UNIVERSITY OF CAPE COAST

PERFORMANCE OF NON-GOVERNMENTAL ORGANISATIONS IN AGRICULTURAL EXTENSION SERVICE DELIVERY IN THE UPPER WEST REGION OF GHANA

MOHAMMED NUHU ADAMS

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BY

MOHAMMED NUHU ADAMS

Thesis submitted to the Department of Agricultural Economics and Extension of the School of Agriculture, Faculty of Agriculture, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy Degree in Agricultural Extension

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DECLARATION

Candidate's Declaration

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

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

Name: Adams Mohammed Nuhu

Supervisors' Declaration

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

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

Name: Dr Festus Annor-Frempong

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

Name: Felix Kwame Forfoe

ABSTRACT

The general objective of this study was to examine the performance of NGOs in extension service delivery in the Upper West Region of Ghana. The study therefore assessed the performance of 5 NGOs in 5 districts in agricultural extension delivery in the Upper West Region of Ghana. A descriptive survey design was used to collect data from 200 farmers and 30 staff of NGOs. Descriptive statistics and t-test analysis were used to summarise and compare the perception of farmers and staff on the performance of agricultural NGOs.

The study revealed that NGOs tend to focus on young, female, and small scale farmers. Most of the staff of NGOs were males and low in academic qualification. Significantly, farmers and staff of NGOs differed in opinion on the level of NGOs effectiveness and efficiency in delivery of extension although both perceived NGOs to provide effective and moderately efficient extension service. Moreover, the study identified poor access to land, short term NGOs support, inadequate trained and qualified extension field staff and poor partnership as constraints affecting NGOs performance. The study recommends that NGOs should facilitate the acquisition of land for women and young farmers. Furthermore, regular in-service training should be provided to improve the technical knowledge and skills of staff of NGOs.

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DEDICATION

In loving memory of my late father Nuhu Adams

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LIST OF ACRONYMS

DAES:	Directorate of Agricultural Extension Services
FAO:	Food and Agriculture Organisation
MoFA:	Ministry of Food and Agriculture
NGOs:	Non-Governmental Organisations
UWADEP:	Upper West Agricultural Development Project
UWR:	Upper West Region
WRI:	World Resource Institute

CHAPTER ONE

INTRODUCTION

This chapter examines the need to assess the performance of Non-Governmental Organisations in agricultural extension service delivery in Ghana. It provides the background, the problem statement, objectives, and justification of the study. The definition of key terms, profile of study NGOs, and description of study area is also presented.

Background to the Study

Ghana faces many developmental challenges such as financing the delivery of extension, research, marketing and input supply to smallholder farmers in the agricultural sector (Galaa & Obeng, 2004). As a result of these challenges, food production and farm incomes continue to remain low despite increases in population growth. The causes of the developmental challenges, according to the Ministry of Food and Agriculture (MoFA, 2005), include (a) trade liberalisation which has lowered product prices, (b) incomplete decentralisation process of the government, and (c) a decline in quality of public extension service delivery due to dwindling resources. Ehui and Pender (2006) have suggested inappropriate government agricultural development policies and failure of public extension performance systems as a major factor challenging agricultural development. Mulhall, Warren and Garforth (1998) emphasised that the failures of past extension projects were as a result

extension focusing on resource-rich and male farmers while neglecting poor and female farmers who constitute the bulk of farming population.

The public extension system and Non-Governmental Organisations have responded to the challenges in the agricultural sector with many programmes. Non-Governmental Organisations are growing in thier numbers and scope in the agricultural sector as a result of the influx of foreign development aid into the voluntary sector (Galaa, 2005; Gary, 2007). According to the World Resource Institute (World Resource Institute, 2006) Ghana, Kenya, South Africa and Zimbabwe are accommodating larger numbers of Non-Governmental Organisations in the agricultural sectors to address the many challeges faced in the sector.

Statement of Problem

In Ghana, there has been an increase in the involvement of Non-Governmental Organisations in the funding and delivery of extension services during the last decade (MoFA, 2005). For instance, many Non-Governmental Organisations in the Upper West Region are engaged in assisting rural farming communities to improve their farm productivity and income. This increase in Non-Governmental Organisations participation in the agricultural sector is expected to impact positively in the lives of farmers in the face of dwindling resources and poor performance of the public extension service. However, limited studies have been conducted to examine the extension activities of the Non-Governmental Organisations sector (Amanor & Farrington, 1991; Bob-Millar, 2005). Moreover, the calibre of NGOs staff to effectively and efficiently perform extension activities has been questioned. The main

question which the study sought to answer was how effective and efficient have NGOs been in the delivery of extension services targeted at farmers in the Upper West Region of Ghana?

Purpose of the Study

The general objective of this study is to examine the performance of NGOs in extension service delivery in the Upper West Region of Ghana. The specific objectives are to:

1. describe background characteristics of farmers and staff of NGOs in agricultural extension delivery,
2. assess farmers' perceived effectiveness of agricultural extension service provided by NGOs,
3. assess farmers' perceived efficiency of agricultural extension service provided by NGOs,
4. compare farmers' and staff's perception of effectiveness and efficiency of extension service provided by NGOs, and
5. identify constraints affecting the performance of NGOs in agricultural extension service delivery

Research Questions

What are the characteristics of NGOs staff and target farmers?

How effective are NGOs in extension service delivery?

How efficient are NGOs in extension service delivery?

What are the major constraints affecting the performance of NGOs?

Hypothesis

Ho: There is no significant difference of opinions between staff and farmers on the level of effectiveness of NGO s in extension service delivery

Ha: There is significant difference of opinions between staff and farmers on the level of effectiveness of NGO s in extension service delivery

Ho: There is no significant difference of opinions between staff and farmers on the level of efficiency of NGO s in extension service delivery

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Justification of the Study

In Ghana, many Non-Governmental Organisations operate in the agricultural sector seeking to improve the livelihoods of rural farming communities. Limited studies have been conducted to examine the extension activities of the Non-Governmental Organisations sector (Amanor & Farrington, 1991; Bob-Millar, 2005). Moreover, the existing literature is mainly about privatisation and related issues. Therefore with the increasingly growing number of NGOs in the funding and delivery of agricultural extension service in the last decade, it has become necessary to assess stakeholders' perceptions about the performance of Non-Governmental Organisations.

In most developing countries including Ghana, Non-Governmental Organisations are widely seen by government organisations as amateurish and transient (Farrington, 1995). Governments' scepticism over the abilities of Non-Governmental Organisations and unfruitful past experiences often lead to governments overlooking NGOs as development partners. The study is important in that it has provided information on effectiveness and efficiency of

Non-Governmental Organisations in partnering with the public sector in extension delivery. This will fill in the information gap created by little relevant documentation of NGOs performance in the Upper West Region of Ghana.

It is also hoped that the results of the research will be used by Non-Governmental Organisations, public extension organisations and government of Ghana to improve the effectiveness and efficiency of agricultural in extension service delivery for greater and better impact in the Upper West Region.

Delimitations of the Study

The selection of Non-Governmental Organisations was delimited to registered NGOs since there was no reliable and available sampling frame of NGOs operating in the Upper West Region. The study also covered only primary and secondary stakeholders (farmers and NGOs staff) excluding tertiary stakeholders (donors/funders) who constitute an equally important component of the NGOs extension system. In addition, the study focused only on beneficiary farmers at the neglect of non-beneficiary farmers although the extension activities of NGOs affect both categories of farmers in the target communities. Moreover, the study was restricted to services on food crop and livestock production at the exclusion of services on agro-forestry, agro-processing and agro-credit.

The study also focused on effectiveness, operational efficiency and outcome efficiency indicators and deliberately ignored social justice and

standards of service indicators as proposed by Fish-Pool (1993) for monitoring and evaluating performance of extension service providers.

Limitations of the Study

Inadequate resources, such as time and money, constitute the major factors in limiting the scope and depth of the study. Available time and funds constrained the researcher student to study three out of the five variables of the conceptual framework adapted.

Definition of Key Terms

For the purpose of clarity the following key terms are defined in the context of this study:

Stakeholder refers to beneficiary farmers and agricultural NGOs staff.

Agricultural Non-Governmental Organisation refers to any non-state and non-profit organization which provides any kind of agricultural services such as extension, research, training, input supply etc.

Extension service refers to the provision of inputs, farmer training and transfer of information for improved agricultural production.

Perception in this study refers to personal opinions, views, thoughts, feelings and beliefs concerning the effectiveness and efficiency of extension service provided by NGOs

Extension Performance refers to effectiveness and efficiency of NGOs in extension service delivery.

Effectiveness refers to the extent to which desirable results are achieved in NGO extension intervention.

Operational efficiency refers to efficient use of resources in production activities.

Outcome efficiency refers to the extent of improvement in production outputs or outcomes.

Resources refer to materials, labour, time and money used to carry out production activities.

Brief Profile of Study NGOs

It is difficult to state the exact number of NGOs operating in the Upper West Region because available figures are inconsistent and irreconcilable. For instance, Ghana NGO Directory (GAPVOD and ISSODEC, 2005) recorded 15 NGOs in its books, whereas according to the Upper West Agricultural Development Project, there are about 21 NGOs and 52 CBOs operating in the Upper West Region (UWADEP, 2003). The NGOs covered in this study are Plan-Ghana, Action-aid, Turridep, Methodist Agricultural Programmes and Techonserve. Plan Ghana is a secular and international NGO. It is child centred in its core activities such as education, health, food security and nutrition. It provides agricultural services/support as an ancillary activity. Plan Ghana has been operating in the UWR since 2000. Action-aid is a religious and international NGO. It is engaged in humanitarian and relief services to poverty stricken communities. It provides a wide range of agricultural services/support including irrigation, food security and credit scheme to rural communities (GAPVOD/ISSODEC, 2005). Action-aid has been operating in the UWR since 1999. Turridep is a religious and local NGO. It is one of the pioneering missionary agricultural stations of the Catholic Church to be

established in Funsi and Tumu in the UWR. It has been providing literacy programme and extension services alongside its core missionary activities in the region since 1975 (GAPVOD/ISSODEC, 2005). Methodist Agricultural Programme is a religious and local NGO. It started as an agricultural vocational training centre but since 1972 it has been providing literacy programmes and extension services alongside its core missionary activities (GAPVOD/ISSODEC, 2005). Technoserve is a secular and international NGO. It is engaged in agribusiness, postharvest agro-processing, food security and credit scheme. Techno-serve has been operating in the UWR since 1991(GAPVOD/ISSODEC, 2005).

Description of the Study Area

The study was conducted in five (5) out of the nine (9) districts of Upper West Region. The study districts include Wa East, Wa West, Sisala West, Sisala East and Jirapa (See Figure 1). The Upper West Region (UWR) is situated in the northwest corner of Ghana. The Region has an estimated total population of 580 000. About 90% of the inhabitants live in rural areas. The average population density is 29.8 persons per km^2 (UWADEP, 2003).

The main economic activity of the people of the region is peasant farming. According to Ghana Statistical Services (2000), agriculture is the main occupation for males and females in all the districts of Upper West Region. The regional figures show that 77.6% of the males and 67.2% of the females are involved in agriculture. Wa district (now Wa East, Wa West, Wa Municipal) had the lowest male farmers (69.8%) while Sisala district (now Sisala East and Sisala West) had the highest (86.5%). On the other hand,

Nadowli district had the lowest 60.8% female farmer population while Sissala district had the highest of 82.0% of its farmers being female (UWADEP, 2003). The region has a sub-humid climate. Rainfall is mono-modal, with more than three-quarters of the annual rains occurring between May and September. The annual amount of rainfall is generally between 100.00 and 1 200 mm. Temperature in the region ranges from 15^{0C} at night during the harmattan season to 40^{0C} in the day during the dry season. According to the Upper West Agricultural Development Project (UWADEP, 2003), the vegetation is predominately guinea savannah. The main crops of the region are maize, guinea corn, millet, yam, rice, soya beans and cotton. Cattle, sheep and goats are the major livestock production enterprises in the region (FAO, 2002; Ghana Statistical Services, 2000; MoFA, 2001).

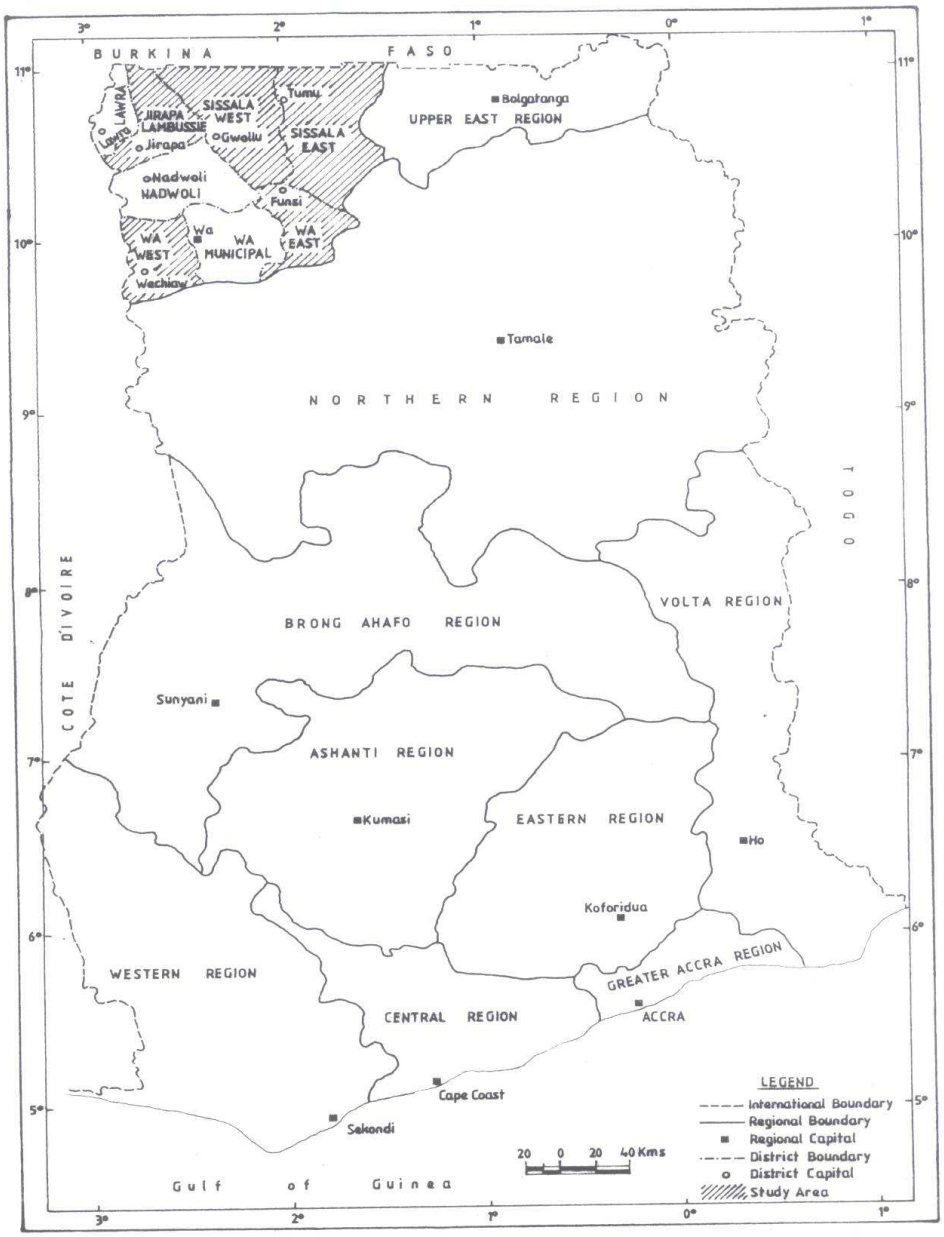

Figure 1: Map of Ghana Showing Study Districts in Hatches

CHAPTER TWO

LITERATURE REVIEW

Introduction

In this chapter, the importance, concept, goals, history and approaches of agricultural extension as well as the concept, history and role of agricultural NGOs are presented. Models for evaluating extension programme performance are reviewed and the study conceptual framework is also presented.

Importance of Agricultural Extension

Agriculture is an essential sector in any country and necessary for national food security. It is of particular importance in developing countries like Ghana where, on average, more than 60% of the population are engaged in some form of agricultural production (FAO, 1996; World Bank, 2004a). Agricultural extension provision is a valuable component in the overall development of Ghana's agriculture sector because it contributes to national wealth and food security. Effective investment in agricultural extension contributes directly to national wealth through increased agricultural production and enhanced national food security (Mulhall et al., 1998; World Bank, 2004b).

The Concept of Extension

Extension is a term which is open to a wide variety of interpretations. It is a dynamic concept in the sense that the interpretation of it is always changing. In other words, there is no single definition of extension which is universally accepted or which is applicable to all situations. Extension, therefore, is not a term which can be precisely defined, but one which describes a continual and changing process in rural areas (Oakley & Garfoth, 1983). This study adopted the definition given by FAO. According to FAO (1990) extension, on one hand, can be viewed broadly as a multi-purpose, educational and technical advisory services designed to bring about broad-based agricultural and rural development; and on the other hand, extension can be narrowly viewed as a technology transfer mechanism that is also involved in input supply, credit, and marketing services.

Goals of Agricultural Extension

Extension may be seen as a mechanism to target social goals or economic goals. Economic goals of extension focus on raising production and productivity whilst social goals may focus on improved equity in access to means of production, poverty alleviation, and food security, (Mulhall et al., 1998; World Bank, 2004b). From a social policy perspective, a failure to address the needs of the poorer segment of rural population would be seen as a serious shortcoming, while those emphasising economic goals might argue that using extension to address social goals is inefficient and that policy tools would be more appropriate (Garforth & Harford, 1995; World Bank, 2004a). Within economic goals, agricultural extension aims at ensuring the production

of adequate raw materials for domestic industries and export in order to generate jobs and foreign currency (Garforth & Harford, 1995). Within social goals, agricultural extension aims at improving the living conditions of rural people and promoting social justice (Garforth & Harford, 1995).

Historical Background of Extension

The historical roots of extension can be traced back to the Renaissance when there was a movement in England around 1850 to serve the educational needs of people at their homes (Jones & Garforth, 1996). But it was in 1967 that first practical attempt was made in what is designated as 'university extension'. Initially most of the lectures given were on literary and social topics, but in 1890s agricultural subjects were being covered by lecturers in rural areas (Jones & Garforth, 1996). The growth and success of this work in Britain influenced the initiation of out-of-college lectures in USA in 1890s (Jones & Garforth, 1996).

Agricultural extension activities in Sub-Saharan Africa (SSA) which dates back to 1920s (Antholt, 1998) focused on soil initially. The emphasis shifted in mid-1950s towards methods to increase production (Antholt, 1998). The approach in 1950s to extension was based on propaganda but in 1960s agricultural extension workers began to apply the diffusion model which ensured that Western technologies were delivered to farming communities (Antholt, 1998).

Shah (1998) noted that in Africa and Asia, many agricultural extension systems share a colonial heritage. Extension systems in countries such as Ghana, Kenya, Egypt, India, and Indonesia inherited civil service regimes that

were highly centralised and, to a large degree, detached from the rural population. Shah (1998) further asserted that these regimes were established to control and exploit rural people as they were not designed to encourage or even allow effective participation as a fundamental element of rural development.

In the last few decades, agricultural NGOs have played a growing role along side the governments in providing extension services (Garforth & Harford, 1997; Oyigu, 2004**).** According to Korblar & Tettey (2000), NGOs and international aid organisations became increasingly responsible for providing extension services to African farmers because of the transition towards liberalisation and deregulation of the sub-Saharan economies which have reduced the role of the state. Swanson and Samy (2002) also reported that the private sector firms and NGOs have become important alternatives to public extension in providing technical services, inputs, information, training, and organisational support services to farmers and rural households.

Extension Approaches

Extension approaches differ from country to country, and sometimes within countries. This section of the literature discusses the major extension approaches that have been practiced around the globe.

The general Extension Approach

The key factor of this approach is its broad agricultural and rural development goals. This is reflected in its general focus on the entire farm and home improvement. Consequently its programme embraces the general

improvement of the farm family. In countries where this approach was adopted in 1950s and 1960s, the extension programmes tend to cover improvement in the cultivation and production of agronomic and horticultural crops and farm animals. Improvement of the efficiency of the farm family is a common component as shown by the inclusion of programmes in farm management, home economics, rural youth work, and soil conservation. This approach was commonly found in the ministry of agriculture extensions of developing countries including China, Cyprus, Egypt, Turkey, Philippine and Thailand (FAO, 1990).

The Participatory Approach

The participatory approach was based on the assumption that farmers have much wisdom regarding agricultural production, but their productivity and level of living could be improved by learning more of what is known elsewhere. This approach further assumes that (a) effective extension cannot be achieved without the active participation of the farmers themselves as well as research and related services; (b) there is reinforcement effect in group learning and group action, and (c) extension efficiency can be achieved by focusing important points based on the expressed needs of farmers. The key distinguishing feature is farmers' involvement and reaching through their groups and organisations. Countries which adopted this approach include Indonesia, Rwanda, Brazil and Mali (FAO, 1990).

The Project Approach

The project approach assumes that rapid agricultural and rural development is necessary and that neither the presence nor the absence of large government bureaucracy in regular ministry of agriculture has significant impact on agricultural production and rural people within a relatively short frame. It further assumes better results can be achieved by taking a project approach within particular locations during a specified period, generally with large infusions of outside resources. Purpose of demonstrating what can be done in relatively a short period of time is the key distinguishing the project approach. The central government controls programme planning, often with considerable inputs from the international or bilateral development agency. Foreign advice is generally provided for local staff. Countries that adopted this approach include Chile, Senegal, Peru and Colombia (FAO, 1990).

The Commodity Specialised Approach

Countries like Cameroon and Pakistan adopted the specialised commodity approach in 1980s. This approach narrowly focused on promotion and production of a particular high or export agricultural commodity such as cocoa, coffee, cotton, rubber, sugar cane or tea. This approach usually employed by commodity organisations or parastatal-based extension which normally carries support functions such as research, input supply and output marketing, and conducts extension with only commodity farmers (FAO, 1990).

