UNIVERSITY OF CAPE COAST

STAKEHOLDERS' PERCEPTION OF PRIVATE SECTOR PARTICIPATION IN AGRICULTURAL EXTENSION DELIVERY PROCESS IN THE HOHOE DISTRICT OF THE VOLTA REGION OF GHANA

BY

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DECLARATION

Candidate's Declaration

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

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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.

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ABSTRACT

The government of Ghana has been the main provider of public agricultural extension services. The increasing inability of the government to adequately fund its agricultural extension activities has resulted in the search for alternative approaches to adequately meet the demands for agricultural extension services.

Using both quantitative and qualitative research methods, the study surveyed the perceptions of stakeholders on the participation of private service providers in agricultural extension provision with farmers, agro input dealers and agriculturist with the purpose of facilitating improvement in farming and agricultural development in the Hohoe District of Ghana. In all, 100 farmers, 20 agriculturist, 13 input dealers and 3 others were respondents in the research.

Findings from the study revealed that fifteen private extension providers exist alongside that of the Ministry of Food and Agriculture (MOFA) in the district. The study also showed that farmers, to some extent, are willing to make some payments for agricultural extension services which are relevant to their farming needs.

The study recommends among others that; (1) extension services need to shift from the existing supply-driven paradigm to one that is demand-driven; (2) there should be a gradual shift from public funded agricultural extension services while private sector participation is nurtured; and (3) there should be the development of synergy between MOFA and the private agricultural extension providers.

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DEDICATION

Dedicated to the memory of Messrs Charles Kwesi Etse-Tsigbenku, (my late father) and Solomon Kofi Etse, (my late big brother).

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LIST OF ACRONYMS

AAGDS	Accelerated Agricultural Growth and Development Strategy
ADAS	Agricultural Development Advisory Service
AEA	Agricultural Extension Agent
AfDB	Africa Development Bank
AgSSIP	Agricultural Services Sub-sector Investment Programme
CAS	Country Assistance Strategy
CEVs	Community Extension Volunteers
DANIDA	Danish Development Agency
DAES	Directorate of Agriculture Extension Services of MOFA
DLV	The Netherlands Extension Service
DSC	District Steering Committees
EDF	Extension Development Fund
ERP	Economic Recovery Programme
FBO	Farmer Based Organization
FBODF	Farmer-Based Organizations Development Fund
FAO	Food and Agricultural Organization of the United Nations
FASDEP	Food and Agricultural Sector Development Policy
FFS	Farmer Field School
GDP	Gross Domestic Product
GO	Governmental Organisation
GPRS	Ghana Poverty Reduction Strategy
GIS	Geographic Information System

GSS	Ghana Statistical Service
ICT	Information and Communication Technologies
IPM	Integrated Pest Management
MDG	Millennium Development Goals
MOFA	Ministry of Food and Agriculture
MTADP	Medium Term Agriculture Development Programme
NAADS	National Agricultural Advisory Services
NGOs	Non-Governmental Organizations
PSIA	Poverty and Social Impact Analysis
SAFE	Sasakawa Africa Fund for Extension Education
SLA	Sustainable Livelihoods Approach
SP	Service Provider
TOT	Transfer of Technology
T&V	Training and Visit System of Agriculture
UN	United Nations
UNDP	United Nations Development Programme
USDA	United States Department of Agriculture
VORADEP	Volta Regional Agricultural Development Project

CHAPTER ONE

INTRODUCTION

Background to the Study

This chapter gives an overview of the study. It defines the research problem and sets out the main research questions. Next, it provides justification for the study and outlines its relevance to the development of privatised extension services in Ghana. Finally, it discusses the scope and limitations of the study.

In Ghana, agriculture continues to account for 35% of the country's GDP. It contributes 44 percent to total export earnings in terms of cocoa, timber, and non-traditional exports. It is also a principal source of livelihood for the majority (53%) of the population of who live in the rural areas (Ghana Statistical Service, 2002). The agricultural sector is also an important consumer of industrial goods such as farm implements, services such as transport, as well as consumer goods.

Recognising the importance of agriculture in Ghana's economic development, the government has, over the years, initiated policies and programmes to stimulate the growth and development of the sector and to reduce poverty. During the 1990s, the Medium Term Agricultural Development Programme (MTADP) provided the principal framework for government programmes in the sector.

In the year 2000, the Ministry of Food and Agriculture launched the Accelerated Agricultural Growth and Development Strategy (AAGDS), which was in keeping with the Ghana Vision 2020. The Ghana Poverty Reduction Strategy (GPRS), places emphasis on the transformation of agriculture from its subsistence orientation to a commercially attractive, viable and dynamic sector. The rural poor depend predominantly on agriculture; the stimulation of agricultural growth therefore, under-pins the achievement of the country's poverty and growth agenda.

