improved seeds? yes No

11. Where do you get improved seeds? Through ACDEP Government offices
Market

12. Are you a participant of ACDEP intervention programmed? Yes No

If no end of interview

13. What type of crops do you farm? Tick if more than one. Maize soya beans
sorghum mention if any.

14. Do you apply fertilizer in your farm? Yes No

15. what type of fertilizer do you apply? Farm yard manure (from animals)
Industrial

fertilizers

where do you get your fertilizer from? Through ACDEP market

16. Do you receive farm implements for ploughing from ACDEP? Yes No

17. Which type of implements do you get from ACDEP during ploughing? Hand
hoe

Ox- plough Power tiller Tractor

18. Do you receive extension services from ACDEP? Yes No

19. Which extension services do you receive from ACDEP? Mention them. Trainings

Technical advices Trainings and advices

20. Does ACDEP provide you with guarantee prices? Yes No

21. Do you receive credit from ACDEP? Yes No

22. Have you ever received any training on agriculture from ACDEP? Yes No

23. How long have you been a member of ACDEP interventions in the district?

1-2 yrs. 3-4 yrs. 5-6 yrs. 6yrs and above

28. What was the average number of bags harvested per acre last year?

Types crops	Farm size (in acres)	Number of bags before
Maize		
Soya Beans		
Sorgum		

29. Do you have the ability to pay for the following basic needs?

Type of expenses before ACDEP help	YES	NO	Type of expenses after ACDEP help	YES	NO
Medical expenses			Medical expenses		
School fees			School fees		
School uniform			School uniform		

30. What kind of assets did you own before the ACDEP intervention and how is the situation now?

Types of asset acquired before ACDEP help	Type of assets acquired after support from ACDEP
Number of meals per day	Number of meals per day
Average income per year	Average income per year
Average amount of money saves at the bank (GHC)	Average amount of money saves at the bank(GHC)
Houses	Houses
Livestock i.e. cattle, goats, sheep	Livestock (cattle,goats, sheep etc)
A house roof with iron sheets	A house roof with iron sheets
Bicycles	Bicycles
Motorbikes	Motorbikes
Vehicles	vehicle