Training and Visit Approach

The basic assumption of Training and Visit approach (T and V) is that, under the ministry of agriculture extension, extension workers are poorly trained and lack supervision and logistic support and do visit and have contact with farmers. Further, it is assumed that subject-matter specialists are poorly trained and do not provide the link between research and training. Consequently, the key distinguishing characteristic of this approach is the 'doctrine' that extension workers must be regularly trained and must regularly visit farmers in their operational areas. Programme planning is centrally controlled and reflects interaction between research and extension. Implementation efficiency is sought through a rigid pattern of training of field staff and visits to farmers, along strict discipline of daily and fortnightly activities (FAO, 1990).

Extension Service in Ghana

Formal agricultural extension activities were initiated in Ghana in the colonial era by the early missionaries and foreign owned companies (MoFA, 2005). The missionaries established a few agricultural stations within the catchment areas of their religious activities to promote good cultural practices in food crop farms. However, the foreign companies promoted the production of export crops such as coffee, cocoa and rubber (MoFA, 2005). After independence, the export-commodity development approach was de-emphasised in favour of food crop development.

The post independent government policy of modernising peasant agriculture was implemented in the 1960s through the 'Focus and

Concentrate' project of USAID and Farmers' Cooperative Movement. In the Focus and Concentrated Project, for example, finance, inputs and technical advice were made available to a few progressive farmers to showcase improved farming practices (MoFA, 2005). These progressive farmers were expected to act as models for other farmers to emulate via the posited trickle down effect. However, in 1980s MoFA withdrew from the procurement and distribution of agricultural inputs, including credit (MoFA, 2005).

In the 1970s and 80s public extension system in Ghana was fragmented since all the departments of the Ministry of Food and Agriculture undertook separate extension services. However, in 1987 the Directorate of Agricultural Extension Services (DAES) was created to bring all extension services under one single command (MoFA, 2005). The DAES adopted a modified Training and Visit (TandV) system of extension called the Unified Extension System. This extension approach was supported with World Bank funding through the National Agricultural Extension Project (NAEP) which was implemented between 1992 and 1999.

NAEP was implemented in the Volta Region as VORADEP and Upper Region as URADEP (MoFA, 2005). The T and V System involves monthly training of Agricultural Extension Agents by Subject Matter Specialists drawn from the technical departments of MoFA and fortnightly visits of contact farmer group by AEAs. Interaction of AEAs with farmers was done by way of demonstrations and discussions.

Currently, MoFA, through many donor-assisted projects, is experimenting with various alternative extension approaches such as Participatory Technology Development Extension (PTDE), Farmer Field

School (FFS) and Integrated Pest Management (MoFA, 2005). These alternative extension methods aimed at ensuring a high level of farmer participation so that the role of AEAs has become that of facilitating learning among farmers instead transferring technology (MoFA, 2005).

In Ghana, it has been the responsibility of the central government to fund and deliver extension services. In the early 1960s, however, when the concept of the socialist oriented collective farms was in vogue, the Farmers' Cooperative Movement and the United Ghana Farmers' Cooperative Council (UGFCC) provided extension services and other inputs to farmers (MoFA, 2005).

The centralised and public extension system in Ghana has been criticised for inefficiency, ineffectiveness, lack of accountability, inequity, and unresponsiveness to location- specific needs of specific client groups (MoFA, 2005). According to the new extension policy (MoFA, 2005) in the short to medium term (2-10 years), an efficient and demand-driven extension service in a fully decentralised system would be established through partnership among the private, NGOs and government. It is envisaged that clients would participate in extension programme formulation, implementation, monitoring and evaluation to ensure that their needs are met (MoFA, 2005). The extension delivery system will shift from exclusive focus on agricultural production to a broader range of services relating to marketing, environmental conservation, poverty reduction and off-farm activities for different client groups (MoFA, 2005).

Challenges in Agricultural Extension

The mandate of extension services, whether public or private, has always been to improve standards of living of the rural population through increased food production and incomes (Fedder, Willet & Zijd, 1991; Percy, 1998; FAO, 2003). However, the impact of extension is, and has been, modest in terms of increased agricultural productivity and farm incomes in the developing world in general and SSA in particular (Anderson & Feder, 2004: Davidson, Ahmad & Ali, 2001; Elsevier, 2007). For instance, billions of people suffer from malnutrition while more than 842 million people were chronically hungry, and most of them in rural areas of poor countries, (FAO, 2004). An effective transfer of existing technologies by extension agencies to the poor rural communities could have greatly enhanced food security and reduced poverty (FAO, 2004).

In SSA, weak technical, financial, and administrative capacities of extension, research and educational institutions, and a serious lack of cooperation among these major players have inhibited progress toward food security. As a result, after more than 50 years of technical and financial assistance, the number of severely malnourished people in the region continues to grow (Babu et al, 2006).

According to Babu et al (2006) agricultural research station agricultural, educational institution and extension organisations should coordinate to develop and implement research-based policies and programs that will effectively reduce food and nutrition insecurity in rural communities. Anderson and Fedder (2004) also asserted that the crucial role of extension is to transfer information ‘from the global knowledge base and from local

research to farmers so as to help the rural poor overcome hunger and malnutrition. The importance that must be given to agriculture is stressed in literature, but still it is much in need of support and development, particularly in developing countries. For instance, in developing countries governments' expenditure on agriculture is usually much lower than on other sectors (Mulhall et al., 1998; Rivera, 1996).

New Trends in Extension

New global emphasis on rural development as an essential element of poverty reduction provides the context for many extension reforms. According to Swanson and Samy (2002) a broad array of new organisations has emerged to deliver 'extension-type' programmes to farmers and rural households. Other World Resource Institutes (Davis, Pender, Nkonya, Anandjakeseram & Ekboir, 2006; Oakley & Garforth, 1983; Birner) also reported that there is a renewed interest in agricultural advisory services after years of neglect. This section of the literature discusses a few of these new trends/reforms in extension namely: decentralisation, privatisation, cost sharing/recovery and pluralistic system of extension.

Many developing countries including Ghana inherited a highly centralised system of government from the colonial administration (DAES, 2002). This has been criticised for inefficiency and inability to respond to the problems and issues that are contextually relevant to the populace (DAES, 2002). Developing countries such as Pakistan, India, Zimbabwe, and Venezuela have therefore embarked on decentralisation process to improve public extension management and service delivery (DAES, 2002; MoFA,

2001). In Ghana the decentralisation process (de-concentration) of MoFA started in 1997 in line with the 1992 constitutional provision for the decentralisation of government machinery.

MoFA's decentralisation process sought to empower the districts to plan and implement their own agricultural extension activities and manage their resources within the framework of the national agricultural development policy (DAES, 2002). It also sought to put in place a more conducive institutional structure to enable MoFA respond more effectively to the contextual needs of farmers and the agricultural industry (DAES, 2002). At present, problems associated with the decentralisation of MoFA include the following: lack of financial decentralisation, poor relation between MoFA and Ministry of Local Government and Rural Development with regard to implementing agricultural programmes at the district levels and poor staffing at the district levels (DAES, 2002).

In developing countries including Ghana, it has been the responsibility of central governments to fund agricultural extension (DAES, 2002). Donor funding of agricultural projects is also routed through the governments. In recent times, however, the public extension services around the world are being forced to adapt to funding constraints (DAES, 2002). In response to this, developing countries such as Nicaragua, India and Estonia have initiated privatisation of extension services. Other countries such as Mozambique, Uruguay, Chile and Nicaragua have adapted contracting for extension service delivery (Chapman & Tripp, 2003).

In theory, privatisation of extension involves the provision of service or advice by private firms in exchange for a fee; the terms and conditions of

transaction are negotiated in the open market (Chapman & Tripp, 2003). According to Rivera and Alex (2004) total privatisation of extension is not feasible, even for commercial agriculture.

Cost sharing and cost recovery is another emerging trend in extension. Cost sharing involves co-funding of extension services by service providers and clients (Chapman & Tripp, 2003). On the other hand cost recovery involves profit-free payment for extension service to defray the operational cost of service providers so as to keep them revolving their funds (Rivera & Alex, 2004). Some countries like Ghana, Kenya, Ecuador and Vietnam also adopted cost-sharing and cost recovery to overcome financial constraints in agricultural extension service delivery (DAES, 2002). In Ghana, for instance, MoFA Veterinary Service Directorate applied cost recovery to services such as castration, de-worming and non-mandatory vaccination (DAES, 2002). Producer organisations, buyers, processing and export companies also recover cost through service charges deducted from payment at the time of sale (DAES, 2002). However, such extension tends to focus on high value crops like cocoa, cotton, oil palm, cashew, pineapple and vegetables.

The global perspective on extension is no longer that of a unified public extension sector service, but a multi-institutional network of knowledge and information for rural people (Rivera & Alex, 2004). There are benefits of having a range of providers to deliver extension services. Many developing countries are, therefore, encouraging pluralistic extension systems (Rivera & Alex, 2004). However, pluralistic extension strategy requires new mechanisms of financing or co-financing extension service and often entails change in roles (Rivera & Alex, 2004). From policy standpoint it implies that governments

need to act to redefine and implement a coherent extension policy to advance a pluralistic system of those who provide funds for extension and those who deliver extension service (Rivera & Alex, 2004). According to Moumouni (2006), in the context of extension decentralisation, pluralism is promoted through the creation of favourable conditions for the involvement of many other stakeholders in the delivery and funding of agricultural extension. In Ghana, for instance, the new extension policy (MoFA, 2005) provides a supportive environment to encourage the private sector and NGOs to participate fully in the financing and delivery of extension services.

Effectiveness and Efficiency of Extension

Public extension has been severely criticised for not being relevant, for insufficient impact, for not being adequately effective, for not being efficient and, sometimes, for not pursuing programmes that foster equity (Rivera, 1990; Rivera, 1996). Mulhall et al. (1998) also reported that recent reforms in the delivery and financing of extension services in developing countries have addressed issues of efficiency and effectiveness, but there is concern that these reforms (such as decentralisation in Colombia, privatisation in Mexico, strengthening of farmers' organisations in Thailand and the emergence of non-governmental organisations in Zimbabwe and Ghana) have led to little improvement in access to agricultural support services by resources poor and disadvantage households.

There is evidence to suggest that public extension will not function effectively or efficiently in situations where there are large variations in agricultural systems in a country (Al-hassan et al., 1998; Fedder, Willet &

Zijd, 1991). According to Holden, Ashley and Bazaley, (1996) although the private sector provides more efficient services in economic terms than the public extension, they may not do so in an equitable manner. Reforms of decentralisation and privatisation aim to achieve a more efficient allocation and cost effective use of resources, but this invariably may affect different categories of client's access to extension services (Beynon, 1996).

According to Ben (2003) NGOs provide efficient, innovative and cost effective approaches to difficult social, economic and agricultural problems. Ben (2003) further stated that NGOs are very effective in demonstrating that rural poverty, no matter how endemic can be tackled by involving project beneficiaries in planning, implementation and sustainability of the projects.

Assessment of Agricultural Extension

Changes in agricultural extension programmes, reduced budgets, and the demand for accountability have made evaluation an important issue in agricultural extension (Petheram, 1998). The question for all extension organisations or projects is whether they are succeeding in reaching the target groups, helping to solve problems and improve conditions and how best the extension service can be provided (Petheram, 1998). The assessment of extension performance or project results thus provides information for decision making about the continuation, modification or termination of extension programme or project (Petheram, 1998). According to Petheram (1998) evaluation, as a tool for decision making helps to select alternative strategies that conform to best extension practices to effectively achieve extension objectives.

Evaluation determines the worth or value of an on-going or completed extension intervention (Omoto, 2004). The results from evaluation can be used to reinforce positive effects or reduce negative effects. Omoto (2004) has recommended assessment of projects to assist researchers and managers to improve on institutional performance. Furthermore, Kusek and Rist (2004) asserted that extension organisations or projects need to present achievements for public scrutiny to justify use of public resources and finances.

Criteria and Indicators for Monitoring and Evaluating of Extension

Evaluative criteria are related to extension aims or project objectives from which measurable indicators are derived (Kusek & Rist, 2004). However, it is very difficult to identify appropriate criteria to assess extension performance because there are inherent extension problems that contribute to lack of evaluative criteria or agreed-on outcome measures (DOF, 1991; Kusek & Rist, 2004). First, the time between programming efforts and client/situation change can be long (DOF, 1991; Kusek & Rist, 2004). Second, extension may contribute only a portion of the totality of knowledge required for a client or situation to change since other agencies often work in some way with some of the same problems as Extension (DOF, 1991; Kusek & Rist, 2004). Third, social science methodology for demonstrating differences is not as exact as that for physical sciences (Kusek & Rist, 2004).

There are no criteria identified and agreed on by all the major stakeholders of agricultural extension (i.e. farmers, extension staff and researchers) for assessing extension performance. However, some authors proposed relevance, quality, utility/usefulness, and customer service as criteria

for evaluating agricultural extension intervention (Mueller, 1991; Smith, 1991). Other authors proposed effectiveness, operational efficiency, outcome efficiency, social justice and standards of service as criteria for assessing extension performance (Fish-Pool, 1993, Swanson, Benzt and Sofranko, 1997).

Indicators are specific, verifiable and measurable concepts derived from criteria for assessing extension programme (Appleyard, 1996; Fish-Pool, 1993). Indicators are therefore monitored over a time period to check extension project progress or to measure extension performance (Fish-Pool, 1993). The use of performance indicators differs from one author to another depending on the objectives (Fish-Pool, 1993).

According to Mueller (1991) and Smith (1991) projects inputs, outputs and social impact are the key issues in programme performance or institutional performance. Projects outputs are the direct, identifiable and measurable results expected from the provision of inputs (Mueller, 1991; Smith, 1991). The inputs are the preconditions for the achievement of project purpose. Projects inputs are the resources made available, which together with the activities, allow achievement of outputs. Inputs may be people, equipment and finance (Mueller, 1991; Smith, 1991). Social impact is long term results or effects of project on target groups (rather immediate outcomes) and this may be in terms of 'quality of life' indicators (Mueller, 1991; Smith, 1991).

The Concept of NGOs

Many and varied terms are used to describe Non-Governmental Organisations. According to Galaa (2005) these terms include: Non-Profit

Private Organisation (NPPO), Private Voluntary Organisation (PVO), Voluntary Organisation (VO), Charitable Organisation (CO), Grassroots Organisation (GO), Community Based Organisation (CBO), Civil Society Organisation (CSO), Independent Organisation (IO), and Associational Organisation (AO).

The draft document on National Consultative Group (2000) defines NGOs as civil society organisations that are formed to pursue public purposes, for which they undertake to eschew profits and be non-self-serving. This non-profit and selfless orientation of NGOs set them apart from other private sector actors such as corporate firms, which are mainly profit motivated.

Gidron, Kramer and Salmon (1992), observed that the distinctive characterization of NGOs, regardless of the variation in terms, is that they are constitutionally separate from government, are not primarily commercial or profit seeking in mission, are politically independent and provide public goods.

Overview of Types of NGOs

NGOs can be categorised into religious and secular organisations based on the inclination of their trustees.

They can also be categorised into local and international NGOs based on the number of countries in which a particular NGOs is operating (Asia Development Bank, 2005; Galaa, 2005).

According to Jabeen (2007) NGOs can be classified by their orientation and level of operation. On the basis of orientations four types of NGOs are identified namely: charitable, service, participatory and

empowering orientation. Charitable NGOs undertake relief activities; Service NGOs provide professional services such as health, education and extension; Participatory NGOs mobilise community human and material resources for self-help development projects; and Empowering NGOs undertake capacity building and group formations to fight for social, political and economic issues (Asia Development Bank, 2005).

On the basis of level of operation NGOs are categorised as: Community Based Organisation such as local youth or women groups; City Wide Organizations e.g. chambers of commerce and labour unions; National NGOs such as the Red Cross and professional organizations; and International NGOs e.g. CARE, UNDP and UNICEF (Asia Development Bank, 2005; Galaa, 2005).

History of NGOs in Ghana

In African countries very few non-missionary NGOs had noticeable presence before independence. The most prominent NGOs emanated from European settler society, missionary activity, and grassroots society organisations, whose major concerns were welfare and religious activities (Oyigu, 2004).

Historically, NGOs have their origin in the long traditional Ghanaian history of self-help under the ‘nnoboa’ system which led to formation of church NGOs by missionaries. These church-based NGOs were leaders in initiating programmes in education, agriculture and health (TechnoServe, 1995). Al-hassan et al. (1998) further noted that the early NGOs emerged from

the desire for mutual assistance but later ones have emphasised the provision of social services, basic needs and grassroots community development.

Contributing to the history of NGOs, Galaa (2005, p. 88) wrote “the churches and the missionary organisations in the 1950s championed pioneering non-governmental organisational activities in Ghana. However, organised activities of NGOs started in earnest in the latter part of 1970s and 80s. This period witnessed a shift in the orientation of NGOs from relief work to rural and community development – agriculture, health, education, water and sanitation.” Galaa (2005, p. 88) further wrote “the first voluntary effort in the agriculture sector was through the establishment of agricultural stations. The Evangelical Presbyterian Church (EP Church) launched the first station at Yendi in 1958. This was followed by the Presbyterian Church Agricultural Station in Garil in 1967.

Ayee (2002) reported that there has been a tremendous growth of the NGOs sector after independence. According to Haven (2007), although NGOs are required to obtain government registration in Ghana, generally the process is routine. Ghana NGO Directory (GAPVOD/ISSODEC, 2005) has 3000 non-governmental organisations registered in its book. There are 140 registered NGOs operating in Ghanaian agricultural sector: 39 of them are engaged in agriculture and food security programmes; 34 of them carry out agriculture and rural development projects; and the remaining 65 embark on Agro-forestry and agro-environmental interventions (GAPVOD/ISSODEC, 2005). According to Abelekya, Jesiwuni, Inusah, Sajito, Win and Adongo (2000) 48 NGOs operate in agriculture in the northern sector of Ghana alone.

Emergence of NGOs

The emergence and growth of NGOs can be explained within the theory of comparative advantage which posits that NGOs have appeared in the development scene because of their ability to respond to problems that the state has been unable to solve in a satisfactory manner (Galaa, 2005). Poole (1994) and Mohanty (2006) explained that inadequate capability and poor performance of public extension gave impetus to increased involvement of NGOs in extension services delivery and financing.

According to Swanson and Samy (2002) with the decline in government expenditures, public extension systems are not able to provide adequate educational and technical extension programmes for all groups of farmers. As a result, NGOs have emerged in many countries to concentrate on human resources development and social capital development programmes aimed at small and marginal farm households with emphasis on rural women. NGOs are complementing agricultural extension delivery by public sector extension organisations which face many problems such as inability to reach poor, socially and economically disadvantage farmers (IFAD, 1996; Mulhall et al., 1998; Mebnes, 2005).

Role of NGOs in Agricultural Sector

Non-Governmental Organisations have since the colonial period played a major role in socio-economic development in Africa, demonstrating that they are a major player in the design and implementation of projects as well as actual provision of basic public goods (Mutimba, Zinah & Naibekelao, 2004; Moroso, 2004; Oyigu, 2004). It is reported that millions of

African people, many in isolated rural communities are served by NGOs and now have access to effective social development programmes (Ayee, 2002). According to some authors (Cohen & Peterson, 1999; Garforth & Harford, 1997**;** Swanson & Samy, 2002**)** over the past two decades, NGOs have become important institutional players in rural development as public extension institutions in developing countries are under increasing pressure to deal with a range of policy issues, including accountability, relevance, responsiveness, equity and cost-effectiveness**.**

In Ghana Non-Governmental Organisations and civil society organisations provide a variety of services in the agricultural sector. According to Galaa (2005), in the northern sector of Ghana, most NGOs have concentrated on food production with emphasis on crops such as cowpea, soya bean, groundnut and maize. Some NGOs also support dry season vegetable production and agro-forestry. In the southern sector NGOs are engaged in areas such as bee-keeping, tree crop farming, woodlot farming and fish farming (Galaa, 2005). Networks of NGOs such as Association of Church Development Programmes and Ecumenical Association for Sustainable Agriculture and Rural Development are engaged in research and demonstrations, while advocacy is pursued by international NGOs such as Oxfarm Committee for Famine and Relief and Action-Aid (Galaa, 2005).

According to Mulhall et al. (1998) NGOs have a heavy involvement in extension service delivery and financing in Ghana. NGOs work in more remote and resources poor areas. Al-hassan et al. (1998) also reported that NGOs compliment the service of public extension by providing service in areas of the country where public extension service is minimal. Al-hassan et

al. (1998) further noted that where NGOs deliver extension services, resources poor farmers, as well as farmers in remote areas, are likely to have better access to extension.

Source of Funding NGOs

Generally international NGOs are well-resourced whereas their local counterparts are inadequately funded. According to Galaa (2005) international NGOs funding sources are foreign-based, and that of church-based NGOs tend to be both foreign and local, and yet secular local NGOs struggle to fund their projects.

Agricultural NGOs generally do not charge for their services (Ben, 2003; Galaa & Obeng 2004; Galaa, 2005). However some NGOs, for example, Noboa Foundation charges farmers for extension services in order to sustain the foundation since their source of funding has ceased (Al-hassan et al., 1998). Al-hassan et al. (1998) further cited that TechnoServe allows the cost of assistance and reward to be spread over a larger population. Galaa (2005) also indicated that the operations of The Church Agriculture Input Supply Project are geared towards declaring surpluses, although, such surpluses are reinvested into development ventures. Galaa (2005) further stated that some NGOs which provide inputs operate on cost-sharing strategies. Other NGOs that provide marketing component of input package (i.e. guaranteed or farm gate prices) normally charge interest during repayment for inputs after harvest (Galaa & Obeng 2004; Galaa, 2005).