In 2004, the Ministry of Food and Agriculture (MOFA) articulated its policy direction for non-cocoa agriculture in the Food and Agriculture Sector Development Policy (FASDEP). The tenets of the FASDEP are largely derived from the objectives of the GPRS. FASDEP also provides a framework for modernizing the agriculture sector and making it the catalyst for rural transformation. The Poverty and Social Impact Analysis (PSIA) on the Economic Transformation of the Agricultural Sector of the GPRS also proposes recommendations for agricultural policy re-design.

PSIA addresses the issue of the "Modernization of Agriculture" on production, growth, and poverty reduction in Ghana. It also makes efforts to assess the extent to which the modernization of agriculture will compound or mitigate the constraints facing smallholder subsistence farmers. In addition, the World Bank's Country Assistance Strategy (CAS) 2004 identified access to infrastructure, technology generation, international markets and quality control systems as critical to improve storage, enhance marketing and processing of

agricultural commodities, increase the volume of non-traditional exports, improve land use, and foster environmentally-friendly practices. Ghana is witnessing ever-increasing population growth rate of 2.5% (Ghana Statistical Service, 2002), with a corresponding increase in the requirement for food production. Agriculture in Ghana has reached the limits of land and water. The future productivity should emphasize technological intervention by competent and accountable agricultural extension personnel (UNDP, 2001).

A cardinal issue for this study is to establish who stakeholders are as far as privatization of agricultural extension services in Ghana is concerned. To achieve this, a stakeholder is defined. Every enterprise has people or groups of people who have an interest in what it does. These are called 'stakeholders'. It matters to them what happens with the enterprise and what it does. Stakeholders should not be confused with shareholders. A shareholder is a part owner of the enterprise, as he or she has bought a part of its value. Shareholders can have a say in what the enterprise does. They share in the risks as well as successes. Shareholders are also stakeholders, as they are in all enterprises. However, not all stakeholders are shareholders.

In another breath, Yarn (1999) defines a stakeholder as any person who will be directly affected by the outcome of a decision-making process. It is a term that is commonly used when talking about public policy decision-making or dispute resolution processes in which representation of all affected groups is desired. For example, the citizens of a neighborhood in which the construction of a factory is proposed all have an interest or "stake" in the outcome of the decision

on whether or not to build the factory. The citizens may perceive new job opportunities, or they may perceive impending degradation of their quiet neighborhood. No matter what their interests are or how they may actually be affected by the decision, they are all stakeholders. Collectively, they would form one or more stakeholder groups. One pro-factory group might be called Citizens for Jobs; while an anti-factory group might be Citizens for the Preservation of Hohoe.

Additionally, a very different meaning of the term has become widely used in management. A stakeholder is a person or organization that has legitimate interest in an enterprise or entity. The new use of the term arose together with and due to the spread of corporate social responsibility ideas, but there are also utilitarian and traditional business goals that are served by the new meaning of the term (Highsmith III, 2000).

A stakeholder is also anyone whose knowledge, views and actions affect the success of the enterprise. But different people have completely different reasons for having a stake in an enterprise. Managers are concerned with the business advantage, marketing are concerned with the cost and packaging, people who will use the product focus on usability, technicians think more about the technology, lawyers focus on the legal implications, customers focus on the price, the list is endless. Not surprisingly, every stakeholder sees his/her stakeholding from his/her own point of view and often does not appreciate what is important to other people. For example, the packaging that adds margin to a product's price in the shops is anathema to the local environmental group. The machine that

improves the tolerance on a key component, thus giving the customer a more reliable product also means retraining some workers and puts a key supplier's nose out of joint..To make it possible for stakeholders with differing interests to work together we need to have a way of making a sustainable bargain between the stakeholders. The holding of a stake should mean that the stakeholder has an agreed reason for being involved in the enterprise along with a commitment to contribute.

Although we live in the same world and receive similar impressions of it through our eyes and ears, and to a lesser extent through our senses of touch, taste and smell, we interpret our experiences differently. Perception is the process by which we receive information or stimuli from our environment and transform it into psychological awareness (Van den Ban & Hawkins, 1996). Extension agents cannot be expected to understand the complex psychology of human perception, but they should appreciate why people interpret their surroundings differently, and how these different perceptions influence their communication behaviour.

Van den Ban and Hawkins (1996) continue that our perceptions are relative rather than absolute. Although we may not be able to judge the exact weight or surface area of an object we may be able to tell whether it is heavier or lighter, or larger or smaller than another similar object. When we enter a darkened room during the screening of a film we will see only the image on the screen and the bright light from the projector. After a minute or so we will be able to see other people in the room. In other words, our initial perception of darkness in the room is relative to the amount of light outside. Hence, when

designing messages we should remember that a person's perception of any part of the message would depend on the segment immediately preceding it.

Van den Ban and Hawkins (1996) further state that our perceptions are very selective. At any moment our senses are receiving a veritable flood of stimuli from the environment around us. We see objects, hear noises, and smell odours and so on. Despite its capacity to process vast amounts of information, our nervous system cannot make sense of all the stimuli available. Hence an individual pays attention only to a selection of these stimuli. Several physical and psychological factors, including attitudes influence what he or she selects or pays attention to. Our perceptions are organised. We tend to structure our sensory experiences in ways that make sense to us. We try to convert the 'booming, buzzing confusion' into some meaningful order.

Farmers operating under conditions of limited and irregular access to the resources needed for production are likely to hold varied attitudes toward farming. The intensities of these attitudes would vary depending on their personal circumstances, access to and control over circumstances in their operating environment.

Alternatively, Perception is the process by which organisms interpret and organize sensation to produce a meaningful experience of the world. Sensation usually refers to the immediate, relatively unprocessed result of stimulation of sensory receptors in the eyes, ears, nose, tongue, or skin. Perception, on the other hand, better describes one's ultimate experience of the world and typically involves further processing of sensory input. In practice, sensation and perception

are virtually impossible to separate, because they are part of one continuous process (Lindsay et al, 1977).

Thus, perception in humans describes the process whereby sensory stimulation is translated into organized experience. That experience, or percept, is the joint product of the stimulation and of the process itself. Relations found between various types of stimulation (e.g., light waves and sound waves) and their associated percepts suggest inferences that can be made about the properties of the perceptual process; theories of perceiving then can be developed on the basis of these inferences. Because the perceptual process is not itself public or directly observable (except to the perceiver himself, whose percepts are given directly in experience), the validity of perceptual theories can be checked only indirectly.

Just as one object can give rise to multiple percepts, so an object may fail to give rise to any percept at all: if the percept has no grounding in a person's experience, the person may literally not perceive it. The processes of perception routinely alter what humans see. When people view something with a preconceived idea about it, they tend to take those preconceived ideas and see them whether or not they are there. This problem stems from the fact that humans are unable to understand new information, without the inherent bias of their previous knowledge. The extent of a person's knowledge creates their reality as much as the truth, because the human mind can only contemplate that which it has been exposed to. When objects are viewed without understanding, the mind will try to reach for something that it already recognizes, in order to process what it is

viewing. That which most closely relates to the unfamiliar from our past experiences, makes up what we see when we look at things. According to Lindsay et al, 1977, the brain, with which you perceive the world, is made up of neurons "buzzing" at 50 cycles a second, while the world as it exists in reality, is made up of electro-magnetic radiation oscillating at 500 trillion cycles a second. This means that the human brain cannot nearly keep up with the 'realness of reality.'

To compensate, the brain takes a preconceived idea about the object, then uses those preconceived ideas to see whether or not they are there. The problem with attaining an accurate perception of reality stems from the fact that humans are unable to understand new information, without the inherent bias of their previous knowledge. The extent of a person's knowledge creates their reality as much as the truth, because the human mind can only contemplate that which it has been exposed to. When objects are viewed without understanding, the mind will try to reach for something that it already recognizes, in order to process what it is viewing. That which most closely relates to the unfamiliar from our past experiences, makes up what we see when we look at things that we don't comprehend.

There is the need to explore what privatization is. What exactly is meant by private extension? Is it a single entity or a broad set of principles? Privatization is a term broadly conceived to include efforts by countries, to decentralize and/or fiscally redesign their extension systems (Shekara, 2001). The term usually means a full transfer of ownership, usually by way of sale, from

government to private entity. Increasing budgetary crisis and fiscal deficits have forced not only the developed countries but also developing countries like Ghana to look into alternative ways to seek assistance from private agencies for taking up the task of agricultural extension service.

The concept of extension has a wide variety of meanings. Maunder (1973) described the concept as a service which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income and bettering their levels of living.