Agricultural NGOs Policy on Targeting

The philosophy of NGOs in extension delivery, in Ghana, is based on their view that government agricultural strategies have benefited mainly a few groups of individuals who were already better off. It is believed that priority is given to male farmers rather female farmers. MoFA (2005) reported that women receive only 20% of public extension service delivery. Okorley and Kwarteng (2006) also reported that there is predominant practice of directing training and resources to male farmers only. As result of this gender disparity in extension service delivery, NGOs believed that agricultural growth and development will best be achieved if attention is focused on resource poor farmers (Al-hassan et al., 1998). Based on this belief, the focus of extension NGOs is on areas not reached by public extension and targeting special populations such as women, rural youth and poorest of the poor (Al-hassan et al., 1998).

Selection of Target Communities and Farmers

The criteria used by NGOs in selecting districts and communities vary. However, one criterion employed by many international NGOs is the level of deprivation or need of the project catchment area in relation to the kind of programmes they are implementing (Al-hassan et al., 1998; Endeley & Tetebo, 1997).

Gender is another criterion used by many agricultural NGOs in the selection of target farmers (Endeley & Tetebo, 1997; Galaa, 2005). NGOs in fish, snail and mushroom farming often consider the interest of farmers as basis for selection of participants; while for agribusiness and agro-processing

(considered traditionally as the preserve of women) only women are targeted (Galaa, 2005; Okorley & Kwarteng, 2006). Some international NGOs such as Action-aid, World vision and ADRA target schools, CBOs and FBOs for purposes of demonstrations and capacity building of local agencies for sustainable project delivery. Others NGOs e.g. Wa Diocesan Development Programme deals with special groups, such as people with disability (Galaa, 2005). Majority of the local NGOs operate in districts and communities for other socio-cultural reasons such as the history of their origin, kingship affiliations of founding members, etc (Galaa, 2005). According to Galaa (2005) there are many factors underlying the selection of districts and communities to serve on the part of NGOs. These factors include lack of access to agricultural extension services or inputs, membership in functional group, ability of target groups to afford services and the need to complement the efforts of others in agricultural sector or kinship affiliations (Galaa, 2005).

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Collaboration and Partnership with MoFA and other NGOs

Extension NGOs work alongside or with MoFA field staff, although they tend to focus on marginal areas or those with agricultural potential (National Consultative Group, 2000). In some cases NGOs complement the activities of MoFA by working in areas MoFA is unable to reach (Mulhall et al., 1998). According to Al-hassan et al. (1998) NGOs, especially international ones, work through partnerships and collaborative arrangements, as most of them normally do not have adequate technical personnel on ground. For instance, international NGOs such as Action-Aid, World Vision and Catholic Relief Services operate through local NGOs, CBOs and MoFA (Galaa, 2005;

Musgrove, 1996). These collaborative arrangements are aimed at ensuring synergy of programmes among NGOs. Galaa (2005) and Umali-Deininger (1997) also reported cases of collaborations between one international NGO and the other, and between local NGOs and MoFA.

NGOs Method of Service Delivery

Methods used for extension service delivery vary from NGO to another to (Galaa 2005; Galaa and Obeng, 2004). He pointed out NGOs with the right calibre of technical staff on the ground apply more participatory approach than those that use the personnel of MoFA. Al-hassan et al. (1998) reported that NGOs are keen to use group method in extension service delivery. Al-hassan et al. (1998) further observed that most NGOs use film shows, flip charts, pamphlets, demonstrations, farm visits, face to face contact, feedback, workshops, and educational campaigns to facilitate the delivery process. Other NGOs use the local durbar, magazines, exposure tours, posters, target farmer contact, diagrams and verbal communication (Al-hassan et al., 1998). Non-Governmental Organisations also take the expert-client view of extension and training, using demonstration plots to propagate fixed techniques or information (Al-hassan et al., 1998). However, some use a more participatory approach whereby communities identify and solve their own farming and ecological problems with minimal external input (Al-hassan et al., 1998).

Capacity building is key element in NGOs extension delivery (Galaa and Obeng, 2004). NGOs normally help farmers build their capacity through training to enable them derive full benefit from the services NGOs provide. According to Galaa and Obeng (2004), training is often an integral part to the

services NGOs provide, and it is provided by most NGOs. Training is either in the form of information, education and communication on new technologies and their application, or skills acquisition to enhance performance. Galaa and Obeng (2004) further reported that there are also a few NGOs that engage in training programmes geared towards social capital development among stakeholders in agriculture through group, federation and group management training. Many NGOs used the inputs package approach to extension. Input for various lines of production ranging from seed or parent stock, bullocks or donkeys and/ accessories, tree seedlings, fertilizers and spraying chemicals are provided to farmers (Galaa & Obeng, 2004). According to Galaa (2005) NGOs may provide all or some of the inputs needed for a line of production. He further observed that input packages may be in cash or in kind. Inputs such as seeds, fertilizers and chemicals are provided as credit in kind, while cash credit is provided for farm preparation in case of organisations without tractor or bullock services.

Merits of Agricultural NGOs

Galaa, (2005) observed that Non-Governmental Organisations in the agriculture sector operate small-scale and integrated projects, covering a limited number of communities and farmer groups. This ensures a low farmer-to-extension agent ratio, and increases contact between farmer and extension agent and also encourages the application of participatory extension approaches (Galaa, 2005). Galaa (2005) further asserted that NGOs projects are more effective because they size their projects to available resources (i.e. personnel and money). Moreover projects of NGOs focus on all aspects of a

line of production such as extension, training, inputs and in some cases marketing (Galaa, 2005).

According to IFAD (1996) NGOs have advantage in that they focus on farmers' needs, stimulate community-based activities, and use unconventional methods to contribute effectively to development. They have a major advantage in the more fragile and often highly heterogeneous environments where participatory approaches are particularly important. DeJong (1991) and Farrington (1997) indicated that the structure of many NGOs makes them capable of responding flexibly and rapidly to clients' needs and interests. It also allows them to deliver a range of services public extension cannot take action on, and respond quickly to emergency demands in poor and remote areas (DeJong, 1991 & Farrington, 1997). Swanson and Samy (2002) asserted that NGOs are well suited to assist the rural poor through different types of social capital and poverty alleviation programmes. Swanson and Samy (2002) indicated that NGOs staff are motivated to organise small-scale, marginal farmers and women so that they can better access technology and resources.

According to Mulhall et al. (1998), the increased activities of the NGO sector in the provision of services to rural communities is likely to enhance access to extension services. Galaa (2005) wrote that NGO involvement in development has been found to enhance the prospects for successful implementation of projects because they are in a better position to reach the poor, have better information about the poor, establish better local contacts, and they reduce leakage in the delivery of benefits that often result from corruption in government bureaucracies. Moreover, NGOs are flexible while

the public extension is rigid in its approach to development (Mugisha, Madsen, Tumusiime, and Byekwaso, 2004).

Constraints and Challenges of Agricultural NGOs

It is reported that in Africa many grassroots and domestic NGOs have low capacity, professionalism, technical know-how and professional human resources (Badu, 2002; Chandi, 2002). Swanson and Samy (2002) also reported that most NGOs lack the technical expertise to play an effective role in transfer of technology. According to Gemo and Rivera (2001) there is little or no coordination or collaboration among NGOs in African countries. Furthermore, other authors noted that in Ghana NGOs services in the agricultural sector are poorly coordinated, resulting in competition and duplication in some in cases (Galaa, 2005; Galaa & Obeng, 2004). Mulhall et al (1998) reported that, in Ghana, some NGOs duplicate the work of MoFA and other NGOs due to poor collaborations and that some NGOs use inadequately trained staff to deliver service to farmers.

Galaa (2005) reported that the multiplicity of factors used in determining sites of projects/programmes have resulted in sometimes NGOs concentrating in the same location, competing for the same farmer groups and duplication of services in some cases. Agricultural NGOs face major problems such as insufficient financial support for project, low numerical staff strength and lack of personnel on the ground for projects implementation and monitoring, low technical qualifications and poor technical competence in the field of agriculture and rural development as well as inadequate funding of local NGOs (Galaa, 2005). Moreover, majority of African NGOs face critical

financial constraints due to lack of fundraising skills and capacity gaps (Moyo & Raftopoulos, 2000; Asia Development Bank, 2005; World Resource Institute, 2006). Awudu (2006) enumerated the following constraints of local NGOs in Ghana: limited ability and capacity to raise funds, over-reliance on external donor support, and difficulties in means of communication for information sharing. According to Munene (2005) a number of NGOs misappropriated and misapplied donor funds allocated to them for agricultural projects in Kenya.

Models for Evaluating Programme Performance

Models provide the framework to conceptualise or derive indicators to measure performance of programmes. This section of the literature reviewed the conceptual frameworks such as Bennet's hierarchy model, Context Input Process and Product, Logical framework, Synder's Model and Fishspool's performance indicators for evaluating programmes. The Bennett's hierarchy model presents a framework for a goal-based approach to evaluation. It serves as a guide in planning and developing an evaluation strategy for extension programmes. Bennett's hierarchy consist of seven levels of objectives and evaluative evidence namely: inputs, activities, people involvement, reaction, KASA changes, practice change and results (Bennett, 1979).

Bennett's hierarchy is a popular method of evaluating extension programmes. Although it is a simple and easy to use tool, it becomes more difficult to evaluate at the higher levels, yet the evidence of programme impact becomes stronger at such levels. Moreover, the evaluation is strengthened by assessing the programme at several levels of the hierarchy including the

inputs. It should be acknowledged that Bennett's hierarchy model has oversimplified the reality of targets. Furthermore, this model emphasised the achievement of programme objectives rather than improvement of programme performance. Hence, the more nearly the objectives of a programme are reached, the positive the judgement of the programme regardless of occurrence of any significant side effects of the programme (Bennett, 1979).

The context, input, process and product (CIPP) is a system-based framework used in planning evaluation, rather than a method. It is based on the assumption that it is better to improve rather to prove (Petheram, 1998). The CIPP model of evaluation involves a holistic approach to assessing programme performance or impact. It generates comprehensive feedback for improving on-going projects, provides information for decision on future projects and for final judgement on completed projects (Petheram, 1998). Nonetheless, CIPP is a complex and time-consuming process of evaluation because it embraces the entire programme cycle i.e. from assessment of programme environment, system capabilities, monitoring of programme implementation to assessment of programme outcomes.

Logical framework is used for planning projects and monitoring of activities. It consists of a hierarchy of objective statements regarding the goal, purpose, outputs and inputs. The hierarchy of objectives posit that if means are provided, then the ends will be achieved. This implies that if inputs are provided for extension intervention, then the project outputs would be obtained (Cracknell, 1989). This could fulfil the purpose of project and then ultimately lead to realisation of the goal of extension (Churton, 2000). Logical framework is frequently used in social and natural resource projects (Coleman,

1987). The simplicity of the logical framework permits it to be used iteratively and dynamically. As a performance management tool, logical framework establishes clear and fair indicators against which project progress is monitored and evaluated from the onset of the project (Coleman, 1987; Cracknell, 1989). However, logical framework is not a comprehensive tool for either planning or management and does not optimise project content, nor gives guidance about technical means to achieve project aims (MacArthur, 1994). It makes no judgements about the value of what is being done, or about the relation between the benefits and costs (Coleman, 1987; Cracknell, 1989). Moreover, as a management tool, logical framework emphasises objectives. It is thus used to assess the effectiveness rather than efficiency of a programme (Coleman, 1987). Additionally, logical framework is biased towards the physical and quantitative aspects of projects and tends to conform to 'blueprint' planning (Petheram, 1998).

Snyder's model is a soft-system-based approach to programme evaluation (Cracknell, 1989). Its main feature is that outputs are divided into 3 time perspectives: (1) immediate effects of project activities (2) targets (present goals) (3) vision or ultimate goal. It is used to guide simultaneously outcome and process evaluation. It can be participatory or non-participatory (Petheram, 1998).

Impact evaluation is assessment of a programme's effectiveness in achieving its ultimate objectives or assessment of relative effectiveness of two or more programmes in meeting common ultimate objectives (Churton, 2000). Impact evaluation is generally carried out at the end of the event/programme or when the event/programme is at the settled stage (Petheram, 1998).

According to Petheram (1998), the principal foci of impact assessment are to: understand the outcomes of the programme, justify programme spending, and gain guidance about what to do next. Churton (2000) also categorised impact assessment as follows: goal-based evaluation, needs-based evaluation, comparative economic impact evaluation and impact evaluation for illumination.

Fish-Pool (1993) provides the framework for evaluating the performance of programmes based on five dimensional variables namely effectiveness, operational efficiency, outcome efficiency, social justice and standards of service. Effectiveness deals with the extent to which desirable results are achieved in NGOs extension intervention (Fish-Pool, 1993). According to Fish-Pool (1993) Operational efficiency deals with inputs and outputs relationships. Outcome efficiency deals with the relationship between outputs and outcomes (Fish-Pool, 1993). Social justice refers to equity in access to extension services and benefits of agricultural projects by all target groups (Fish-Pool, 1993). Extension service providers should address gender disparity, geographical and language barriers and other socioeconomic factors that prevent farmers from receiving extension services and benefiting from agricultural projects (Fish-Pool, 1993). Standards of service refer to client satisfaction of the quality of extension service (Fish-Pool, 1993). Service providers should demonstrate qualities such as professional attitude, technical know-how, friendly attitude, timely service and courteous manners in extension delivery (Fish-Pool, 1993).

Conceptual Framework for Evaluation of Performance of Extension Service

The study adapted the conceptual framework of Fish-Pool (1993) as shown in Figure 2. In assessing the performance of NGOs in extension delivery, the study focused on three of the Fish-Pool's five dimensional variables of performance due to limited resources. Moreover, efficiency and effectiveness have been recommended by many authors (Ben 2003; Coleman, 1987; Cracknell, 1989; Dougoh, 2007; Petheram 1998; Swanson, Benzt & Sofranko, 1997) as key indicators of extension performance. The variables adapted are effectiveness, operational efficiency and outcome efficiency. Effectiveness was operationalised to include farmers' awareness creation by NGOs, provision of production inputs by NGOs, extension delivery methods used by NGOs, participation of farmers in NGOs extension programming and training of farmers by NGOs in various production activities. The variable operational efficiency was operationalised in terms of the extent to which NGOs extension activities promoted the efficient use of farmers' resources (time, labour and materials) in various production activities. Outcome efficiency was looked at from the perspective of improvement in production outputs and outcomes as a result of NGOs extension programmes.

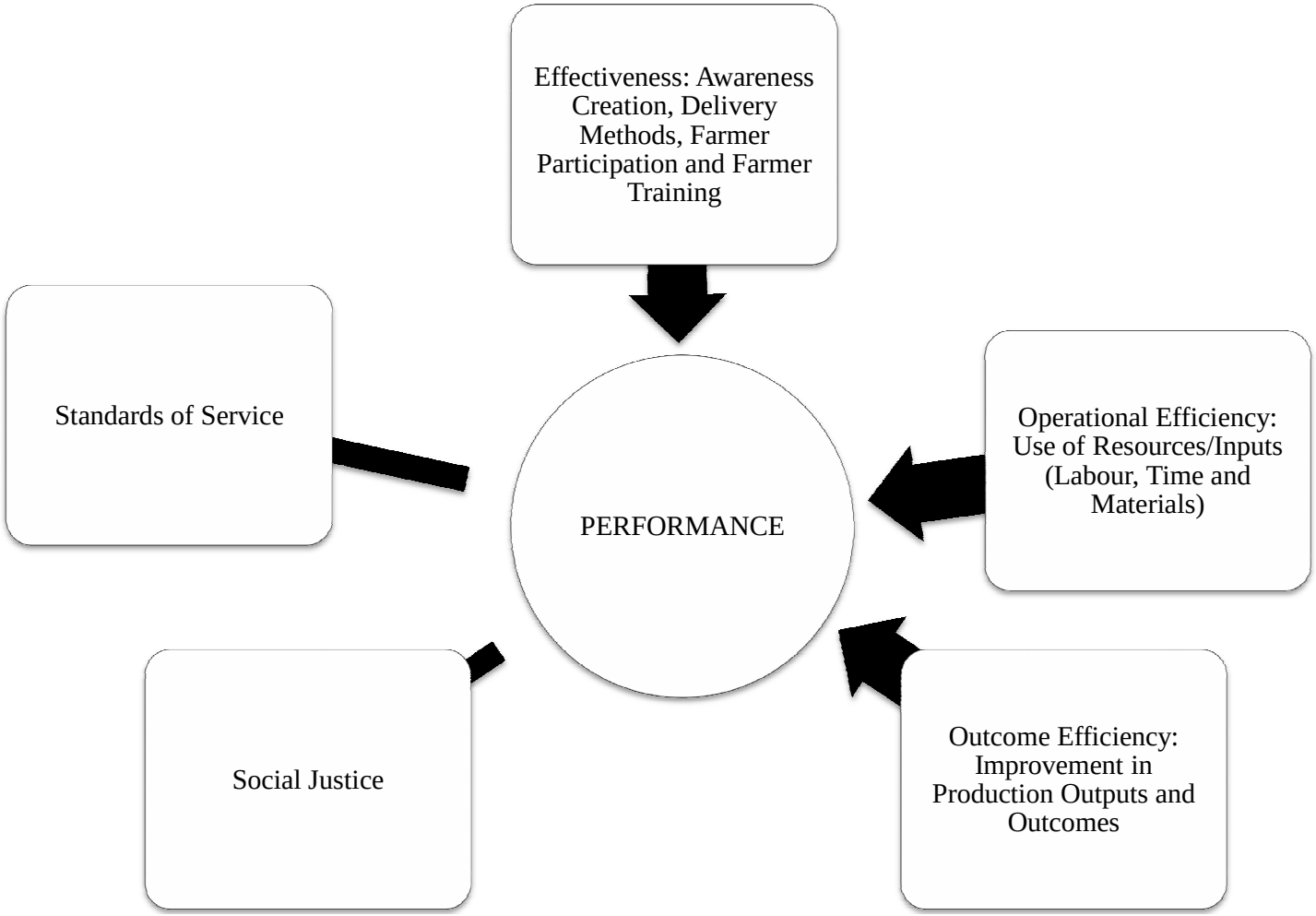

Figure 2: Conceptual Framework for Evaluation of Performance of Extension Service

Source: Adapted from Fish-Pool (1993)

CHAPTER THREE

METHODOLOGY

Introduction

This chapter presents the methods and procedures that were used for the study. Items in this chapter include the study design, target population, sampling procedure and sample size, instrumentation, pre-test, data collection and statistical tools used to analyse the data.

Study Design

A descriptive survey design was used to conduct this study. This design was chosen based upon the research objectives which sought to assess and describe the performance of agricultural NGOs in agricultural extension delivery. Descriptive survey was used for the study in that it is suitable for gathering qualitative data from a relatively large number of cases with the purpose of providing a systematic description and assessment of the perceptions of stakeholders (Field, 2000; Field, 2005; Kumar, 1999).

Population

The target population included all the 15 registered agricultural NGOs operating in the Upper West Region. The target farmer population included all the 2405 beneficiary farmers and 59 staff of the five selected NGOs.

Sampling Procedure and Sample Size

A multi-stage sampling procedure was used to select the study sample. The multi-stage sampling procedure was used because there was no available sampling frame of agricultural NGOs and their clients. Moreover, the researcher did not have financial resources and time to compile a sampling frame. Fraenkel and Wallen (2000) have recommended the use of multi-stage sampling procedure if there is no available sampling frame. Also, the multi-stage sampling procedure was used to select respondents from the target population structures which were large and dispersed across the whole region. According to David and Sutton (2004) and Lewin (2005), it is more appropriate to initially select subgroups at various levels rather than randomly select from the whole population when the population is large and widely dispersed. The multi-stage sampling enabled the researcher to establish a sample that was directly related to the research objective (Sarantokos, 1997).

At the first stage of the multi-stage sampling procedure, five (5) districts were randomly selected from the list of nine (9) in the Upper West Region. The lottery method was used in the selection of the districts.

At the second stage, five (5) NGOs were purposively selected from the five (5) districts. This was to ensure that: (i) the NGO operates in two (2) or more districts in the region, (ii) the NGO service covered or supported food production and , (iii) the NGO had provided extension service for a minimum of five years.

At the third stage 15 operational areas were randomly selected from the list of 27 operational areas provided by the sampled NGOs. The lottery method was used in the selection of the communities.

At the final stage, 215 out of 2405 beneficiary farmers were randomly chosen from the selected operational areas to constitute the desired study sample size. The lottery method was used in the selection of the farmers. The number of farmer-respondents was proportionately selected among the five NGOs. Out of the 215 respondents chosen 200 were successfully interviewed. This represented a response rate of 93%. A summary of the sampling of the farmers is provided in Table 1.

Table 1: Study Population and Sample Size of Farmers

District	No. of Beneficiary farmers	Sample size used
Wa East	415	37
Wa West	443	40
Jirapa	536	48
Sisala East	484	43
Sisala West	527	47
Total	2405	215

Source: Field Survey, 2008.

Thirty (30) staff were also randomly chosen from the total of 59 staff of the five (5) selected NGOs. The lottery method was used in the selection of the staff-respondents. The number of staff-respondents was proportionately selected among the five NGOs. A 100% response rate was achieved since all the selected staff returned their filled questionnaire. A summary of the sampling of the staff is provided in Table 2.

Table 2: Study Population and Sample Size of Staff

Name of NGO	No. of staff	Sample size used
Plan Ghana	16	8
Action-Aid	8	4
Techno-Serve	6	3
Turridep	22	11
Methodist Agric. Prog.	7	4
Total	59	30

Source: Field Survey, 2008

Instrumentation

An interview schedule (Appendix D) was used to collect data from the two hundred (200) beneficiary farmers because majority of them were illiterate. According to Lewin (2005) and Sarantakos (2005), it is more appropriate to use interview schedule for illiterate subjects since it ensures that the chosen subjects themselves provide the information in the quickest time.

A structured questionnaire (Appendix E) was used to gather data from thirty (30) NGO extension staff because they could read and write. According to Churton (2000) it is appropriate to use structured questionnaire for literate subjects since it ensures uniformity in data format for quick analysis.