Extension was also defined by Adams (1982) as an assistance to farmers to help them to identify and analyse their production problems and to become aware of the opportunities for improvement. In contrast, Röling (1988) defined extension as a professional communication intervention deployed by an institution to induce change in voluntary behaviours with a presumed public or collective utility. Röling (1988), also construes the concept to mean a specialist management institution that uses communication as its instrument to induce learning and change in the behaviour of farmers

The term extension has also been interpreted to mean: the transfer of technical information to farmers; the provision of market information; management and consultancy service; and collection of information on producers' needs and concerns (Scrimgeour et al., 1991). A frequently cited definition of extension is that of van den Ban and Hawkins (1996) which refers to extension as 'the conscious use of communication of information to help people form sound opinions and make good decisions'. The conceptualisation of extension as is

highlighted above, has been somewhat paternalistic in nature; that is, where the relationship between an extension agent and his/her client was essentially viewed as being similar to a teacher/student or parent/child relationship (Leeuwis & van den Ban, 2004).

However, there is growing realisation that successful extension requires input from farmers, extension experts and scientists (Leeuwis & van den Ban, 2004). In more recent times, extension has become partially or fully privatised in a range of countries such as Costa Rica, Israel and England (Qamar, 2002), and as such, the term can no longer be viewed entirely from a paternalistic perspective, because as privatized institutions, their services are demanded by farmers themselves. Even in less developed countries where persuasive extension is pervasive, past experience has shown that the notion of transfer (teacher to student) of technologies has often not worked - rather, technologies have been imposed on clients (Leeuwis & van den Ban, 2004). Thus, the term extension as used in the extension literature is ambiguous and falls short of the present reality.

The most elaborate and recent definition which is more relevant to this research is that of Leeuwis and van den Ban (2004). They defined extension as: a series of professional communication interventions amid related interactions that is meant, among others, to develop and/or induce novel patterns of co-ordination and adjustment between people, technical service and natural phenomena, in a direction that supposedly helps to resolve problematic situations, which may be defined by different actors involved'. In this definition, extension is seen as a professional activity and an intervention which draws on communication between

extension agents and the stakeholders/actors (farmers, researchers and organisations) for whom they work for mutual benefits.

Statement of the Problem

While "modern" extension has existed since the nineteenth century, agricultural extension is quite young worldwide as a formal institution, with the majority of countries initiating such services since the 1950s and 1960s. Even in high-income countries where extension began at earlier dates, fiscal commitment took significant upswings following World War II when a backlog of science and technology had accumulated. In an FAO survey of 207 agricultural extension organizations in 115 countries (Swanson, Farner, & Bahal, 1990), 50 percent of these organizations had been established or were reorganized in the previous two decades.

Extension service has been traditionally organized and delivered by the public sector all over the world, which led to a situation wherein, whenever one refers to extension, it denoted public extension service. Similarly, whenever private sector is referred to, there is a tendency to consider only the corporate sector in the category. However, private extension has a broader canvas including all relevant private groups than the narrow canvas of corporate sector. Privatization of extension services does not therefore aim at substituting private sector for public extension service, but rather adopting a variety of forms involving different stakeholders.

Agricultural extension over the years has been used as a tool for facilitating agricultural and rural development (Chambers, 1997; Alex & Byerlee,

2002). Extension organisations therefore, play an important role in rural development in developing countries (Shackleton et al., 2000; Mwabu & Thorbecke, 2001). However, in the past two decades, agricultural extension services in developing countries have been under increasing pressure from globalisation, liberalisation of agricultural markets, environmental changes, HIV/AIDS and food insecurity, to reform and respond to the needs of their clients (World Bank, 2000a; Richardson, 2003). In response to these changes, extension organisations are shifting their principal focus from agricultural productivity towards sustainable development, where participatory processes, action learning - that is, the human dimension of agricultural and natural resource management - are given importance (Röling, 1994; Scoones & Thompson 1994; van Crowder 1996). Moreover, this shift in focus has created a more diverse and complex context in which extension organisations operate to assist farmers to meet their needs (Röling, 1992; Scoones & Thompson, 1994; van Crowder, 1996).

In responding to the current complex extension context, governments including that of Ghana have found that they are less able to continue to provide all the services previously provided in an effective and efficient manner. With costs rising, limited resources available, and changes in the prevailing philosophy of the appropriate extent of government intervention, governments have been slow to increase appropriations for many publicly funded activities. Furthermore, some functions of government have been curtailed, and others have been privatized.

In Ghana, the Directorate of Agricultural Extension Services (DAES) of the Ministry of Food and Agriculture (MOFA), a public sector institution carries out all the public good extension service delivery to farmers (Donkor, 1989). A number of different approaches have been used to organize and deliver extension programmes in Ghana. These were the Export-Commodity development approach, Ministry-based general extension approach and the Unified Extension System based on the Training and Visit approach. In response to the changing extension landscape, Ghana is making effort to introduce privatization into extension delivery. For example, veterinary services, training of farmer groups, provision of credit are carried out by NGOs. However, the debate on the privatization process has remained principally within the MOFA and policy makers.

It is logical that any approach selected by a national extension organization should reflect its prescribed mission as articulated by policy makers. But it is important that such an approach is influenced by other key stakeholders including donor agencies, private extension providers and clientele in the extension system. This is because the type of approach followed will directly affect how programmes are delivered at the field level and the cooperation it receives from all stakeholders. So, privatization represents one position in the debate over how extension should be organized in Ghana. But, to proceed more effectively with the approach will require an understanding of the existing interests, the ideology, and the perceived needs of the stakeholders.

Objectives of the Study

The main objective of the study is to examine stakeholders' perception of private sector participation in agricultural extension delivery process in the Hohoe District of Ghana.

The specific objectives are tol:

1. Identify private sector institutions involved in the provision of agricultural extension services in the Hohoe District.
2. Determine the nature and scope of private participation in agricultural extension.
3. Examine the perception of the stakeholders (farmers, Extension officers and private participants) towards private sector participation and eventual privatization of agricultural extension especially, on willingness of farmers to pay for extension services.
4. Discuss the factors that impede or promote private sector involvement in agricultural extension in Ghana based on lessons learnt from the Pilot EDF project.
5. Develop a model for collaboration between public sector and private sector agricultural extension in Ghana.
6. Provide recommendations for establishing and improving privatized extension system in Ghana.

Research Questions

1. Which private sector institutions are involved in the provision of agricultural extension service in the Hohoe District?
2. What is the nature and scope of private participation in Agricultural extension?
3. What are the perceptions of stakeholders towards private participation and eventual privatization of agricultural extension especially, on willingness to pay for extension services?
4. What are the factors that impede or promote private sector involvement in agricultural extension in Ghana based on lessons learnt from the Pilot EDF Project?
5. What model of public-private agricultural extension collaboration could be useful and sustainable to the development of agriculture in Ghana?

Significance of the Study

If privatization of agricultural extension service would occur in Ghana, there arises a need to find out the issues and options opened to the country. First, the results from the study will help agricultural extension programmers and planners in Ghana to take an appropriate approach towards agricultural extension services to achieve the twin global goals of food security and sustainable food production for the country. Second, the study intends to propose a model for Private Sector Participation in agricultural extension in Ghana. Third, findings

from the study will contribute to the on-going debate on envisaged privatization of agricultural extension services in Ghana in particular and worldwide in general.

Organisation of the Study

There are five chapters in this thesis. Chapter One gives an overview of the study. In Chapter Two, a review of the current debates and theories focusing on the future development of agricultural extension to meet its mandate is discussed. It also discusses the conceptual framework for the study. The third chapter looks at the study area, Hohoe District and situates it for the study. It also describes the methodology used in the study. It provides a justification for the choice of methodology used and considers some ethical issues in conducting research. In Chapter Four, the results and discussion of the study are presented. It also summaries the key issues which emerged from the analysis of the pilot EDF project report. The chapter also suggests a working model on the privatization of agricultural extension services. In Chapter Five, the summary, conclusions and recommendations of the study are presented as well as implications for further research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter reviews current debates and theories focusing on the future development of agricultural extension to meet its mandate. The review highlights the global changes that have resulted in calls for the reformation of agricultural extension to make it both sustainable and effective. The review further examines the issue of privatisation and its function in the extension–food security conundrum moving from studies on global experiences with extension privatisation to the African and Ghanaian contexts. In both areas, critical attention is paid to the methodologies that have been employed in carrying out such studies. These concerns are intended to elicit the issues that will concretize the research questions of the study. It focused on the concepts that inform this research – stakeholders, perception, agricultural extension and privatization of agricultural extension services. These key concepts are reviewed in the following sections.

Stakeholders

A cardinal issue for this study is to establish who the stakeholders are as far as privatization of agricultural extension services in Ghana is concerned. It is

therefore important to understand the term as used in the literature. Yarn (1999) defines a stakeholder as any person who will be directly affected by the outcome of a decision-making process. It is a term that is commonly used when talking about public policy decision-making or dispute resolution processes in which representation of all affected groups is desired. Though the term "stakeholder" normally pertains to public policy issues within a community or even a nation, it can also be used to refer to people affected by the outcome of international agreements as well. For example, the outcome of a peace agreement ending a military conflict will certainly affect the citizens of the involved nations. Because any of these types of conflict involve hundreds, thousands, or even millions of people, all of the interested individuals cannot possibly participate in negotiating solutions to the problem at hand.

In complex disputes involving hundreds of stakeholders (or more), it is virtually impossible to create a seat at the negotiating table for everyone. Some attention must be given to the size and manageability of the group at the table. Administratively, it is often impossible to have every stakeholder participating. Hence, issues of representation must be considered (Gray, 1989).