The interview schedule and structured questionnaire contained similar items. The items were based on the objectives of the study. To describe the socio-demographic characteristics of selected respondents, data on sex, age, education and farm size was collected. Data was collected on awareness creation, participation in programming, methods of extension service delivery

and farmer training to examine the perceived effectiveness of NGOs in extension service delivery. The data was measured on a five-point Likert-type scale of 1 = Very ineffective, 2 = Ineffective, 3 = Moderately Effective, 4 = Effective and 5 = Very effective. Operational efficiency of NGOs in extension delivery was assessed based on data collected on farmers' resources use for carrying out various farming activities. The data was measured on a five-point Likert-type scale of 1 = Very Inefficient, 2 = Inefficient, 3 = Moderately Efficient, 4 = Efficient and 5 = Very Efficient. Data was also collected on improvement in production outputs and outcomes. The data was measured on a five-point Likert-type scale of 1 = Very Low, 2 = Low, 3 = Moderately High, 4 = High and 5 = Very High. Information on constraints affecting the performance of NGOs in agricultural extension service delivery was collected using open-ended questions. Interpretation of the various Likert-type scales is presented in Table 3.

Table 3: Interpretation of the Various Likert-type Scales

Range	Interpretation/Meaning		
	Effectiveness	Operational efficiency	Outcome efficiency
5 – 4.45	Very Effective	Very Efficient	Very High
4.44 – 3.45	Effective	Efficient	High
3.44 – 2.45	Moderately Effective	Moderately Efficient	Moderately High
2.44 – 1.45	Ineffective	Inefficient	Low
1.44 - 1	Very Ineffective	Very Inefficient	Very Low

Source: Author's Construct (2008)

Validation of Instruments

The face and content validity of the research instruments were determined by experts in the Department of Agricultural Economics and Extension of the University of Cape Coast and field staff of agricultural NGOs. These qualified experts judged the adequacy and relevance of the items as well as the appropriateness of the data on the instruments in achieving the objectives of the study.

Pre -Testing of the Instruments

David and Sutton (2004) emphasised that survey questions should be pre-tested on a test group of cases from the target population to ensure its reliability. Punch (1998) recommended a pre-test group of 30 members. With the above information, the research instrument was pretested on 30 beneficiary farmers and 5 staff from two of the non-sampled operational zones in Wa East and Sisala West districts.

The researcher personally conducted the pre-test and it provided the opportunity to discover and address difficulties faced by respondents in answering the questions on the instruments. According to Arber (1993) pre-testing of a new instrument should be undertaken by the researcher since the researcher fully understands the concepts and could pose the questions to consistently measure what is supposed to measure. Pre-testing can highlight ambiguities and other potential pitfalls in an instrument (Lewin, 2005).

Reliability Test

Fraenkel and Wallen, (2000) reported that one of the best-known ways to obtain reliability of an instrument is to use the internal consistency method. The Cronbach Alpha coefficient formula was used to determine the internal consistency of the research instruments.

The reliability coefficient was set at 0.70. Fraenkel and Wallen (2000, p.179) observed that "for social research, a useful rule of thumb is that reliability coefficient of an instrument should be at least 0.70." Pallant (2005) and Gupta (1999) also observed that a reliability coefficient of 0.70 and above of an instrument is considered as reliable.

The reliability coefficient ranged from 0.75 to 0.79 for the scale items on effectiveness, operational efficiency and outcome efficiency for farmers. The reliability coefficient ranged from 0.70 to 0.73 for the scale items on effectiveness, operational efficiency and outcome efficiency for staff. The details of the reliability test are presented in Table 4.

Table 4: Cronbach's Alpha Coefficient of Sub-scale on Effectiveness and Efficiency for Farmers and Staff

Interview schedule for farmers			Questionnaire for NGO staff	
Indicator:	No. of items:	Alpha:	No. of items:	Alpha:
Effectiveness	29	0.79	29	0.71
Operational Efficiency	13	0.75	13	0.70
Outcome Efficiency	12	0.77	12	0.73

Source: Field Survey, 2008

Data Collection

The data was collected from May to June 2008, with the help of five trained research assistants. The content of the instrument was thoroughly explained to the research assistants to ensure that each one of them had a full appreciation and understanding of the research instrument and the purpose of the study. They were taken through a guide on how to conduct the interview to ensure that proper and same procedures are followed. The research assistants selected had the following characteristics:

1. They were able to speak the local language fluently
2. They were familiar with the selected communities
3. They had good rapport with the respondents.
4. They were trained extension officers (undergraduate Diploma and Certificate)
5. They were recommended by their respective immediate supervisors to be credible and committed staff.

During the survey, the researcher randomly visited a few livestock farms and gardens of the sampled farmers to validate information and to collect additional information.

Data Analysis

The completed research instruments were scrutinised to identify and correct errors and uncompleted parts. The data on the instruments were coded using a code book to guide the transformation of the responses into numerical data for computer analysis. The coded data were entered into computer soft-ware programme called Statistical Package for Social Science Version 15 for

analysis. The coded data were cleaned by running descriptive statistics to identify discrepancies in coding.

Table 5 shows the summary of various statistical tools used in the analysis based on the objectives of the study.

Table 5: Summary of Statistical Tools for Data Analysis

Objective	Statistical tools for Analysis
Description of characteristics of farmers and NGOs staff	Cross-tabulations were ran
Description of farmers' perception of effectiveness and efficiency of extension service provided by NGOs	Frequencies, percentages, means and standard deviations were generated
Comparison of mean perception of farmers and staff of effectiveness and efficiency of extension service provided by NGOs	Independent sample t-test was run to generate means, standard deviations, mean differences, equality of variances and equality of means
Identification of constraints of NGOs based extension system	Responses were categorised and rank-ordered for description

Cross-tabulations were ran to summarise and describe characteristics of farmers and NGOs staff such as sex, age, education, experience, farm and garden size using frequencies and percentages. Frequencies, means and standard deviations were generated to describe farmers' perceived effectiveness and efficiency of NGOs in delivery of agricultural extension service. Responses on constraints affecting the performance of agricultural

NGOs in extension service delivery were categorised and rank-ordered. The t-test was used to compare the mean perception of farmers and staff about the effectiveness and efficiency of extension service provided by NGOs. An alpha ≤ 0.05 was set as *a priori* to examine any statistical significance between two variables. Trochim (2000) recommended an alpha of 0.05 for social research.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The results are presented and discussed in this chapter based on the objectives of the study. Items discussed include background of farmers and NGOs staff, farmers' and NGOs staff's perceived effectiveness and efficiency of extension service provided by NGOs and constraints affecting the performance of agricultural NGOs.

Personal and Socio-Economic Characteristics of Respondents

Sex and Age of Farmers

Table 6 presents the age and sex distribution of farmers. Out of the 200 farmer-respondents, majority (146) were females while more than a quarter (54) was males. Similarly, out of the 200 farmer-respondents, more than half (62.5%) were in the youthful age group of between 16 and 35 years while 37.5% were in the adult age group of 36 to 55 years (Mean = 28.5 and SD =1.12). This implies that agricultural NGOs tend to focus on young and female farmers and it is an appropriate target policy in that the youth and women are the most vulnerable to poverty and unemployment. Hence, this could help curb the problem of rural-urban migration by the young females for casual work as porters and maid-servants. The study findings are consistent with findings of earlier studies (Al- Hassan, Canacoo & Strofenyoh, 1998;

Munson, 1998; MoFA, 1999; World United, 2006) that concluded that NGOs normally target the youth and women.

Table 6: Sex and Age Distribution of Farmers

Age (Years)	Male		Female		Total	
	Freq.	%	Freq.	%	Cum.Freq.	Cum.%
16 – 25	20	37.1	44	30.1	64	32.0
26 – 35	14	25.9	47	32.2	61	62.5
36 – 45	10	18.5	33	22.6	43	84.0
46 – 55	10	18.5	22	15.1	32	100.0
Total	54	100.0	164	100.0	200	

Mean = 28.5. SD = 1.12.

Source: Field Survey, 2008.

Education and Sex of Farmers

The results in Table 7 indicate that, out of the 146 female farmer-respondents, majority (72.6%) of them were illiterates. The results also show that more than half (70.4%) of the males were illiterates. Cumulatively, majority (72%) of the 200 sampled farmer-respondents have had no formal education. Only 28% of them were literates. This implies that there is high level of illiteracy among farmers irrespective of their sex group and this could affect adoption of innovations that required basic skills in calculations and reading of user instruction of agricultural inputs such as fertilizers, pesticides and weighing as well records keeping. The findings support the report of FAO (2004) that majority of farmers in developing countries were illiterates.

Table 7: Level of Education and Sex of Farmers

Level of Education	Male		Female		Total	
	Freq	%	Freq	%	Cum. Freq.	Cum.%
No formal education	38	70.4	106	72.6	144	72.0
Formal education	16	29.6	40	27.4	56	100.0
Total	54	100	146	100.0	200	

Source: Field Survey, 2008.

Farmer's Years of Working Relationship with Agricultural NGOs

The farmer- respondents have worked with agricultural NGOs between 3 to 6 years (Table 8). In cumulative terms, more than half of the farmer-respondents (60.5%) have received extension services from NGOs for 3 to 4 years. Close to 40% (39.5%) have worked with agricultural NGOs for 5 to 6 years. This shows that agricultural NGOs have supported the target farmers on short term basis.

Table 8: Farmer's Years of Working Relationship with Agricultural NGOs

Years of Working Relationship	Freq.	%	Cum. %
3	71	35.5	35.5
4	50	25.0	60.5
5	43	21.5	82.0
6	36	18.0	100.0
Total	200	100.0	

Source: Field Survey, 2008.

This confirms MoFA (2005) assertion that the extension services of NGOs are usually temporary and sporadic in target communities. This has implications on sustainability of projects initiated by NGOs in the agricultural sector since long term projects often ensure sustainability of projects.

Farm Size

The farm size of most (69.5%) of the farmer-respondents have was not more than 1 acre (Table 9). However, 25.3% of them possessed farm size

Table 9: Farm Size of Respondents

Farm Size in Acreage	Freq.	%	Cum. %
¼	23	11.5	11.5
½	36	18.0	29.5
1	81	40.5	69.5
2	21	10.5	80.0
3	16	8.0	88.0
4	16	8.0	96.0
5	7	3.5	100.0
Total	200	100.0	

Mean = 3.2. SD= 1.5.

Source: Field Survey, 2008.

between 2 to 4 acres of farmland. Only a few (5.2%) had farm size of 5 acres. The farm size of respondents indicates that respondents are small-scale farmers. This could affect adoption of certain technologies that are appropriate

for large scale production, for example, the use tractor for land preparation. This confirms earlier reports by Al- Hassan, Canacoo and Strofenyoh (1998) and Endeley and Tetebo (1997) that NGOs target small-scale farmers in their extension service delivery. It is an appropriate policy to target small-scale farmers because they are low-resourced farmers and are often marginalised by public extension service providers. Hence extension NGOs are helping to fill this gap in public extension delivery.

Sex and Academic Qualification of Staff

Most (83.4%) of the NGO staff are either certificate or diploma holders (Table 10). Only few (16.6%) had BSc or MSc degrees. There were more male staff with BSc and MSc degrees (4) as compared to female staff (1). The results also show that, out of the 14 Certificate holders, 8 were males while 6 were females. The results further indicate that, out of the 11 Diploma holders, 8 were males while 3 were females. Moreover, for every 3 male BSc degree holders there is 1 female BSc degree holder. It is worthy to note that the only MSc degree holder is a male staff. Staff of NGOs generally have low academic qualifications. However, more male staff had higher academic qualification as compared to their female counterparts.

It is also interesting to note that for every female staff there were 2 male staff. This implies that there was a gender disparity between male and female staff with regard to academic qualification. There is also gender disparity between males and females with regard to staffing in agricultural NGOs. These findings are consistent with the report by other authors (Galaa, 2005; Zinnah, Steel, Kwarteng & Carson, 1996) that majority of extension

staff in Africa had qualifications below first degree. Galaa (2005) and Truitt (1998) also reported low number of female extension staff in NGOs. The comparatively lower numerical strength of female staff could affect the effective delivery of extension service to women who constitute the majority of target farmers, particularly, in the study region where certain cultural and religious barriers limit male extension and female farmer direct interactions.

Table 10: Academic Qualification and Sex of NGOs Staff

Academic Qualifi.	Male		Female		Total	
	Freq	%	Freq	%	Cum.Freq.	Cum.%
Gen Cert. in Agric.	6	50.0	8	44.4	14	46.7
Diploma	3	25.0	8	44.4	11	83.4
BSc	3	25.0	1	5.6	4	96.7
MSc	-	-	1	5.6	1	100.0
Total	12	100.0	18	100.0	30	

Source: Field Survey, 2008.

Position and Sex of Staff

Position and sex of staff are reported in Table 11. The results indicate that there equal representation of 11 males and 11 females in the low rank of field staff. The results also show that, out of the 4 supervisors, 3 were males while 1 was female. Moreover, all the 3 project officers were males. There were more male staff (66.7%) as compared to their female counterparts (33.3%). This could be attributed to the relatively low academic qualifications of the female NGO staff. These findings support that of Galaa (2005) who

reported that agricultural NGOs had very few female staff and that they were in lower positions such as technical and production officers' grade.

Table 11: Position and Sex of NGO Staff

Position	Female		Male		Total	
	Freq	%	Freq	%	Cum. Freq.	Cum.%
Field Staff	11	91.7	11	61.1	22	73.3
Supervisor	1	8.3	4	22.2	5	16.7
Project Officer	-	-	3	16.7	3	100.0
Total	12	100.0	18	100.0	30	

Source: Field Survey, 2008.

Age and Working Experience of Staff

Table 12 presents the age and work experience of NGOs staff. The mean age of staff is 31 years while the standard deviation is 1.8. The results indicate that 83.3% of the staff who have working experience less than 5 years were in the age group of 20 - 30 years. On the other hand, more than half (66.6%) of the staff who have working experience of 5 years or more were between 31 and 50 years of age. This shows a direct relationship between age and work experience. The younger the staff, the less experience they have working with NGOs.

Table 12: Age and Years of Working Experience of Staff

Age	Years of experience					Total
	Below 5 years		5 years and above			
	Freq.	%	Freq.	%	Cum. Freq.	Cum.%
20- 25	9	50.0	2	16.7	11	36.7
26 – 30	6	33.3	2	16.7	8	63.4
31 – 35	1	5.6	3	25.0	4	76.7
36 – 40	2	11.1	4	33.3	6	96.7
41 – 50	-	-	1	8.3	1	100
Total	18	100.0	12	100.0	30	

Mean = 31. SD= 1.8.

Source: Field Survey, 2008.

Staff's Years of Experience and Position

Majority (53.3%) of the field staff had less than 5 years of working experience as extension workers of agricultural NGOs (Table 13). However, 3 out of the 5

Table 13: Staff's Years of Experience and Position

Position	Years of Experience				Total	
	Below 5 years		5 years and above			
	Freq	%	Freq	%	Cum. Freq.	Cum.%
Field staff	16	88.9	6	50.0	22	73.3
Supervisor	2	11.1	3	25.0	5	90.0
Project officer	-	-	3	25.0	3	100.0
Total	18	100.0	12	100.0	30	

Source: Field Survey, 2008.

supervisors had worked more than 5 years as extension staff. All the 3 project officers had more than 5 years working experience as extension staff of NGOs. This finding indicates that the more experienced staff were highly ranked while the less experienced ones were on lowly ranked. This suggests that NGOs reward experience with promotion and it is expected to ensure effective and efficient performance.

Academic Qualification and Position of Staff

Table 14 presents academic qualification and position of NGOs staff. The field staff of NGOs were mainly Certificate (36.7%) and Diploma (46.7%) holders. The project officers were Bachelor (2) and Master (1) degree

Table 14: Academic Qualification and Position of NGOs Staff

Acad.Quali.	Position							Total
	Field staff		Supervisor		Proj. officer			
	Freq	%	Freq	%	Freq	%	Cum.Freq	Cum.%
G.C.A.	11	50.0	-	-	-	-	11	36.7
Diploma	11	50.0	3	60.0	-	-	14	46.7
BSc	-	-	2	40.0	2	66.7	4	13.3
MSc	-	-	-	-	1	33.3	1	3.3
Total	22	100.0	5	100.0	3	100.0	30	100.0

Source: Field Survey, 2008.

holders. This shows a direct relationship between academic qualification and position. The higher one's academic qualification, the higher one's position is in NGOs.

Farmers' Perceptions on Effectiveness of NGOs in Creating Awareness

Farmers' Perceptions on Effectiveness of NGOs in Creating Awareness

about NGOs Existence

Most (71%) of the farmer-respondents indicated that NGOs were very effective in creating farmers' awareness of their existence in their operational areas (Table 15). This is followed by 14% indicating that NGOs were moderately effective in making farmers aware of their existence in their operational areas. However, 12% of the respondents indicated that NGOs were ineffective in making farmers aware of their existence in their operational areas and it could be due to the fact that such farmers expected a door to door awareness creation about NGOs. Farmers' general perception is that NGOs were very effective in creating awareness of their existence in their operational areas. This finding supports that of Mulhall et al. (1998), who reported that NGOs often have organisational capacity and skills to undertake awareness creation and sensitisation programmes.

Table 15: Farmers' Perceived NGOs Effectiveness in Creating Awareness About NGOs Existence in Operational Areas

Farmers' Awareness About NGOs Existence	Frequency	%
Ineffective	6	3
Moderately effective	28	14
Effective	24	12
Very effective	142	71
Total	200	100

Source: Field Survey, 2008.

Farmers' Perceptions on Effectiveness of NGOs in Creating Awareness about the Types of Agricultural Services NGOs Provide

The results presented in Table 16 shows that more than half (61%) of the farmer-respondents indicated that NGOs were effective in making farmers aware of the types of agricultural services they provide in their operational areas. On the other hand, 12.5% of the farmer-respondents indicated that

Table 16: Farmers' Perceived NGOs Effectiveness in Creating Awareness of Types of Agricultural Services NGOs provide

Farmers' Awareness of Types of Agricultural Services	Freq.	%
Very Ineffective	4	2.0
Ineffective	25	12.5
Moderately effective	25	12.5
Effective	122	61.0
Very effective	24	12.0
Total	200	100.0

Source: Field Survey, 2008.

NGOs were ineffective in creating farmers' awareness about the types of agricultural services they provide and this could be attributed to the fact some NGOs varied the type of services they provided depending on the prioritised needs of different communities and different target groups. It is farmers' general perception that NGOs were effective in making them aware of the types of agricultural services they provide in their operational areas.

Farmers' Perceptions on Effectiveness of NGOs in Creating Awareness about Location of the NGOs Offices

Farmers' general perception was that NGOs were ineffective in creating awareness of the location of their offices in their operational areas (Figure 3). Specifically, the results show that majority (65%) of the

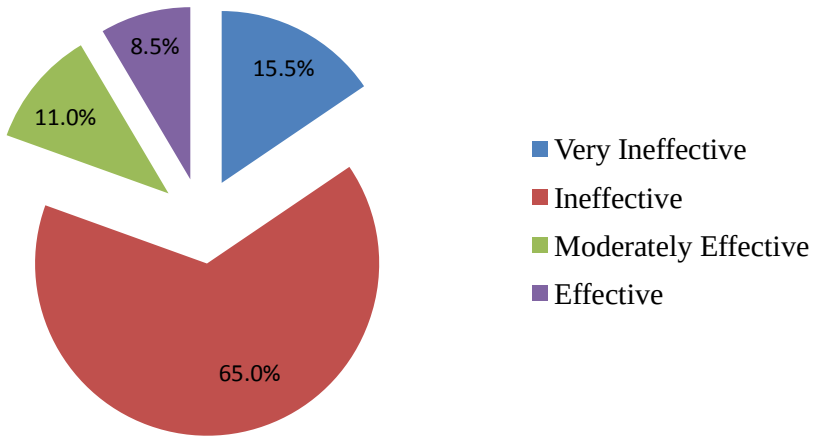

Figure 3: Farmers' Perceived NGOs Effectiveness in Creating Awareness of the Location of Their Offices (n = 200)

Source: Field Survey, 2008.

respondents perceived that NGOs were ineffective in creating farmers' awareness of the location of their offices in their operational areas. This is followed by 15.5% indicating that NGOs were very ineffective in creating farmers' awareness about the location of their offices. On the other hand, 8.5% of the respondents perceived that NGOs were effective in making farmers aware of the location of their offices. The failure of NGOs to create effective awareness of the location of their offices in their operational areas is due to the

fact that 4 out of the 5 NGOs interviewed had their offices located in the regional capital. Since most of the target farmers were in remote rural communities, this makes office visits by target farmers very difficult for they neither had the time nor the money to make such visits even when is necessary.

Farmers' Perceptions on Effectiveness of NGOs in Creating Awareness about NGOs Field Staff

As shown by the results in Table 17, more than half (52.5%) of the farmer-respondents indicated that NGOs were effective in making farmers aware about NGOs field staff in their operational areas. The results also indicate that 46% of the respondents perceived that NGOs were very effective

Table 17: Farmers' Perceived NGOs Effectiveness in Creating Awareness of the Presence of Their Field Staff in Operational Areas

Farmers' Awareness about NGOs Field Staff	Freq.	%
Moderately effective	3	1.5
Effective	105	52.5
Very effective	92	46.0
Total	200	100.0

Source: Field Survey, 2008.

in creating farmers' awareness of their field staff in their operational areas. The remaining 1.5% of the respondents indicated that NGOs were moderately effective in making farmers aware of their field staff in their operational areas.

In general, farmers believed that NGOs were effective in creating farmers' awareness about their field staff in their operational areas. The high awareness of farmers about the presence of NGOs field staff in their communities is expected to promote effective interpersonal interaction between farmers and their extension agents.