- A different meaning of the term has become widely used in management. A "stakeholder" is a person or organization that has a legitimate interest in a project or entity. The new use of the term arose together with, and due to the spread of corporate social responsibility ideas. There are also utilitarian and traditional enterprise goals that are served by the new meaning of the term (Highsmith III, 2000). From a more embracing view

point, DeMarco (1987) categorized stakeholders to include: People who are (or might be) affected by any action taken by an organization or group. Examples are parents, children, customers, owners, employees, associates, partners, contractors, and suppliers, people that are related or located nearby. Any group or individual who can affect or who is affected by achievement of a group's objectives.

- An individual or group with an interest in a group's or an organization's success in delivering intended results and in maintaining the viability of the group or the organization's product and/or service. Stakeholders influence programmes, products, and services.
- Any organization, governmental entity, or individual that has a stake in or may be impacted by a given approach to environmental regulation, pollution prevention, energy conservation, etc.
- A participant in a community mobilization effort, representing a particular segment of society. School board members, environmental organizations, elected officials, chamber of commerce representatives, neighborhood advisory council members, and religious leaders are all examples of local stakeholders.

From the review, a stakeholder is anyone or organization whose knowledge, views and actions affect the success of a project. They can affect the outcome/success of the projects and/or is affected by its outcome/success. But different people or groups may have completely different reasons or interest for having a stake in a project (DeMarco, 1987).

As such, to make it possible for stakeholders with differing interests to work together we need to have a way of making a sustainable bargain between the stakeholders. The holding of a stake should mean that the stakeholder has an agreed reason for being involved in the project along with a commitment to contribute. We need to consider how to find a balance between the need of a project to align stakeholders with the aims of the project, and the legitimate defense of a stakeholder's perceptions (position or interest) when these are threatened.

Perception

Although we live in the same world and receive similar impressions of it through our eyes and ears, and to a lesser extent through our senses of touch, taste and smell, we interpret our experiences differently. Perception is the process by which we receive information or stimuli from our environment and transform it into psychological awareness (Van den Ban & Hawkins, 1996). Extension agents cannot be expected to understand the complex psychology of human perception, but they should appreciate why people interpret their surroundings differently, and how these different perceptions influence their communication behaviour.

Van den Ban and Hawkins (1996) continue that our perceptions are relative rather than absolute. Although we may not be able to judge the exact weight or surface area of an object we may be able to tell whether it is heavier or lighter, or larger or smaller than another similar object. When we enter a darkened room during the screening of a film, we will see only the image on the screen and the bright light from the projector. After a minute or so we will be

able to see other people in the room. In other words, our initial perception of darkness in the room is relative to the amount of light outside. Hence, when designing messages we should remember that a person's perception of any part of the message would depend on the segment immediately preceding it. Van den Ban and Hawkins (1996) further state that our perceptions are very selective.

At any moment our senses are receiving a veritable flood of stimuli from the environment around us. We see objects, hear noises, and smell odours and so on. Despite its capacity to process vast amounts of information, our nervous system cannot make sense of all the stimuli available. Hence an individual pays attention only to a selection of these stimuli. Several physical and psychological factors, including attitudes influence what he or she selects or pays attention to. Our perceptions are organised. We tend to structure our sensory experiences in ways that make sense to us. We try to convert the 'booming, buzzing confusion' into some meaningful order.

Farmers operating under conditions of limited and irregular access to the resources needed for production are likely to hold varied attitudes toward farming. The intensities of these attitudes would vary depending on their personal circumstances, access to and control over circumstances in their operating environment.

Alternatively, perception is the process by which organisms interpret and organize sensation to produce a meaningful experience of the world (Lindsay et al., 1977). Sensation usually refers to the immediate, relatively unprocessed result of stimulation of sensory receptors in the eyes, ears, nose, tongue, or skin.

Perception, on the other hand, better describes one's ultimate experience of the world and typically involves further processing of sensory input. In practice, sensation and perception are virtually impossible to separate, because they are part of one continuous process (Lindsay et al., 1977).

Thus, perception in humans describes the process whereby sensory stimulation is translated into organized experience. That experience, or percept, is the joint product of the stimulation and of the process itself. Relations found between various types of stimulation (e.g., light and sound waves) and their associated percepts suggest inferences that can be made about the properties of the perceptual process; theories of perceiving then can be developed on the basis of these inferences. Because the perceptual process is not itself public or directly observable (except to the perceiver himself, whose percepts are given directly in experience), the validity of perceptual theories can be checked only indirectly.