Farmers' Perceptions on NGOs Effectiveness in Delivery of Inputs

Farmers' Perceptions on NGOs Effectiveness in Delivery of Inputs for Crop Production

Majority (64%) of the respondents perceived that there was effective provision of inputs for crop production (Figure 4). However, 6.7% and 9.3% of the respondents perceived that inputs provision for crop production was very ineffective or ineffective. In general, farmers perceived that agricultural NGOs are an effective source of input supply for crop production and confirms Galaa (2005) findings that agricultural NGOs were effective in the

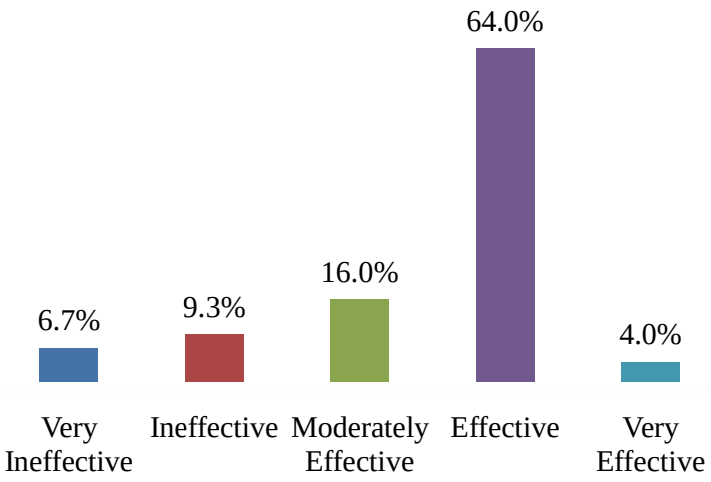

Figure 4: Farmers' Perceived NGOs Effectiveness in Delivery of Crop Production Inputs (n = 200)

Source: Field Survey, 2008.

delivery of input package for various production lines.

Farmers' Perceptions on NGOs Effectiveness in Delivery of Inputs for Dry Season Gardening

The results in Table (18) show that three quarter (75%) of the farmer-respondents indicated that NGOs were effective or very effective in the provision of inputs for dry season gardening. This is not surprising because the provision of dams, fencing materials, water hose and watering cans and garden tools to target farmers have effectively enhanced dry season gardening in beneficiary communities.

Table 18: Farmers' Perceived NGOs Effectiveness in Delivery of Inputs for Dry Season Gardening

Delivery of Inputs for Dry Season Gardening	Freq.	%
Moderately Effective	5	25
Effective	11	55
Very Effective	4	20
Total	*20	100

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on NGOs Effectiveness in Delivery of Inputs

Farmers' Perceptions on NGOs Effectiveness in Delivery of Inputs for Livestock Production

The general perception of farmers is that NGOs were effective in the provision of inputs for livestock production (Figure 5). Most (65.5%) of the

respondents indicated that the delivery of inputs for livestock production was effective (Figure 5). However, 23.6% of the respondents indicated that input delivery for livestock production was ineffective or very ineffective. This could be attributed to the fact that consumable veterinary products such as antibiotics, antihelminthics, acaricides and vaccines were not provided on regular basis.

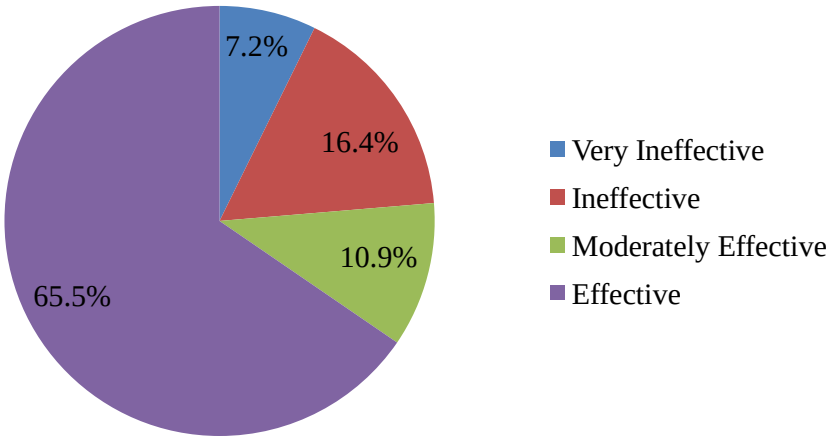

Figure 5: Farmers' Perceived NGOs Effectiveness in Delivery of Livestock Production Inputs (n = 200)

Source: Field Survey, 2008.

Farmers' Perceptions on NGOs Effectiveness in Delivery of Inputs for Animal Traction

Generally, farmers perceived that NGOs were effective in inputs provision for animal traction. The results presented in Figure 6 indicate that 3 out of every 5 farmer- respondents (60%) perceived that there was effective provision of inputs for animal traction. However, 26% of the respondents perceived that input delivery for animal traction was ineffective and this is

resulted from some NGOs failure to provide the full set of implements. For instance, some NGOs requested the farmer group to provide the draught animal while NGOs offered them animal plough and cart. Other NGOs provided the draught animal and the cart but without a plough.

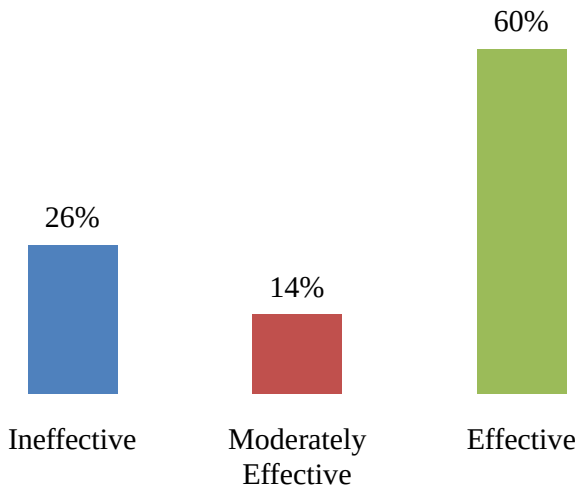

Figure 6: Farmers' Perceived NGOs Effectiveness in Delivery of Animal Traction Inputs (n = 200)

Source: Field Survey, 2008.

Farmer's Perceptions on Effectiveness of Farmers' Participation in Programme Development

Farmer's Perceptions on Effectiveness of Farmers' Participation in Problem Identification

Majority (50.5%) of the farmer-respondents thought that farmers' involvement in problem identification was effective (Table 19). However, 8% of them viewed farmers' involvement in problem identification to be ineffective. This implies that there was effective involvement of farmers in their needs and problem identification in NGOs-based extension system. This

finding is line with the assertion of Antholt and Zijp (1995) that there was active farmer participation in needs assessment in NGOs extension programme development.

Table 19: Farmers' Perceived Effectiveness of Involvement in Needs/Problems Identification

Involvement in Needs/Problems Identification	Freq.	%
Ineffective	16	8.0
Moderately effective	34	17.0
Effective	101	50.5
Very effective	49	24.5
Total	200	100.0

Source: Field Survey, 2008.

Farmer's Perceptions on Effectiveness of Farmers' Participation in Identification of Solutions

The results in Table 20 show that 3 out of every 5 of the respondents (60%) thought that farmers' involvement in solution identification was moderately effective. On the other hand, 1 out of every 10 of them (10%) indicated that farmers' involvement in solution identification was ineffective. In general, farmers' involvement in solutions identification was moderately effective in the NGOs-based extension system. This finding confirms the report of Antholt and Zijp (1995) that agricultural NGOs normally engaged farmers in finding solutions to their problems.

Table 20: Farmers' Perceived Effectiveness of Farmers' Involvement in Identification of Solutions

Involvement in Identification of Solutions	Frequency	%
Ineffective	20	10.0
Moderately effective	120	60.0
Effective	17	8.5
Very effective	43	21.5
Total	200	100.0

Source: Field Survey, 2008.

Farmer's Perceptions on Effectiveness of Farmers' Participation in Programme Implementation

Half (50%) of the farmer-respondents thought that farmers' involvement in programme implementation was very effective (Table 21). This is followed by 24.5% indicating that farmer involvement in programme

Table 21: Farmers' Perceived Involvement of Farmers in Programme Implementation

Programme Implementation	Freq.	%
Ineffective	17	8.5
Moderately effective	34	17.0
Effective	49	24.5
Very effective	100	50.0
Total	200	100.0

Source: Field Survey, 2008.

implementation was effective. However, 8.5% of the respondents thought that farmers' involvement in programme implementation was not effective. This implies that there was effective involvement of farmers in programme implementation. The above finding on farmers' participation in extension programming confirms the report of Galaa (2005) that most agricultural NGOs adopt participatory approach in extension delivery.

Farmer's perceptions on effectiveness of farmers' participation in programme evaluation

The results in Figure 7 show that most (69%) of the respondents indicated that there was moderately effective involvement of farmers in

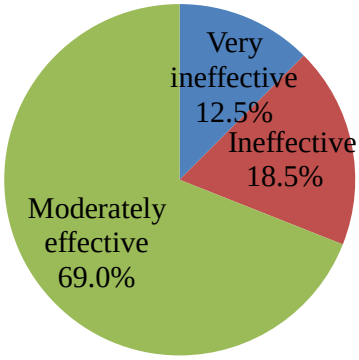

Figure 7: Perceived effectiveness of Farmers' Involvement in Programme Evaluation (n = 200)

Source: Field Survey, 2008.

programme evaluation. The finding confirms the assertion of Galaa (2005) that most agricultural NGOs involved beneficiary farmers in project evaluation. However, 31% of the farmer-respondents thought that farmers' involvement in programme evaluation was ineffective or very ineffective. This

could be attributed to the fact that some NGOs failed to undertake summative programme evaluation in some cases while other NGOs involved only executive members of the beneficiary farmer group who sometimes failed to report to their members.

Farmer's Perceptions on Effectiveness of Extension Delivery Method

Farmer's Perceptions on Effectiveness of Farmer Group Meetings

The results in Table 22 show that NGOs extension farmer group meetings were perceived to be effective. Majority (61.5%) of the respondents thought that farmer group meetings with NGOs staff were very effective while 35.5% viewed group meetings with NGOs staff to be effective. The remaining 3% perceived group meetings with NGOs staff to be moderately effective. This is expected as the NGOs interviewed were all pro-active in organising regular and frequent meetings for group discussion and dissemination of extension messages.

Table 22: Farmers' Perceived Effectiveness of Group Meetings

Farmer Group Meetings	Freq.	%
Moderately effective	6	3.0
Effective	71	35.5
Very effective	123	61.5
Total	200	100.0

Source: Field Survey, 2008.

Farmer's Perceptions on Effectiveness of Field Visits

Table 23 presents the farm visits by NGOs. With the exception of 5% of the farmer-respondents who perceived farm visits by NGOs to be ineffective, majority (95%) of farmers perceived farm visits to be moderately effective (20%), effective (62.5%) or very effective (12.5%). This is not surprising as NGOs field staff are provided with means of transport and regular fuel allowance to visit farmers in the field.

Table 23: Farmers' Perceived Effectiveness of Farm Visits

Farm Visit by Field Staff	Freq.	%	Cum.%
Ineffective	10	5.0	5.0
Moderately effective	40	20.0	25.0
Effective	125	62.5	87.5
Very effective	25	12.5	100.0
Total	200	100.0	

Source: Field Survey, 2008.

Farmer's Perceptions on Effectiveness of Field Demonstrations

Farmers' generally believed that NGOs extension delivery by means of field demonstrations was moderately effective (Figure 8). More than half (57.5%) of the farmer-respondents viewed NGOs field demonstrations to be moderately effective. This was followed by 36% indicating that NGOs field demonstrations were effective. However, 6.5% of the respondents thought that NGOs field demonstrations were not effective and this is due to the fact that some of the NGOs had to rely on MoFA staff to conduct such demonstrations

who in some cases delayed or failed to do so.

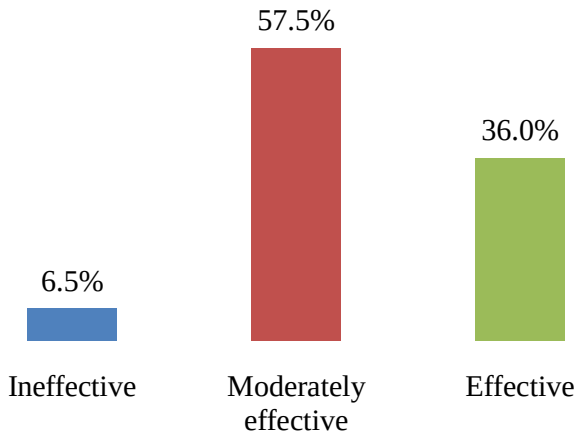

Figure 8: Farmers' Perceived Effectiveness of Field Demonstrations (n = 200)

Source: Field Survey, 2008.

Farmer's Perceptions on Effectiveness of Field Days

The results in Table 24 generally indicate that farmers felt that field days of NGOs were not effective in delivery of extension service to them.

Table 24: Farmers' Perceived Effectiveness of Field Day

Field Days	Freq.	%
Ineffective	126	63
moderately effective	70	35
Effective	4	2
Total	200	100

Source: Field Survey, 2008.

More than 3 of out of every 5 respondents (63%) thought that NGOs field days

were not effective while less than 2 out of every 5 of the respondents (35%) indicated that NGOs field days were moderately effective. The ineffectiveness of field days of NGOs in delivery of extension service could be attributed to the infrequent and irregular manner they were conducted by of the studied NGOs.

Farmers' Perceptions on Effectiveness of Training in Crop Production

Farmers' Perceptions on Effectiveness of Training in Land Preparation

Majority (57.9%) of the farmer-respondents perceived that training in land preparation very was effective (Table 25). However, 9.5% of the respondents indicated that training in land preparation was not effective. This implies that farmers' general perception is that NGOs provided effective training for farmers in land preparation. This is because many target farmers were given practical training on how to use bullocks and donkeys in land tillage.

Table 25: Farmers' Perceived Effectiveness of Training in Land Preparation

Training in Land Preparation	Freq.	%
Ineffective	9	9.5
Moderately effective	10	10.5
Effective	21	22.1
Very effective	55	57.9
Total	*95	100.0

* Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Effectiveness of Training in Nursing of Seeds

The results in Figure 9 show that training of farmers by agricultural NGOs in improved seed nursing methods was moderately effective. More than half (55%) of the respondents perceived that training in nursing of seeds as moderately effective. However, 20% of the respondents thought training in nursing of seeds was not effective.

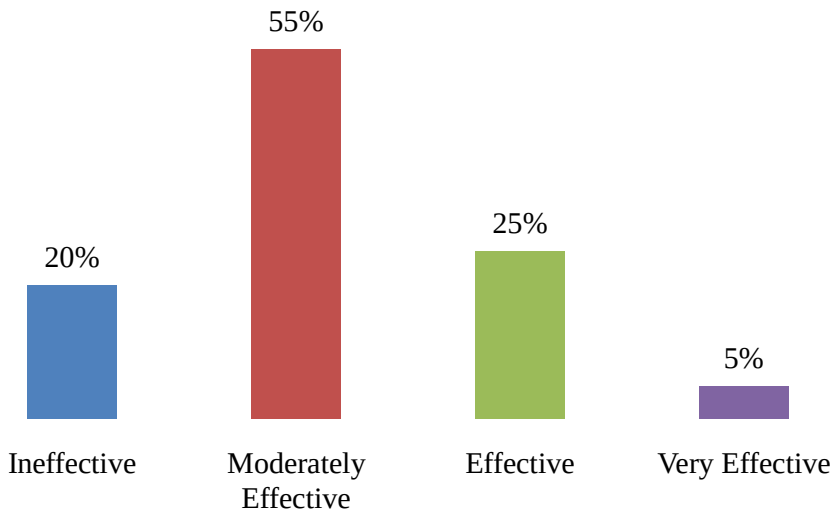

Figure 9: Farmers' Perceived Effectiveness of Training in Seed Nursing

n = 20(applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Effectiveness of Training in Planting

Majority (52.6%) of the farmer respondents indicated training in planting was effective (Table 26). Meanwhile, 4.2% of the respondents felt that training in planting was not effective. This implies that there is general perception of farmers that agricultural NGOs provided effective training in planting. This could be attributed to the practical field demonstrations on planting according to recommended spacing, depth and row of various cereals

and legumes as well vegetables.

Table 26: Farmers' Perceived Effectiveness of Training in Planting

Training in Planting	Freq.	%
Ineffective	4	4.2
Moderately effective	16	16.8
Effective	50	52.6
Very effective	25	26.3
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Effectiveness of Training in Weed Control

More than half (54.7%) of the farmer respondents perceived that training in weed control was effective (Table 27). However, 2.1% perceived

Table 27: Farmers' Perceived Effectiveness of Training in Weed Control

Training in Weed Control	Freq.	%
Ineffective	2	2.1
Moderately effective	11	11.6
Effective	52	54.7
Very effective	30	31.5
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

that training in weed control was not effective. This shows that farmers' perception of training by agricultural NGOs in weed control methods was effective. This is as a result of the practical exposure of many target farmers to integrated weed control measures involving weedicides, mulching, crop rotation and physical removal of weeds.

Farmers' Perceptions on Effectiveness of Training in Soil Fertility Improvement

The results in Table 28 show that NGOs' training of farmers in soil fertility improvement was moderately effective. Most (58.9%) of the respondents were of the view that training in soil fertility improvement was moderately effective (Table 28). On the other hand, few (10.5%) of the respondents were of the view that training in soil fertility improvement was effective. This is due to the fact some of the NGOs promoted the use of organic fertilizers whereas expectation was on training on chemical fertilizers.

Table 28: Farmers' Perceived Effectiveness of Training in Soil Fertility Improvement

Training in Soil Fertility Improvement	Freq.	%
Ineffective	10	10.5
Moderately effective	56	58.9
Effective	29	30.5
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Effectiveness of Training in Pest Control

The results presented in Table 29 7.4% of the respondents perceived that that training in plant pest control was not effective while majority (92.6%) of the farmer respondents perceived that training in plant pest control was moderately effective (57.9%) or effective (34.7%). This is not surprising in that most farmers were given practical exposure to various strategies of integrated pest management in experimental fields.

Table 29: Farmers' Perceived Effectiveness of Training in Pest Control

Training in Pest Control	Freq.	%
Ineffective	7	7.4
Moderately effective	55	57.9
Effective	33	34.7
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Perceived Effectiveness of farmers' Training in Dry Season Gardening

Farmers' Perceptions on Effectiveness of Training in Irrigating Crops

Generally, farmers perceived NGOs to provide effective farmer training in vegetable irrigation (Figure 10). Most (75%) of the farmer-respondents indicated that training of farmers in vegetables irrigating was effective. One out of every four (25%) of the farmer-respondents also believed that training of farmers in vegetable irrigating was very effective. This is expected because gardeners were provided with practical skills and knowledge

in basic irrigation techniques such as water application methods, drainage methods and crop water requirement.

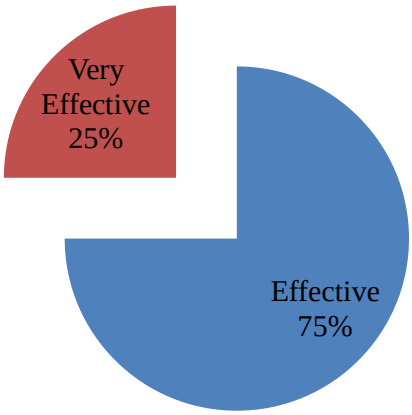

Figure 10: Farmers' Perceived Effectiveness of Training in Irrigating Crops

n = 20 (applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Effectiveness of Training in Post Harvest Loss Control

More than half (52.6%) of the farmer respondents indicated that training in post harvest loss control was very effective (Table 30). This is followed by 31.6% of the respondents indicating that training in post harvest loss control was effective. However, 7.4% of the farmers thought that post-harvest loss control was not effective. This is because some aspects of the post-harvest training were rather more theoretical and while other aspects were impracticable to small-scale farmers.

Table 30: Farmers' Perceived Effectiveness of Training in Post Harvest Loss Control

Training in Post Harvest Loss Control	Freq.	%
Ineffective	7	7.4
Moderately effective	8	8.4
Effective	30	31.6
Very effective	50	52.6
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Effectiveness Training in Livestock Production

Farmers' Perceptions on Effectiveness of Training in Housing of Livestock

Majority (54.5%) of the respondents felt that training of farmers in livestock housing was very effective (Table 31). The remaining 45.5% of the respondents thought that training of farmers in livestock housing was effective. It is the general view of farmers that NGOs provided very effective training in improved livestock housing. This is expected because the NGOs provided model livestock pens in the communities and building materials to participants to enable implement workshop recommendations. The perceived effectiveness of the training on improved livestock housing is attributed to the fact that the training focused on simple design and the use of suitable and available local building materials.

Table 31: Farmers' Perceived Effectiveness of Training in Housing of Livestock

Training in Livestock Housing	Frequency	%
Effective	25	45.5
Very effective	30	54.5
Total	*55	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Effectiveness of Training in Feeding of Livestock

Farmers generally perceived that NGOs provided effective training in improved livestock feeding (Table 32). Most (85.5%) of the farmer

Table 32: Farmers' Perceived Effectiveness of Training in Feeding of Livestock

Training in Livestock Feeding	Frequency	%
Moderately effective	7	12.7
Effective	47	85.5
Very effective	1	1.8
Total	*55	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

respondents indicated that training of farmers in livestock feeding was

effective. Few (12.7%) of the respondents also thought that training in livestock feeding was moderately effective. The practicable exposure of farmers to feed preparation such as hay, silage and grower mash for livestock and poultry using available local feed stuffs have accounted for this favourable opinion.

Farmers' Perceptions on Effectiveness of Training in Livestock Disease Prevention

The results in Table 33 show that 9 out of every 11 of the farmer-respondents (81.8%) indicated that training of farmers in livestock disease prevention was moderately effective. It is worthy to note that 9.1% indicated that training in livestock disease prevention was effective while 9.1% again indicated that training in livestock disease prevention was very effective.

Table 33: Farmers' Perceived Effectiveness of Training in Disease Prevention

Training in Livestock Disease Prevention	Frequency	%
Moderately effective	45	81.8
Effective	5	9.1
Very effective	5	9.1
Total	*55	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

This shows it is the general opinion of farmers that agricultural NGOs

provided effective training in livestock disease prevention. The effectiveness of training on livestock disease prevention is attributed to the practical demonstration of the application of drugs for control of worms, ticks and wounds as well the application of burdizzo for castration and oral vaccination of poultry.

Farmers' Perceptions on Effectiveness of Training in Animal Traction

Farmers' Perceptions on Effectiveness of Training in Bullock Traction

Majority (54%) of the farmer respondents believed that training of farmers in bullock traction was moderately effective while 22% respondents also perceived that training of farmers in bullock traction was effective (Table 34). However, 14% of the respondents felt that training of farmers in bullock

Table 34: Farmers' Perceived Effectiveness of Training in Bullock Traction

Training in Bullock Traction	Frequency	%
Ineffective	7	14
Moderately effective	27	54
Effective	11	22
Very effective	5	10
Total	*50	100

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

traction was not effective. NGOs' training of farmers in bullock traction is

generally perceived to be moderately effective. This is due to the failure of the two of the studied NGOs to provide the necessary practical training in bullock ploughing though the implements were provided to the beneficiary groups. Admittedly, all the surveyed NGOs did expertise in bullock training and had to rely on MoFA staff in many cases to conduct such training for them on contract.

Farmers' Perceptions on Effectiveness of Training in Donkey Traction

Farmers generally believed that Agricultural NGOs provided effective training in donkey traction (Table 35). More than 3 out of every 5 of the farmer-respondents (64%) indicated that training of farmers in donkey traction was very effective. The results also showed that 1 out of every 5 of the respondents (20%) perceived that training of farmers in donkey traction was effective.

Table 35: Farmers' Perceived Effectiveness of Training in Donkey Traction

Training in Donkey Traction	Frequency	%
Moderately effective	8	16
Effective	10	20
Very effective	32	64
Total	*50	100

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

The remaining 16% of the respondents thought that training of farmers

in donkey traction was moderately effective (Table 35). The perceived effectiveness of training in donkey traction is due to the fact the donkeys were mainly used to transport farm goods rather than for land tillage and the NGOs were able to provide such simple practical skills for transport purposes.

Farmers' Perceptions on Efficiency in Resources Use for Crop Production

Farmers' Perceptions on Efficiency in Resources Use for Land Preparation

The results in Figure 11 show that majority (63.2%) of the respondents indicated that the use of resources for land preparation was efficient while 29.5% of the respondents thought that the use of resources for land preparation was moderately efficient. This is not surprising because provision of bullocks and training in bullock plough have saved farmers time, energy and the cost involved in land preparation using either manual labour or traction service.

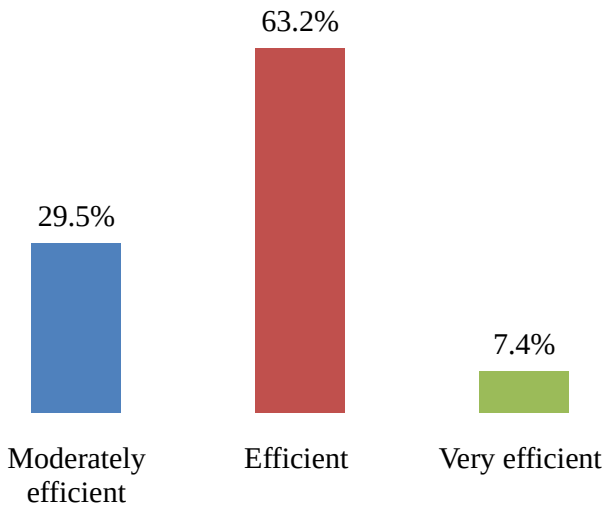

Figure 11: Farmers' Perceived Efficiency in Resources Use for Land Preparation (n = 200)

Source: Field Survey, 2008.

Farmers' Perceptions on Efficiency in Resources Use for Nursing of Seeds

In general, farmers were of the view that the use of resources use in seed nursing was moderately efficient (Table 36). Three out of every five farmer-respondents (60%) thought that the use of resources in nursing of seeds was moderately efficient. However, 2.5% of the respondents indicated the use of resources in seed nursing was inefficient. This is attributed to the farmers' failure to implement full nursery recommended practices. For instances, some of them failure to harden the seedlings prior to transplanting while some failure to control nursery pest leading seedling death.

Table 36: Farmers' Perceived Efficiency in Resources Use for Seed Nursing

Resources Use for Seed Nursing	Frequency	%
Inefficient	5	25
Moderately efficient	12	60
Efficient	3	15
Total	*20	100

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Efficiency in Resources Use for Planting

More than half (53.7%) of the respondents perceived that the use of resources in planting was inefficient (Table 37). This is followed by 33.7% indicating that the use of resources in planting was moderately efficient. The remaining 12.6% thought that the use of resources in planting was efficient.

The perceived inefficient use of resources in planting could be attributed to the fact the recommended spacing, depth and row planting required more labour and time to plant than the traditional staggered planting methods whereas farmers expectation is on labour and time saving innovations.

Table 37: Farmers' Perceived Efficiency in Resources Use for Planting

Resources Use for Planting	Frequency	%
Inefficient	51	53.7
Moderately efficient	32	33.7
Efficient	12	12.6
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Efficiency in Resources Use for Weed Control

The results presented in Table 38 show that 22.1% indicated that the use of resources in weed control was inefficient. However, most (77.9%) of

Table 38: Farmers' Perceived Efficiency in Resources Use for Weed Control

Resources Use for Weed Control	Frequency	%
Inefficient	21	22.1
Moderately efficient	71	74.7
Efficient	3	3.2
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

the respondents indicated that the use of resources in weed control was moderately efficient (74.7%) or efficient (3%). This is expected because practice of integrated weeds control measures has reduced labour, time and cost involved in frequent weeding.

Farmers' Perceptions on Efficiency in Resources Use for Soil Fertility Improvement

Farmers generally felt that the use of resources in soil fertility improvement practice was moderately efficient (Table 39). Majority (51.6%) of the respondents thought that there was moderately efficient use of resources in soil fertility improvement. This is followed by 32.6% indicating that there was efficient use of resources in soil fertility improvement. On the other hand, 15.8% of the respondents thought that there was inefficient use of resources in soil fertility improvement. This is due to the fact that the NGOs promoted the use organic fertilizers which though cheaper are more labour and time consuming with respect to transporting and application.

Table 39: Farmers' Perceived Efficiency in Resources Use for Soil Fertility Improvement

Resources Use for Soil Fertility Improvement	Frequency	%
Inefficient	15	15.8
Moderately efficient	49	51.6
Efficient	31	32.6
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Efficiency in Resources Use for Pest Control

The results in Table 40 indicate that majority (77%) of the farmer respondents thought that the use of resources in pest control was moderately efficient (67%) or efficient (10%). However, 23.2% of the respondents thought that the use of resources for pest control was inefficient. The fact that most farmer-respondents were of the opinion that the use of resources in pest control was efficient implied that farmers practice of integrated pest control management as recommended by the NGOs have yielded positive results in terms of time, labour and cost saving.

Table 40: Farmers' Perceived Efficiency in Resources Use for Pest Control

Resources Use for Pest Control	Frequency	%
Inefficient	22	23
Moderately Efficient	64	67
Efficient	9	10
Total	*95	100

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Efficiency in Resources Use in Dry Season Garden

Farmers' Perceptions on Efficiency in Resources Use in Irrigation of Vegetables

More than half (65%) of the respondents indicated that the use of resources in irrigating vegetables was efficient (Figure 12). The remaining 35% thought that the use of resources in irrigating vegetables was moderately

efficient. It is the general opinion of farmers that the use of resources in irrigating vegetables was efficient. The provision of water hoses and pipes sprinkler-caps to gardeners minimised the time and labour spent on irrigating their vegetables.

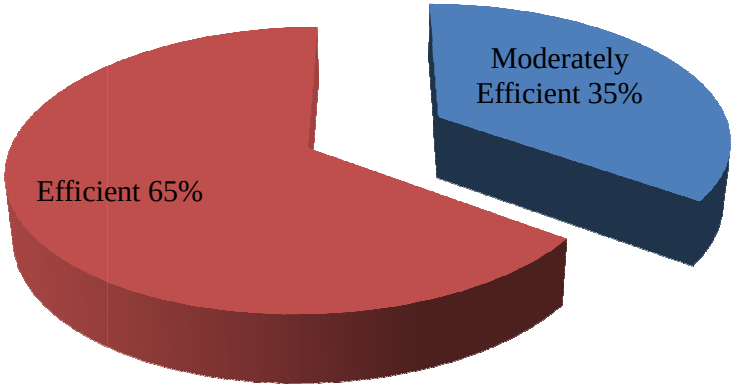

Figure 12: Farmers' Perceived Efficiency in Resources Use for Irrigating Vegetables

n = 20 (applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Efficiency in Resource Use in Post Harvest Loss Control

As shown by the results in Table 41, most (73.7%) of the respondents thought that the use of resources in post harvest loss control was moderately efficient (Table 41). However, 26.3% of the respondents indicated that there was inefficient use of resources in post harvest loss control. This is could be attributed to inappropriate recommended post-harvest loss techniques such as

cold storage systems and processing methods which were not suitable for small scale farmers.

Table 41: Farmers' Perceived Efficiency in Resources Use for Post Harvest Loss Control

Resources Use for Post Harvest Loss Control	Frequency	%
Inefficient	25	26.3
Moderately Efficient	70	73.7
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Efficiency in Resources Use for Livestock Production

Farmers' Perceptions on Efficiency in Resources Use for Housing of Livestock

Majority (56.4%) of the respondents thought there was inefficient use of resources in housing livestock (Figure 13). However, the remaining 43.4% of the respondents thought there was moderately efficient use of resources in housing livestock. This shows that it is the generally opinion of farmers that NGOs' extension intervention have led to inefficient use of farmers' resources as far as livestock housing was concerned.

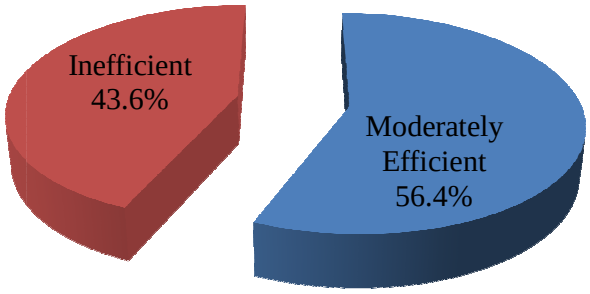

Figure 13: Farmers' Perceived Efficiency in Resources Use for Livestock Housing

n = 55 (applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Efficiency in Resources Use for Feeding of Livestock

Majority (81.8%) of the farmer respondents indicated that the use of resources in livestock feeding was moderately efficient, although 18.2% of the

Table 42: Farmers' Perceived Efficiency in Resources Use for Livestock Feeding

Resources Use in Feeding of Livestock	Frequency	%
Inefficient	10	18.2
Moderately Efficient	45	81.8
Total	*55	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

respondents thought that the use of resources in livestock feeding was

inefficient (Table 42). This is because some farmers, particularly the poultry farmers, pointed out that the use of cereals such maize and animal protein like fish to prepare grower mash was rather costly.

Farmers' Perceptions on Efficiency in Resources Use for Livestock Disease Prevention

The results presented in Figure 14 show that most (70.9%) of the respondents perceived that the use of resources for disease prevention was inefficient (Figure 14). On the other hand, the remaining 29.1% of the

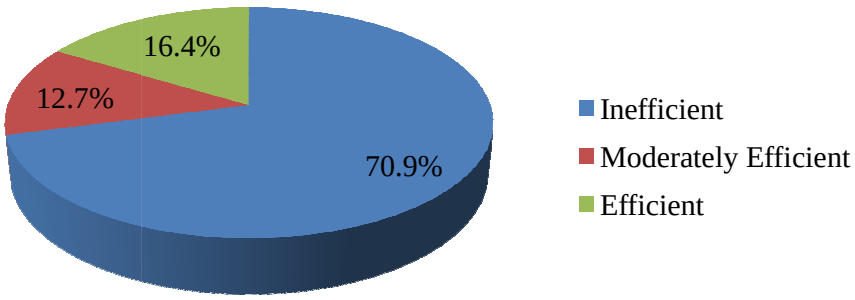

Figure 14: Farmers' Perceived Efficiency in Resources Use for Disease Prevention

n = 55 (applicable to some respondents).

Source: Field Survey, 2008.

respondent believed that there was moderately efficient use of resources in disease prevention. This is because many farmers failed to implement some recommended preventive measures such as regular cleaning and disinfection

of pens, tick and worm control, isolation of sick animals and introduction of new stock into existing ones without quarantine practices. As a result diseases such as coccidioses, small ruminant plague, Newcastle and fowl pox and common diarrhoea are recurrent in some farms making farms to continually invest in curative treatment and regular vaccinations to keep their animals healthy and productive.

Farmers' Perceptions on Efficiency in Promotion of Resources Use for Animal Traction

Farmers' Perceptions on Efficiency in Resources Use for Bullock Traction

In general, farmers believed that the use of resources in land tillage was efficient (Table 43). Most (70%) of the farmer-respondents indicated that the use of resources in land tillage by bullocks was either efficient (54%) or very efficient (16%) although 30% felt that the use of resources in land tillage by bullocks was moderately efficient. The fact that most farmer–respondents

Table 43: Farmers' Perceived Efficiency in Resources Use for Bullock Traction

Resources Use for Bullocks Traction	Frequency	%
Moderately Efficient	15	30
Efficient	27	54
Very Efficient	8	16
Total	*50	100

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

indicated that the use of resources in land tillage by bullocks was efficient implied that time, labour and cost have been saved by the adoption of such recommended land technology.

Farmers' Perceptions on Efficiency in Resources Use for Donkey Traction

Farmers were of the opinion that the use of resources in donkey traction was efficient (Figure 15). More than 3 out of every 5 of farmer-respondents (62%) thought that the use of resources in donkey traction was efficient. Twenty-six percent also thought that that the use of resources in

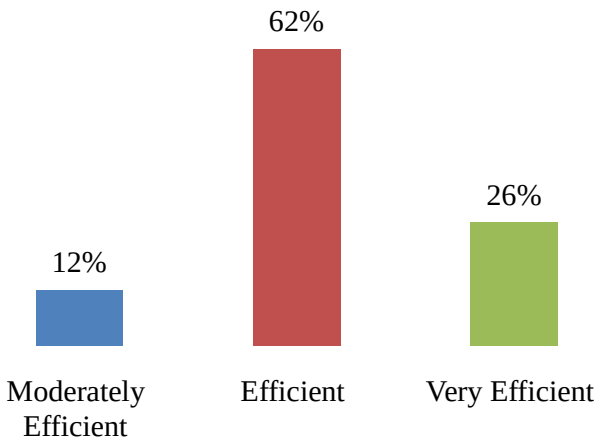

Figure 15: Farmers' Perceived Efficiency in Resources Use for Transporting Farm Goods

n = 50 (applicable to some respondents).

Source: Field Survey, 2008.

donkey traction was very efficient while than 12% indicated that use of resources in donkey traction was moderately efficient. This is because the use of donkeys in transporting goods to and from the farm as well water has been a time, labour and cost saving NGOs extension intervention.

Farmers' Perceptions on Improvements in Crop Production Due to NGOs Interventions

Farmers' Perceptions on Improvement in Land Preparation

The results presented in Table 44 show that most (85.3%) of the farmer-respondents indicated that improvement in land preparation was high. The remaining farmer-respondents (14.7%) indicated that improvement in land preparation was very high. This is not surprising because most of the target farmers were using hoes to prepare the land. The application of bullock and donkeys in land tillage has reduced the drudgery and time involved in land preparation. Hence the perception of farmers land preparation has improved significantly.

Table 44: Farmers' Perceived Improvement in Land Preparation

Improvement Land Preparation	Frequency	%
High	81	85.3
Very high	14	14.7
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

Farmers' Perceptions on Improvement in Seed Germination

Majority (54.7%) of the farmer-respondents indicated that there was high improvement in seed germination (Figure 16). The remaining farmer-respondents (45.3%) indicated that there was very high improvement in seed germination. Farmers used to plant their own seeds which were poorly

selected and stored. The provision of improved seeds and knowledge on the need to conduct germination test before planting have yielded high seed germination.

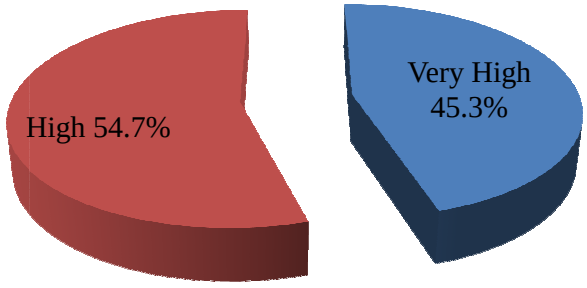

Figure 16: Farmers' Perceived Improvement in Seed Germination

n = 95 (applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Improvement in Weed Control

Generally, farmers perceived that improvement in weed control was high. Most (72.6%) of the farmer-respondents thought that the improvement in

Table 45: Farmers' Perceived Improvement in Weed Control

Weed Control	Frequency	%
Low	8	8.4
Moderately high	69	72.6
High	11	11.6
Very high	7	7.4
Total	*95	100.0

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

weed control was moderately high (Table 45). This is followed by 11.6% indicating that improvement in weed control was high. On the other hand, 8.4% felt that there was low improvement in weed control. The perceived high improvement in weed control is due to the fact the practical training provided on integrated weed control measures involving the combined application of chemical, mechanical and crop rotation was effective.

Farmers' Perceptions on Improvement in Pest Control

More than half (61.3%) of the farmer-respondents felt that improvement in pest control was moderately high (Figure 17). However, the remaining 38.7% thought that improvement in pest control was low. This perception could be attributed to the fact that some NGOs promoted the exclusive use of organic pesticides such as neem leaf and seed extracts (instead of integrated pest management methods) which were not as effective as the synthetic pesticides such as karate in controlling pests.

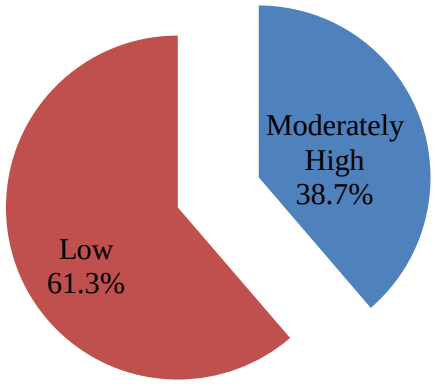

Figure 17: Farmers' Perceived Improvement in Pest Control

n= 95 (Applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Improvement in Post Harvest Loss Control

The results presented in Figure 18 show that more than half (57.9%) of the farmer-respondents indicated that improvement in post harvest loss control was high. The remaining farmer-respondents (42.1%) believed that improvement in post harvest loss control was moderately high. This is not surprising because the provision of storage facilities and chemical treatment of cereals and legumes for beneficiary farmers have yielded significant reduction in post-harvest loss of cereals and legumes.

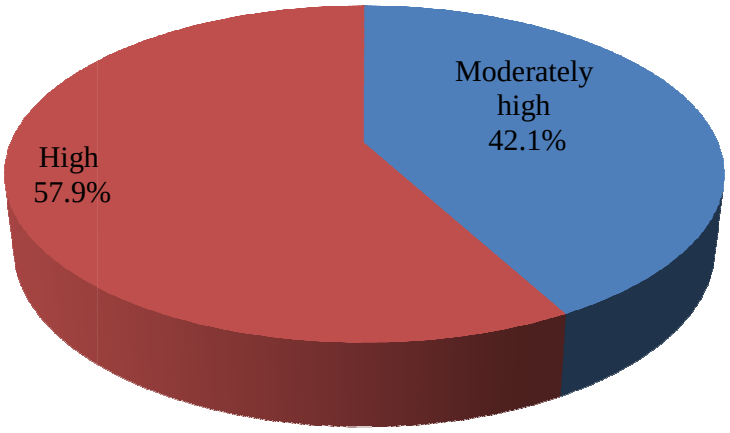

Figure 18: Farmers' Perceived Improvement in Post Harvest Loss Control

n = 95 (applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Improvement in Yield

Majority (54.7%) of the farmer-respondents perceived that improvement in yields was moderately high (Figure 19). A few (21.1%) also perceived that improvement in yields was high. However, 16.8% thought that

improvement in yields was low. The provision of inputs such as improved seeds, fertilizers and pesticides as well as training provided on cultural practices such planting, weed and pest control have contributed to significant increases in yields. Hence the perception of farmers that improvement in yield was high.

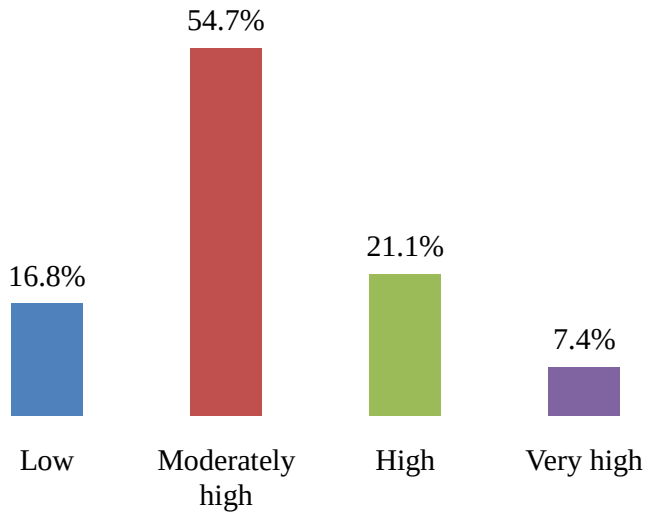

Figure 19: Farmers' Perceived Improvement in Yield

n = 95 (applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Improvements in Livestock Production Due to NGOs Interventions

Farmers' Perceptions on Improvement in Birth Rate of Livestock

In general, farmers were of the opinion that improvement in birth rate was high (Figure 20). Majority (60%) of the farmer-respondents believed that improvement in the birth rate of livestock was moderately high. Moreover, 10.9% thought that improvement in birth rate of livestock was high. However, 29.1% of the respondents thought that improvement in livestock birth rate of

livestock was low. This is because some farmers failed to culled old ewes, does and cows while others failed to castrate local breeding rams and bucks as recommended by NGOs. This is necessary because the local breeding males are more aggressive in mating than the improved ones supplied by the NGOs.