Historically, systematic thought about perceiving was the province of philosophy. Philosophical interest in perception stems largely from questions about the sources and validity of what is called human knowledge (epistemology). Epistemologists ask whether a real, physical world exists independently of human experience and, if so, how its properties can be learned and how the truth or accuracy of that experience can be determined. They also ask whether there are innate ideas or whether all experience originates through contact with the physical world, mediated by the sense organs.

As a scientific enterprise, however, the investigation of perception has developed as part of the larger discipline of psychology. For the most part,

psychology bypasses the questions about perceiving raised by philosophy in favour of problems that can be handled by its special methods. The remnants of such philosophical questions, however, do remain; researchers are still concerned, for example, with the relative contributions of innate and learned factors to the perceptual process.

Such fundamental philosophical assertions as the existence of a physical world, however, are taken for granted among most scientific students of perceiving. Typically, researchers in perception simply accept the apparent physical world particularly as it is described in those branches of physics concerned with electromagnetic energy, optics, and mechanics. The problems they consider relate to the process whereby percepts are formed from the interaction of physical energy (for example, light) with the perceiving organism. Of further interest is the degree of correspondence between percepts and the physical objects to which they ordinarily relate. How accurately, for example, does the visually perceived size of an object match its physical size as measured (e.g., with a yardstick)?

In the case of visual perception, some people can actually see the percept shift in their mind's eye. Others, who are not picture thinkers, may not necessarily perceive the 'shape-shifting' as their world changes. The 'esemplastic' nature has been shown by experiment: an ambiguous image has multiple interpretations on the perceptual level. The question, "Is the glass half empty or half full?" serves to demonstrate the way an object can be perceived in different ways.

Just as one object can give rise to multiple percepts, so an object may fail to give rise to any percept at all: if the percept has no grounding in a person's experience, the person may literally not perceive it. The processes of perception routinely alter what humans see. When people view something with a preconceived idea about it, they tend to take those preconceived ideas and see them whether or not they are there. This problem stems from the fact that humans are unable to understand new information, without the inherent bias of their previous knowledge. The extent of a person's knowledge creates their reality as much as the truth, because the human mind can only contemplate that which it has been exposed to. When objects are viewed without understanding, the mind will try to reach for something that it already recognizes, in order to process what it is viewing. That which most closely relates to the unfamiliar from our past experiences, makes up what we see when we look at things that we don't comprehend.

This confusing ambiguity of perception is exploited in human technologies such as camouflage, and also in biological mimicry, for example by Peacock butterflies, whose wings bear eye markings that birds respond to as though they were the eyes of a dangerous predator. Perceptual ambiguity is not restricted to vision. For example, touch perception research Robles-De-La-Torre and Hayward (2001) found that kinesthesia based haptic perception strongly relies on the forces experienced during touch.

The brain, with which you perceive the world, is made up of neurons "buzzing" at 50 cycles a second, while the world as it exists in reality, is made up

of electro-magnetic radiation oscillating at 500 trillion cycles a second. This means that the human brain cannot nearly keep up with the 'realness of reality.' To compensate, the brain takes a preconceived idea about the object, then uses those preconceived ideas to see whether or not they are there.

A view known as social constructionism regards the continual adjustment of percept and action to the external input as precisely what constitutes the 'entity', which is therefore far from being 'invariant'. In human communication, according to the theory, a running hypothesis that there is an 'invariant', a target to be homed in upon, is a pragmatic necessity to allow an initial measure of understanding to be established prior to the updating a statement aims to achieve, but it does not and need not represent an actuality. It is added that, after all, it is extremely unlikely that what is desired or feared by an organism will never suffer change -- indeed, radical change -- as time goes on; the social constructionist theory thus allows for the needful evolutionary adjustment.

The Concept of Agricultural Extension

Diverse definitions for agricultural extension exist in the agricultural development literature and these definitions continue to evolve to date even as practitioners attempt at getting an eclectic meaning. Leeuwis and van den Ban (2004) submit that extension is a series of professional communication interventions amid related interactions that is meant, among others, to develop and/or induce novel patterns of co-ordination and adjustment between people, technical service and natural phenomena, in a direction that supposedly helps to resolve problematic situations, which may be defined by different actors involved.

In their definition, extension is seen as both a professional activity and an intervention which draws on communication between extension agents and the stakeholders/actors (farmers, researchers and organisations) for whom they work for mutual benefits.

On the other hand, Röling (1988) defined extension as a professional communication intervention deployed by an institution to induce change in voluntary behaviours with a presumed public or collective utility. The concept of extension referred to a specialist management institution that uses communication as its instrument to induce learning and change in the behaviour of farmers. Whilst Maunder (1973), described the concept as a service which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income and bettering their levels of living.