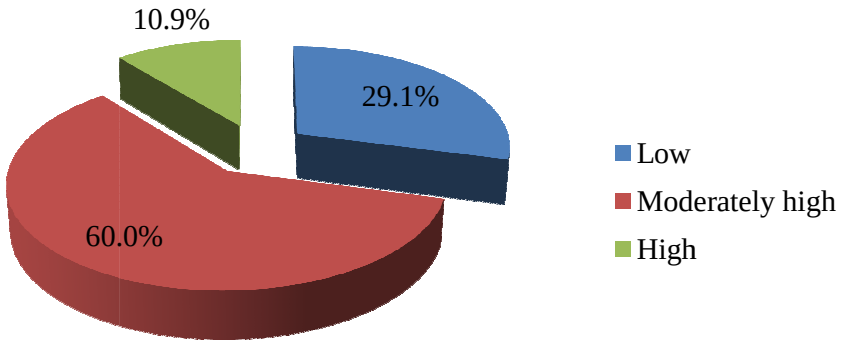

Figure 20: Farmers' Perceived Improvement in Birth Rate of Livestock

n = 55(applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Improvement in Growth Rates of Livestock

As shown by the results in Figure 21 more than 3 out of every 5 (67.3%) of the farmer-respondents felt that improvements in growth rates of livestock were high. One-fifth of them (20%) also thought that the improvements in livestock growth rates were moderately high. About one-tenth of them (12.7%) indicated that improvements in growth rates of livestock were very high. This is expected because the adoption of supplementary feeding have minimised the annual loss of body condition during the dry season when there is low quality and shortage of fodder.

Moreover, daily provision of hay, silage and agro-by-products to flock and herds on extensive management has led to significant gains in weight of animals.

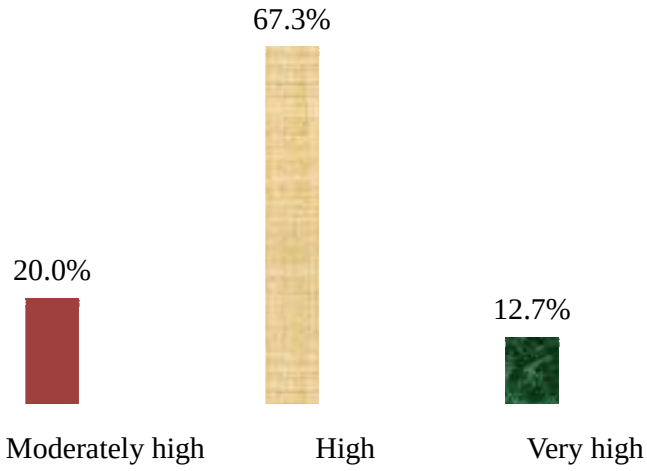

Figure 21: Farmers' Perceived Improvements in Growth Rates of Livestock

n = 55 (applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Improvements in Livestock Health

Majority (61.8%) of farmer-respondents believed that improvements in livestock health were high (Figure 22). The remaining 38.2% thought that improvements in livestock health were moderately high. The provision of veterinary drugs for curative treatment and regular vaccination of scheduled diseases have led to moderate improvements in livestock health although some farmers failed to adopt preventive and control measures such as routine cleaning and disinfection and isolation of sick animals.

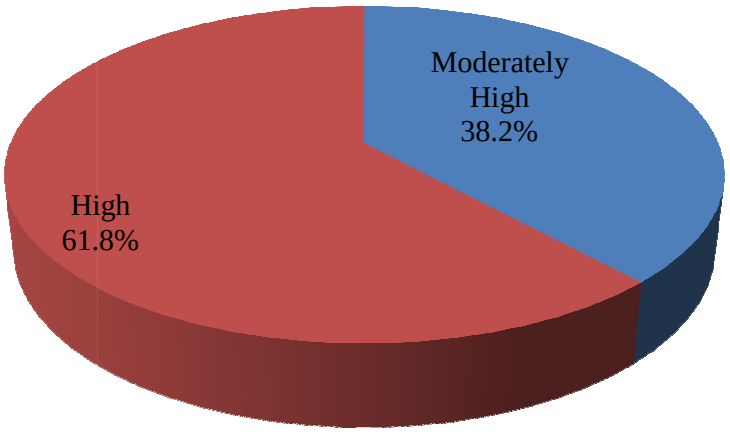

Figure 22: Farmers' Perceived Improvement in Livestock Health

n = 55 (applicable to some respondents).

Source: Field Survey, 2008.

Farmers' Perceptions on Improvement Transport of Farm Goods

Farmers generally perceived that improvement in transport of farm goods was high. Specifically, most (76%) of the respondents felt improvements in transport of farm goods was high (Table 46). This is

Table 46: Farmers' Perceived Improvement in Transport of Farm Goods.

Transport of Farm Goods	Frequency	%
Moderately high	7	14
High	38	76
Very high	5	10
Total	*50	100

*Applicable to some farmer-respondents.

Source: Field Survey, 2008.

followed by 14% indicating that improvements in transport of farm goods were moderately high while the remaining 10% thought that improvements in transport of farm goods were very high. The perceived high improvement in transport of farm goods is a result of the provision of donkeys and carts and the practical training provided on donkey traction which has reduced the drudgery and time of carrying farm goods to and from the farms.

Farmers' Perceptions on Improvement in Feeding of the Family

The results in Table 47 show that more than half (55%) of the farmer-respondents thought that improvement in family feeding was moderately high while 40% also indicated that improvement in family feeding was high. This confirms the assertion of Wellard and Copestake (1994) that extension interventions of agricultural NGOs have contributed greatly to the food security of many farm families in Africa. However, 5% of the farmer-respondents thought that improvement in family feeding was low. This could be attributed to the fact some farmers have large number of dependant that could be fed from their small farm size of less than an acre.

Table 47: Farmers' Perceived Improvement in Feeding the Family

Feeding of Family	Freq.	%
Low	10	5
Moderately high	110	55
High	80	40
Total	200	100

Source: Field Survey, 2008.

Farmers' Perceptions on Improvement in Incomes

Many (60%) of the farmer-respondents believed that improvement in incomes was moderately high (Figure 23). A few (33.5%) thought that improvement in incomes from production was high. On the other hand, 6.5% of them felt that improvement in incomes from production was low. This confirms the studies of World Bank (2004a and 2004b) and Ravi (2003) that NGOs engaged in agricultural micro-credit services have helped farmers to achieve significant improvement in farm incomes

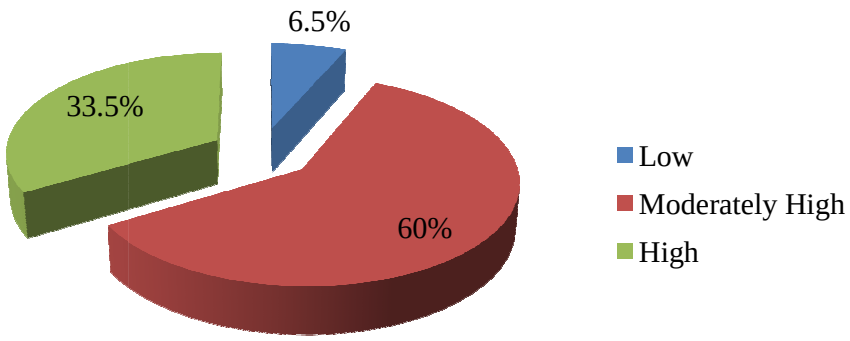

Figure 23: Farmers' Perceived Improvement in Income (n=200)

Source: Field Survey, 2008.

Comparison of Farmers' and Staff's Perceptions on Effectiveness of NGOs in Extension Delivery

Testing of Hypothesis

The results in Appendix A show the list of items used to estimate the composite means and standard deviations on effectiveness of NGOs in extension delivery. The results in Table 48 that the views of farmers (Mean =

3.61) differed very significantly from the views of the staff (Mean = 4.10) on the level of NGOs effectiveness in extension service delivery (t = 3.62, *P* = 0.001). NGOs staff were of the view that NGOs were more effective than farmers indicated in extension service delivery. The study therefore confirmed the alternative hypothesis which stated that there were significant differences in opinion of staff and farmers on the level of effectiveness of NGOs in extension service delivery. Oyugi (2004) reported that there is general perception among stakeholders in agricultural development that agricultural NGOs provide effective extension services.

Table 48: Comparison of Farmers and Staff Perceived Mean Effectiveness of NGOs

Type of Respondent	N	Mean	SD	d.f.	M. diff.	t - ratio	*P*.
Farmer	200	3.61	0.75	228	-0.49	3.62	0.001**
Staff	30	4.10	0.50	75.18			

Scale: 1 = Very ineffective, 2 = Ineffective, 3 = Moderately Effective,

4 = Effective and 5 = Very effective.

$p \leq 0.05$.

n = 230.

Source: Field Survey, 2008.

There are often differences in levels of expectations between extension service providers and their farmers which naturally affect their perceptions of project evaluation (Dougoh, 2007).

Comparison of Farmers' and Staff's Perceptions on Operational Efficiency of NGOs in Extension Delivery

Testing of Hypothesis

The results in Appendix B show the list of items used to estimate the composite means and standard deviations on operational efficiency of NGOs in extension delivery. The results of the t-test (Table 49) revealed that farmers and staff of NGOs differed significantly in their opinion on the level of NGOs efficiency in extension service delivery (t = -1.97 and *P* = 0.05). NGOs staff (Mean = 3.18) thought that agricultural NGOs were more operationally efficient than the farmers (Mean = 3.08) indicated in extension services delivery. The study therefore rejected the null hypothesis which stated that there were no significant differences in opinion of staff and farmers on the level of operational efficiency of NGOs in extension service delivery.

Table 49: Comparison of Farmers and Staff Perceived Mean Operational Efficiency of NGOs

Type of Respondent	N	Mean	SD	d.f.	M. diff.	t - ratio	*P*
Farmer	200	3.08	0.57	288	-0.10	-1.97	0.05*
Staff	30	3.18	0.55	36.45			

Scale: 1 = Very Inefficient, 2 = Inefficient, 3 = Moderately Efficient,

4 = Efficient and 5 = Very Efficient.

$p \leq 0.05$.

n = 230.

Source: Field Survey, 2008.

Moroso (2000) reported that NGOs field staff and farmers expressed widely

different views on the level of NGOs efficiency in extension service delivery. Mohanty (2006) concluded that agricultural NGOs were efficient in the provision of extension services to poor and small-scale farmers. Farmers (SD = 0.57) and NGOs staff (SD = 0.55) were consistent in their views.

Comparison of Perception of Farmers and Staff on Outcome Efficiency of NGOs in Extension Delivery

Testing of Hypothesis

The results in Appendix C show the list of items used to estimate the composite means and standard deviations on outcome efficiency of in extension delivery. The results in Table 50 show that farmers (Mean = 3.51) and staff of NGOs (Mean = 3.56) believed that there was high improvement in production outcomes of beneficiary farmers.

Table 50: Comparison of Farmers and Staff Perceived Mean Outcome Efficiency of NGOs

Type of Respondent	N	Mean	SD	d.f.	M. diff.	t - ratio	*P*
Farmer	200	3.51	0.55	292	-0.05	-1.04	0.06
Staff	30	3.56	0.56	32.45			

Scale: 1 = Very Low, 2 = Low, 3 = Moderately High, 4 = High and 5 = Very High.

$p \leq 0.05$.

n = 230.

Source: Field Survey, 2008.

With regard to the perceived level of improvement in production outcomes,

no significant difference was found between the farmers and staff of NGOs (t = - 1.04; *P* = 0.06). The study therefore confirmed the null hypothesis which stated that there were no significant differences in opinion of staff and farmers on the level of outcome efficiency of NGOs in extension service delivery. The standard deviations of farmers (SD = 0.55) and staff of NGOs (SD = 0.56) indicate that they expressed consistent views. The extension programmes of agricultural NGOs often lead to significant improvement in production outcomes of beneficiary farmers (Ben, 2003).

Major Constraints and Challenges of Farmers and Agricultural NGOs

Major Constraints of Farmers Who Worked With NGOs

The major constraints of farmers are presented in Table 51. Most of the farmers surveyed (90%) had poor access to land. They did not possess title to land by inheritance and could not hire or rent land for farming. Many of farmers interviewed acquired small land holdings for temporary use thanks to the generosity of friends and relatives.

Seventy five percent of the respondents indicated that the duration of agricultural extension support from Non Governmental Organisations was rather short. According to the farmers interviewed many NGOs tend to conduct short term agricultural projects which did not have long term impact on the beneficiary farmers. The results also indicate that 52.5% of the farmers had poor access to credit in cash. The respondents pointed out many NGOs preferred to offer production inputs for a particular line of production e.g. soya-bean or maize production instead of providing funds for farmers to produce any crop or rear any kind of livestock. Financial institutions

were reluctant to provide credit to them because of lack collateral or securities.

Despite provision of money for ploughing the farms, 50% of the farmers interviewed indicated that lack of tractors services due to (a) unavailability of tractors in their communities and (b) farm sizes, being less than an acre. It implies that the above factors constitute major constraints that could affect the proper implementation of NGOs extension recommendations.

Table 51: Constraints Facing Farmers Working With NGOs (N = 200)

Constraints of Farmers	Frequency	%
Poor access to land	180	90.0
Short term NGO support	150	75.0
Poor access to credit in cash	105	52.5
Lack of access to tractor services	100.	50.0

Source: Field Survey, 2008.

Major Challenges Facing NGOs in the Agricultural Sector

Table 52 presents the major challenges facing NGOs in agriculture. Inadequate staffing is the most challenging issue in NGO-based system extension (83%). The total number of staff of the five (5) NGOs covered in the study was fifty nine (59). This implies that agricultural NGOs operate with skeletal staff. Owing to this constraint many agricultural Non-Governmental Organisations use MoFA or other NGOs field personnel to help execute their extension programmes. The study supports the previous findings of other authors (Amezah & Hesse, 2002; Galaa, 2005) that most agricultural NGOs lacked qualified extension staff and depended heavily on MoFA extension

field staff. Poor partnership with MoFA or other NGOs was reported by 70% of the respondent as the second major challenge facing NGOs in the agricultural sector. Many NGOs, especially the international and foreign based ones, tend partner or collaborate with Ministry of Food and Agriculture or local NGOs to implement their agricultural extension programmes. However, many of these collaborative arrangements or partnerships are informal and not binding by any contractual agreement or performance. Galaa (2005) found that there have been poor partnership and collaborative arrangement between NGOs and MoFA and other NGOs. He pointed out that this affected the effective and efficient delivery of services.

Table 52: Challenges Facing Agricultural NGOs

Challenges of NGOs	**n**	**Frequency**	**%**
Inadequate personnel	30	25	83.0
Poor collaboration/partnership	30	21	70.0
Low technical expertise in agriculture	30	18	60.0
Low levels of education	30	17	56.6
Poor funding	30	15	50.0
Poor cost recovery of credit	30	10	33.0

Source: Field Survey, 2008.

Respondents (60%) reported that low technical expertise of staff was a major challenge facing agricultural Non-Government Organisations. Many of

the staff have qualifications below degree and have no specialised training in agriculture or extension. Galaa (2005) reported that most agricultural NGOs lacked the requisite technical expertise in agriculture and extension. Although NGOs interviewed were unwilling to disclose their levels of funding, 50% of the respondents pointed out reduced budgets and inconsistent funding pattern as a constraint to programme implementation. Poor recovery of loans was reported as the least challenging issue in NGO extension service delivery (33%). A number of beneficiary farmers often misconstrued the loan as grant while some misapplied it. The implication is that such farmers either failed or refused to pay back their loans.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the summary and major conclusions of the study. The recommendations and area for further research are also included.

Summary

Many Non-Governmental Organisations (NGOs) operate in the agricultural sector seeking to improve the livelihoods of rural farming communities. The growing number of NGOs in the funding and delivery of agricultural extension service has called for the need to examine the performance of Non-Governmental Organisations. However, limited studies have been conducted to examine the extension activities of the Non-Governmental Organisations sector (Amanor & Farrington, 1991; Bob-Millar, 2005).

The study was conducted to examine the performance of NGOs in agricultural extension delivery in the Upper West Region of Ghana. Specifically the study sought to:

1. describe background characteristics of farmers and staff of NGOs in agricultural extension delivery,
2. assess farmers' perceived effectiveness of agricultural extension service provided by NGOs,

3. assess farmers' perceived efficiency of agricultural extension service provided by NGOs,
4. compare farmers' and staff's perception of effectiveness and efficiency of extension service provided by NGOs, and
5. identify constraints affecting the performance of NGOs in agricultural extension service delivery

A descriptive survey study design was used. Interview schedule and structured questionnaire were used to collect primary data from 200 farmers and 30 staff of NGOs respectively. A multi-stage sampling procedure was used to select 5 districts out of the total of 9 in the Upper West Region and 5 NGOs out of the 15 registered NGOs operating in the agricultural sector in the Region.

The perceptions of respondents on effectiveness of NGOs in extension service delivery was measured on a five-point Likert-type scale of 1 = Very ineffective, 2 = Ineffective, 3 = Moderately Effective, 4 = Effective and 5 = Very effective on effectiveness scale. Similarly, a scale of 1 = Very Inefficient, 2 = Inefficient, 3 = Moderately Efficient, 4 = Efficient and 5 = Very Efficient was used to measure perceptions of respondents on efficiency of NGOs in extension service delivery on operational efficiency scale. Farmers' perceptions on outcome efficiency of extension service provided by NGOs was measured on a scale of 1 = Very Low, 2 = Low, 3 = Moderately High, 4 = High and 5 = Very High. The collected data was cleaned and then analysed using a computer software programme (Statistical Package for Social Services version 15). Descriptive statistics such as cross-tabulations, means and standard deviations were computed to summarise and describe the

demographic characteristics of farmers and staff of NGOs. Similarly, frequencies and percentages were also computed to describe farmers' perception on effectiveness and efficiency of NGOs in extension service delivery. An independent sample t-test was also computed to compare farmers' and staff's perceptions on effectiveness and efficiency of NGOs in extension service delivery.

The findings showed that majority of the farmer-respondents were in the youthful age group of between 16 to 35 years. Female beneficiary farmers were far more than male farmers. Furthermore, most of the farmers were illiterates. Moreover, many of the farmer-respondents had worked for less than 5 years with agricultural NGOs. Majority of farm size of farmers ranged from ¼ to 1 acre.

Most of the staff of NGOs had academic qualifications below BSc degree. For every female staff there were 2 male staff. Moreover 4 out of the 5 supervisors were males while 1 was female. All the 3 project officers were male staff. The findings further indicated that most of the staff who worked for less than 5 years were young while those who have experienced 5 years and above were adults.

The majority of field staff of NGOs had less than 5 years of working experience as extension staff. The highly ranked staff have worked more than 5 years experience. Most of the field staff of NGOs were Certificate holders while the project officers were Bachelor and Master degree holders.

Farmers' general perception is that NGOs were very effective in awareness creations and sensitisation programmes. Majority of the farmer-respondents believed that NGOs were effective in providing inputs for various

lines of production such as livestock, animal traction, crops and dry season gardening. The findings of the study also indicated that farmer group meetings with staff of NGOs and farm visits by staff of NGOs were effective. However, field demonstrations organised by NGOs were moderately effective while field days organised were ineffective.

Results from the study revealed that NGOs were effective in involving farmers in extension programming. Specifically, farmers' involvement of in needs identification and programme were effective while their involvement implementation solutions identification and evaluation was moderately effective.

In general terms, NGOs provided effective training for farmers in various crop production activities namely land preparation, seed nursing, planting, weed control, soil fertility, pest control, water application, and post harvest loss control. The findings also indicated that there was effective training of farmers in various livestock production activities such as housing of livestock, feeding of livestock, disease prevention, bullock and donkey traction.

The general view of farmers was that resources use in land preparation, irrigating of vegetables, bullock and donkey traction was efficient. Similarly, farmers' general perception was that resources use was moderately efficient in the following production activities: seed nursing, planting, weed control, soil fertility, pest control, water application, post harvest loss control and feeding of livestock. However, farmers thought that resources use in planting, livestock disease prevention and livestock housing was inefficient. It was also observed that farmers generally believed that improvement in: land

preparation, post-harvest control, livestock growth rate, livestock health, and transport of farm goods was high. On the other hand, farmers generally thought that improvement in weed control, pest control, yield, and livestock birth rate was moderately high. Furthermore, it was the general opinion of farmers that improvement in feeding of the family and production incomes of beneficiary farmers was moderately high.

With respect to effectiveness of extension service provided by NGOs, farmers (Mean = 3.61) and staff of NGOs (Mean = 4.10) believed that NGOs provided effective extension service to target farmers. In terms of operational efficiency, farmers (Mean = 3.08) and staff (Mean = 3.18) thought that NGOs extension service generally promoted efficient use of farmers' resources in farming activities. On outcome efficiency, farmers (Mean = 3.51) and staff of NGOs (Mean = 3.56) felt that NGOs extension service generally contributed to high improvement in production outputs and outcomes.

Significantly, farmers and staff of NGOs differed in opinion on the level of NGOs effectiveness in delivery of extension service ($t = 3.62$, sig. = 0.001). Similarly, statistically significant difference was found between farmers' and staff's perceptions on the level of operational efficiency of NGO extension service delivery ($t = -1.97$ and sig. = 0.05). However, no statistically significant difference was found between farmers' and staff's opinion on the level of outcome efficiency of NGO extension service delivery ($t = - 1.04$; sig. = 0.06).

In spite of the general perception of farmers that NGOs were effective and efficient in providing extension service, farmers indicated that they faced some constraints that impacted negatively on farmers' production and the

performance of NGOs. Most of the farmers surveyed had poor access to land. They did not possess title to land by inheritance as majority of them were females. In addition, they could not hire or rent land for farming since under the Tendaaba System land is neither sold nor rented but could only be inherited by male family members. Many of the farmers interviewed acquired small land holdings for temporary use thanks to the generosity of friends and relatives.

Many of the farmers interviewed indicated that NGOs tend to undertake short term agricultural projects which did not have long term impact on the beneficiary farmers. The results also indicate that more than of the farmer-respondents had poor access to credit in cash. Majority of the farmer-respondents pointed out that NGOs preferred to offer production inputs for a particular line of production e.g. soya-bean or maize production instead of providing funds for farmers to produce any crop or rear any livestock of choice. Financial institutions were reluctant to provide credit to farmers because of lack of collateral or securities. Despite the provision of money by some NGOs for farmers to use tractor services, half of the farmers interviewed indicated that farmers lack tractors services.

Furthermore, the staff of NGOs reported that there were a number of challenges affecting the performance of NGOs in extension service delivery. Most of the staff interviewed indicated inadequate staffing is the most challenging issue. Majority of the staff also pointed out poor partnership with MoFA and other NGOs as the second major challenge facing NGOs in the agricultural sector. Many NGOs, especially the international and foreign based ones, tend to partner or collaborate with Ministry of Food and Agriculture or

local NGOs to implement their agricultural extension programmes. However, many of these collaborative arrangements and partnerships were found to be weak in that they were informal and temporary. Moreover, these collaborative arrangements and partnerships were observed to lack contractual agreement and performance contract.

The results also show that most of the staff-respondents indicated that staff had low technical expertise in agriculture. They had low technical knowledge and skills in areas such as extension, veterinary, animal traction and irrigation. Furthermore, majority of the staff-respondents reported that staff had low levels of education. Specifically, the results on staff's educational background revealed that many of the staff of NGOs had qualifications below BSc.

Although NGOs interviewed were unwilling to disclose their levels of funding, half of the staff interviewed pointed out reduced budgets and inconsistent funding pattern as a constraint to programme implementation. It was indicated that NGOs depended heavily on donor partners and other external sources of funds to execute programmes. Poor recovery of loans from farmers was reported as the least challenging issue in NGOs extension service delivery. According to the staff interviewed, a number of beneficiary farmers often misconstrued the loan as grant while some misapplied it. Consequently, such farmers either failed or refused to pay back their loans.

Conclusions

Based on the results, the study concludes that:

1. Non-Governmental Organisations target the youth, females, and small scale farmers. Majority of the target farmers of NGOs were illiterates. The period of working relationship between NGOs and target farmers is generally short (i.e. less than five years).

2. Agricultural NGOs staff have low academic qualifications and occupy low positions in the organisations. Moreover, there are far more male staff than the female staff.

3. There is gender disparity in the staffing and position of staff. The finding also revealed a direct relationship between age and work experience. The younger the staff, the less work experience he had in NGOs. Moreover it was observed that there is a direct relationship between level of academic qualification and position. The higher the qualification of the staff, the higher position they hold in NGOs.

4. Agricultural NGOs were effective in awareness creation because they have organisational capacity and skills to undertake awareness creation and sensitisation programmes. Moreover, agricultural NGOs employ effective methods of extension delivery. Furthermore, agricultural NGOs provide effective training for farmers. Agricultural NGOs were very effective in providing inputs for the various production activities.

5. Agricultural NGOs promoted moderately efficient use of farmers' resources and high improvements in production outputs and outcomes.

6. Significantly, farmers and staff of NGOs differed in opinion on the level of NGOs effectiveness and efficiency in delivery of extension.

7. Farmers perceived poor access to land, short term NGOs support, poor access to credit in cash and lack of tractor services as major constraints to their

production activities. Staff of NGOs also perceived inadequate field personnel, poor collaboration/partnership, low technical expertise and low levels of education as major challenges facing the effective and efficient performance of agricultural NGOs.

Recommendations

In assessing the performance of NGOs in extension service delivery in the Upper West Region of Ghana, the study findings indicate that NGOs were generally perceived to be effective and moderately efficient in extension service delivery.

The study recommends that NGOs should address poor collaboration and partnerships with MoFA and other agricultural service providers by taking the following steps: a) streamline their operations with MoFA and other private agricultural service providers in their operational areas to avoid duplications of projects and competitions in service delivery and b) regularise and streamline collaboration and partnerships with MoFA and other private agricultural service providers in their operational areas by signing partnership agreements and performance contracts with them. This will also go a long to address the issue of inadequate field personnel of NGOs in that NGOs could benefit from the services of extension personnel of MoFA and the private sector partners in programme implementation and monitoring.

In order to enhance funding for NGOs extension programmes NGOs should: (a) exploit local sources of funding to complement foreign financial support by embarking on fund raising campaigns targeted at local corporate bodies or entities that have social responsibility to support such projects and

(b) undertake income generation activities with target farmers to generate internal funds to sustain projects.

Farmers identified short duration of NGOs extension support as constraint that impacted negatively on projects performance. Indeed most target farmers indicated that they had less than 5 years working relationship with NGOs as extension service providers. NGOs could address this by taking the following steps: (a) design and implement long term agricultural programmes to a limited number of communities in operational areas (b) provide continuous support/services to the beneficiary farmers for at least a period of five years and c) provide full services/support for the particular line of production (i.e. from provisions of inputs to marketing of the produce). This will ensure long term project impact on the livelihoods of beneficiary farmers and also facilitate the step by step graduation of beneficiary farmers from subsistence to semi-commercial level of production.

Suggested Areas for Further Research

The study adapted Fish-pool's framework for assessing extension service performance. However, due to constraints of time and financial resources three conceptual variables namely effectiveness, operational efficiency and outcome efficiency were studied instead of the five dimensional variables in the framework. It is therefore suggested future research should focus on unstudied variables (social justice and standards of service). This will contribute to a more complete assessment and a fuller understanding of the performance of agricultural NGOs.

This study is not exhaustive. It was limited to farmers' and staff's opinions due to constraints of time and financial resources. However, a clearer understanding of the performance of NGOs in agricultural extension service delivery would be more exhaustive if diverse views from all key stakeholders were solicited. Thus, a similar study comparing views from all key stakeholders (Agricultural Extension staff of MoFA, donors and staff of NGOs, farm input dealers, beneficiary and non beneficiary farmers of NGOs) would greatly contribute to the available literature on performance.

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APPENDICES

Appendix A: Means and Standard Deviations of Farmers' and Staff's Perceived Effectiveness of NGOs in Extension Service Delivery

Variables of effectiveness	Farmers		Staffs	
	Mean	SD	Mean	SD
Awareness of NGO existence	4.51	0.84	4.53	0.54
Awareness of the types services	4.68	0.91	4.5	0.41
Awareness of NGOs field staff	4.44	0.52	4.54	0.51
Awareness of the location of NGOs offices	2.12	0.76	3.21	0.46
Inputs for crop production	3.49	0.76	3.5	0.56
Inputs for dry season gardening	3.95	0.68	4.73	0.68
Inputs for livestock production	3.34	1	4.36	0.54
Inputs for animal traction	3.34	0.87	4.54	0.57
Involvement of farmers in needs identification	3.91	0.85	4.51	0.55
Involvement of farmers in identification of solutions	3.41	0.93	4.21	0.53
Involvement of farmers in programme implementation	4.16	0.79	4.26	0.37
Involvement of farmers in programme evaluation	2.56	0.71	3.41	0.51
Group meetings with field staff	4.58	0.52	4.51	0.52
Farm visits by field staff	3.82	0.75	4.01	0.45
Field Demonstrations	3.29	0.58	3.55	0.38
Field days for target farmers	2.31	0.53	3.31	0.53
Composite Mean	3.61	0.75	4.10	0.50

n = 230.

Source: Field Survey Data, 2008.

The means were calculated from a scale: 1 = Very Ineffective 2 = Ineffective 3 = Moderately Effective 4 = Effective 5 = Very Effective.

Appendix B: Means and Standard Deviations of Farmers' and Staff's Perceived Operational Efficiency of NGOs in Extension Service Delivery

Production activity/practice	Farmers		Staffs	
	Mean	SD	Mean	SD
Land preparation	3.78	0.56	3.50	0.62
Nursing of seed	2.90	0.64	3.63	0.61
Planting	2.58	0.70	3. 21	0.50
Weed control	2.81	0.46	3.56	0.61
Soil fertility improvement	3.16	0.67	4.10	0.49
Pest control	2.86	0.55	3.27	0.57
Irrigation of vegetables	3.65	0.48	3.23	0.50
Post harvest loss control	2.73	0.44	2.86	0.67
Housing of livestock	2.43	0.50	2.58	0.67
Feeding of livestock	2.81	0.38	2.86	0.55
Disease prevention	2.45	0.76	2.81	0.48
Bullock traction	3.86	0.67	2.90	0.44
Donkey traction	4.14	0.60	2.86	0.49
Composite mean	3.08	0.57	3.18	0.55

n = 230.

Source: Field Survey Data, 2008.

The means were calculated from a scale: 1 = Very Inefficiency 2 = Inefficiency 3 = Moderately Efficiency 4 = Efficiency 5 = Very Efficiency.

Appendix C: Means and Standard Deviations of Farmers' and Staff's Perceived Outcome Efficiency of NGOs in Extension Service Delivery

Outputs/outcomes	Farmers		Staffs	
	Mean	SD	Mean	SD
Land preparation	4.14	0.35	3.50	0.62
Seed germination	4.54	0.50	3.63	0.61
Weed control	3.17	0.68	3.56	0.61
Pest control	2.61	0.49	4.10	0.49
Post harvest loss control	3.57	0.49	3.23	0.50
Yield	3.18	0.80	3.25	0.46
Birth rate of animals	2.81	0.61	4.20	0.49
Growth rate of animals	3.92	0.57	4.03	0.50
Health status of animals	3.61	0.49	3.30	0.46
Animal traction	3.96	0.49	3.53	0.29
Family feeding	3.35	0.57	3.26	0.8
Farm incomes	3.27	0.57	3.16	0.96
Composite mean	3.51	0.55	3.56	0.56

n = 230.

Source: Field Survey Data, 2008.

The means were calculated from a scale: 1 = Very Low 2 = Low 3 = Moderately High 4 = High 5 = Very High.

Appendix D: Interview Schedule for Farmers

Section A: Socio-demographic characteristics

Please indicate your response by ticking (√) or writing where appropriate

1. Sex ( ) Male ( ) Female
2. Age as at last birthday _____ years
3. Highest level of formal education

( ) No Formal Education ( ) Primary School Education ( ) Middle Sch. Cert. ( ) JSS Cert. ( ) SSS Cert. ( ) Post-Secondary Cert. ( ) Tertiary

4. How many years have you been working with NGO?
5. What is the total size of your farmland in_____ acreage?

Section B: Effectiveness of NGOs Agricultural Service

6 **Perceptions on effectiveness of awareness creation**

6.1 Below are statements about farmers' awareness of NGOs extension services in their community. Please circle the corresponding number to each statement to rate the effectiveness of NGOs in creating farmers' awareness about their extension services.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE).

Awareness creation	Level of Effectiveness				
	VI	I	ME	E	VE
Awareness of NGO existence in your community	1	2	3	4	5
Awareness of types of agric services NGOs provide	1	2	3	4	5
Awareness of NGOs field staff in your community	1	2	3	4	5
Awareness of the location of NGOs offices	1	2	3	4	5

7 **Perceptions on effectiveness of methods of delivery**

7.1 The following methods were used by NGOs to deliver extension services to farmers. Please circle the corresponding number to each method to rate the effectiveness of the method used by NGOs.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE).

Method of delivery	Level of Effectiveness				
	VI	I	ME	E	VE
Farmer group meetings	1	2	3	4	5
Farm visits	1	2	3	4	5
Field demonstrations	1	2	3	4	5
Field days	1	2	3	4	5

8 **Perceptions on effectiveness of farmers' participation**

8.1 Below are statements about farmers' participation in NGOs extension programming. Please circle the corresponding number to each statement to rate the effectiveness of farmers' involvement in the various stages of programming.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE).

Participation of Farmers in Extension Programming	Level of Effectiveness				
	VI	I	ME	E	VE
Identification of needs/problems	1	2	3	4	5
Identification of solutions	1	2	3	4	5
Programme implementation	1	2	3	4	5
Programme evaluation	1	2	3	4	5

9 **Perceptions on effectiveness of inputs provision**

9.1 Please circle the corresponding number to each statement to rate the effectiveness of NGOs in providing inputs for your production activity.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE).

Provision of Inputs for Production Activities:	Level of Effectiveness				
	VI	I	ME	E	VE
Crop production	1	2	3	4	5
Dry season gardening	1	2	3	4	5
Animal production	1	2	3	4	5
Animal traction	1	2	3	4	5

10 **Perceptions on effectiveness of training**

10.1 Farmers were trained in the areas listed below. Please circle the corresponding number to each statement to rate the effectiveness of the training in each production activities

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE).

Training of Farmers in Production Activities:	Level of Effectiveness				
	VI	I	ME	E	VE
Land preparation	1	2	3	4	5
Nursing of seeds	1	2	3	4	5
Planting	1	2	3	4	5
Weed control	1	2	3	4	5
Soil fertility maintenance	1	2	3	4	5
Pest control	1	2	3	4	5
Watering of vegetable	1	2	3	4	5

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE)

Trainingof Farmers in Production Activities:	Level of Effectiveness				
	VI	I	ME	E	VE
Post harvest loss control	1	2	3	4	5
Housing of livestock	1	2	3	4	5
Feeding of livestock	1	2	3	4	5
Prevention and control of livestock disease	1	2	3	4	5
Bullock traction (land tillage)	1	2	3	4	5
Donkey traction (transport)	1	2	3	4	5

Section C: Operational efficiency of extension intervention

11 **Perceptions on efficiency in resource use**

11.1 Activities that farmers carried out are listed below. Please circle the corresponding number to each statement to rate the level of efficiency in resource use for each of these activities.

Use this scale: 1 = Very Inefficiency (VI) 2 = Inefficiency (E) 3 = Moderately Efficiency (ME) 4 = Efficiency (E) 5 = Very Efficiency (VE).

Activity	Level of Efficiency				
	VI	I	ME	E	VE
Land preparation	1	2	3	4	5
Nursing of seed	1	2	3	4	5
Planting	1	2	3	4	5
Weed control	1	2	3	4	5
Soil fertility maintenance/improvement	1	2	3	4	5
Pest control	1	2	3	4	5
Watering of Vegetables	1	2	3	4	5
Post harvest loss control	1	2	3	4	5
Housing of livestock	1	2	3	4	5
Feeding of livestock	1	2	3	4	5
Prevention and control of livestock disease	1	2	3	4	5
Bullock traction (land tillage)	1	2	3	4	5
Donkey traction (transport)	1	2	3	4	5

Section D: Outcome Efficiency of NGOs extension intervention

12 **Perceptions on improvement in outputs and outcomes**

12.1 A set of statement in relation to improvement in production outputs and outcomes are listed in the table below. Please circle the corresponding number to each statement to rate the level of improvement in production outputs and outcomes.

Use this scale: 1 = Very Low (VL) 4 = Low (L) 3 = Moderately High (MH) 4 = High (H) 5 = Very High (VH).

Outputs/outcomes	Level of Improvement				
	VL	L	MH	H	VH
Land preparation	1	2	3	4	5
Seed germination	1	2	3	4	5
Weed control	1	2	3	4	5
Pest control	1	2	3	4	5
Post harvest loss control	1	2	3	4	5
Yield	1	2	3	4	5
Improved birth rate	1	2	3	4	5
Improved growth rate	1	2	3	4	5
Improved health of livestock	1	2	3	4	5
Improved land tillage by bullocks	1	2	3	4	5
Improved transport of farm goods by donkeys	1	2	3	4	5
Improved family feeding	1	2	3	4	5
Improved farm incomes	1	2	3	4	5
Family feeding	1	2	3	4	5
Farm incomes	1	2	3	4	5

Section E: Constraints of farmers

12. Do you face any major constraints in your production enterprise, if **yes** answer question 13?

( ) Yes ( ) No

13. Please comment briefly on the major constraints affecting your production?

(i) _____

(ii) _____

(iii)_____

Appendix E: Questionnaire for NGO Staff

Section A: Effectiveness of NGOs Agricultural Service

1 **Perceptions on effectiveness of awareness creation**

1.1 Below are statements about farmers' awareness of NGOs extension services in their community. Please circle the corresponding number to each statement to rate the effectiveness of NGOs in creating farmers' awareness about their extension services.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE).

Awareness creation	Level of Effectiveness				
	VI	I	ME	E	VE
Awareness of NGO existence in your community	1	2	3	4	5
Awareness of types of agric services NGOs provide	1	2	3	4	5
Awareness of NGOs field staff in your community	1	2	3	4	5
Awareness of the location of NGOs offices	1	2	3	4	5

2 **Perceptions on effectiveness of methods of delivery**

2.1 The following methods were used by NGOs to deliver extension services to farmers. Please circle the corresponding number to each method to rate the effectiveness of the method as used by NGOs.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE).

Method of delivery	Level of Effectiveness				
	VI	I	ME	E	VE
Farmer group meetings	1	2	3	4	5
Farm visits	1	2	3	4	5
Field demonstrations	1	2	3	4	5
Field days	1	2	3	4	5

3 **Perceptions on effectiveness of farmers' participation**

3.1 Below are statements about farmers' participation in NGOs extension programming. Please circle the corresponding number to each statement to rate the effectiveness of farmers' involvement in the various stages of programming.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE)

Participation of Farmers in Extension Programming	Level of Effectiveness				
	VI	I	ME	E	VE
Identification of needs/problems	1	2	3	4	5
Identification of solutions	1	2	3	4	5
Programme implementation	1	2	3	4	5
Programme evaluation	1	2	3	4	5

4 **Perceptions on effectiveness of inputs provision**

4.1 Please circle the corresponding number to each statement to rate the effectiveness of NGOs in providing inputs for your production activity.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE)

Provision of Inputs for Production Activities:	Level of Effectiveness				
	VI	I	ME	E	VE
Crop production	1	2	3	4	5
Dry season gardening	1	2	3	4	5
Animal production	1	2	3	4	5
Animal traction	1	2	3	4	5

5 **Perceptions on effectiveness of training**

5.1 Farmers were trained in the areas listed below. Please circle the corresponding number to each statement to rate the effectiveness of farmers' training in each production activities.

Use this scale: 1 = Very Ineffective (VI) 2 = Ineffective (I) 3 = Moderately Effective (ME) 4 = Effective (E) 5 = Very Effective (VE)

Training of farmers in production activities	Level of effectiveness				
	VI	I	ME	E	VE
Land preparation	1	2	3	4	5
Nursing of seeds	1	2	3	4	5
Planting	1	2	3	4	5
Weed control	1	2	3	4	5
Soil fertility maintenance	1	2	3	4	5
Pest control	1	2	3	4	5
Watering of vegetable	1	2	3	4	5
Post harvest loss control	1	2	3	4	5
Housing of livestock	1	2	3	4	5
Feeding of livestock	1	2	3	4	5
Prevention and control of livestock diseases	1	2	3	4	5
Bullock traction (land tillage)	1	2	3	4	5
Donkey traction (transport)	1	2	3	4	5

Section B: Operational efficiency of extension intervention

6 **Perceptions on efficiency in resource use**

6.1 Activities that farmers carried out are listed below. Please circle the corresponding number to each statement to rate the level of efficiency in resource use for each of these activities.

Use this scale: 1 = Very Inefficiency (VI) 2 = Inefficiency (E) 3 = Moderately Efficiency (ME) 4 = Efficiency (E) 5 = Very Efficiency (VE)

Activity	Level of Efficiency				
	VI	I	ME	E	VE
Land preparation	1	2	3	4	5
Nursing of seed	1	2	3	4	5
Planting	1	2	3	4	5
Weed control	1	2	3	4	5
Soil fertility maintenance/improvement	1	2	3	4	5
Pest control	1	2	3	4	5
Vegetable watering	1	2	3	4	5
Post harvest loss control	1	2	3	4	5
Housing of livestock	1	2	3	4	5
Feeding of livestock	1	2	3	4	5
Prevention and control of livestock diseases	1	2	3	4	5
Bullock traction (land tillage)	1	2	3	4	5
Donkey traction (transport)	1	2	3	4	5

Section C: Outcome Efficiency of NGOs extension intervention

7 **Perceptions on improvement in outputs and outcomes**

7.1 A set of statement relation to improvement in production outputs and outcomes are listed in table below. Please circle the corresponding number to each statement to rate the level of improvement in production outputs and outcomes.

Use this scale: 5 = Very Low (VL) 4 = Low (L) 3 = Moderately High (MH) 4 = High (H) 5 = Very High (VH)

Outputs/outcomes	Level of Improvement				
	VL	L	MH	H	VH
Improved land preparation	1	2	3	4	5
Improved seed germination	1	2	3	4	5
Improved weed control	1	2	3	4	5
Improved pest control	1	2	3	4	5
Improved post harvest loss control	1	2	3	4	5
Improved yield	1	2	3	4	5
Improved birth rate	1	2	3	4	5
Improved growth rate	1	2	3	4	5
Improved livestock health	1	2	3	4	5
Improved transport of farm goods (donkeys)	1	2	3	4	5
Improved family feeding	1	2	3	4	5
Improved farm incomes	1	2	3	4	5

Section D: Challenges facing agricultural NGOs

8. Does your NGO face any major challenges in the delivery of extension service, if **yes** answer question 11?

( ) Yes ( ) No

9. Please comment briefly on major challenges affecting performance of agricultural NGOs?

(iv)_____

(v) _____

(vi)_____

Section E: Background Information

Please indicate your response by ticking (√) or writing where appropriate

10. Sex ( ) Male ( ) Female

11. Age as at last birthday _____ years

12. Highest level of academic qualification

( ) Middle Sch. Cert. ( ) JSS Cert. ( ) SSS/O' Level Cert. ( ) General Cert. in Agric. ( ) Diploma in Agric. ( ) BSc ( ) MSc ( ) Others please specify

13. What is your present rank or position?

14. Working experience with NGO _____years