Adams (1982) however, saw agricultural extension as an assistance to farmers to help them to identify and analyse their production problems and to become aware of the opportunities for improvement. Röling (1988) further argued that an agricultural extension intervention could take four different approaches: Persuasive extension, where an organisation uses extension as a policy instrument to achieve societal (or government) objectives;. Human resource extension, where emphasis is placed on the development of extension clients to enhance their capabilities to learn and fend for themselves; Emancipator extension, where extension is used as an instrument for emancipation of the poor and Informative extension, where the emphasis of the institution is to provide

information to their clients to help them make good decisions to achieve their goals.

Scrimgeour et al. (1991), argue that extension can be interpreted to mean the transfer of technical information to farmers, the provision of market information, management and consultancy services, and collection of information on producers' needs and concerns. Van den Ban and Hawkins (1996) go further to define extension as *the conscious use of communication of information to help people form sound opinions and make good decisions.*

Some authors find this simplistic conceptualisation of extension as highlighted above, to be somewhat paternalistic in nature, with the relationship between an extension agent and his/her client essentially being viewed akin to a teacher/student or parent/child relationship. What is clear from the above-stated definitions is that agricultural extension involves specific information generation which is passed on to a target client (farmer) to help ultimately to improve his/her wellbeing. In the following sections, an overview of the approaches of extension since the 1960s is provided.

The Sustainable Livelihoods Approach (SLA)

Agricultural extension over the years has been used as a tool for facilitating agricultural and rural development (Chambers, 1997; Alex & Byerlee, 2002). Extension organisations therefore, play an important role in rural development in developing countries (Shackleton et al., 2000; Mwabu & Thorbecke, 2001). However, in the past two decades, agricultural extension services in developing countries have been under increasing pressure from

globalisation, liberalisation of agricultural markets, environmental changes, HIV/AIDS and food insecurity, to reform and respond to the needs of their clients (World Bank, 2000a; Richardson, 2003). In response to these changes, extension organisations are shifting their principal focus from agricultural productivity towards sustainable development, where participatory processes, action learning - that is, the human dimension of agricultural and natural resource management - are given importance (Röling, 1994; Scoones & Thompson 1994; van Crowder 1996b). Moreover, this shift in focus has created a more diverse and complex context in which extension organisations operate to assist farmers to meet their needs (Röling, 1992; Scoones & Thompson 1994; van Crowder, 1996b).

The SLA has been the subject of scrutiny by some authors. Carney (1999) questions the poverty reduction strategy, particularly for low-income countries, regarding lack of managerial/administrative capacity and tools for assessing the impact of the strategy on beneficiaries (G-24 Secretariat, 2003). The SLA has been described as over ambitious and as offering insufficient practical guidance for rural development (Carney, 1999; Toner, 2003). Toner believed that the principles and assumptions underlining the approach are simplistic vis-à-vis the complexity of rural development issues it is meant to address. It is believed that capacity building of staff in extension, especially in government organisations for poverty reduction will require considerable time and money (GTZ, 2004). Furthermore, the scope and complexity of the SLA make it difficult to accurately implement it from analysis of needs to action, and to measure its contribution to rural household livelihood security (Carney, 1999; GTZ, 2004). Carney (1999)

was concerned about the practicality of involving other sectors in extension provision, given that countries and donor organisations are still organised along sector lines. Finally, the approach presents a practical challenge of targeting the poor and still meeting the needs of the rich in ensuring sustainable rural development.

Adult Learning extension approach

In the 1990s, the focus on farmer participation started to take on a new dimension when it became apparent that farmers made their own decisions about their farming ventures based on their experiences of what worked and what did not (Röling & Pretty, 1997). Fisher (1993) argued that farmers are innovators who are able to learn and improve their own situations and that they should be given the opportunity to do so. Similarly, Coldevin (2001) argued that even in participatory approaches, the people who are involved in the process require a level of knowledge and skills to participate effectively. Long (2001) described participants in any participatory process as social actors. These social actors (individual persons, informal groups or interpersonal networks, organisations, collective groupings) should possess the knowledge and capability to assess problematic situations and organise appropriate responses. The ideas outlined above contributed to a shift in emphasis from simply 'involving people' in extension programmes, to the use of adult learning principles in extension in facilitating rural development in the 1990s.

The use of the adult learning model in agricultural extension was based on the theories of Knowles (1984), Mezirow (1981) and Kolb (1984) of adults as

active learners (Röling & Pretty, 1997). These theories assume adults to be in a continuous process of learning to improve their conditions and practices (Mezirow, 1981; Knowles, 1984). Adults are responsible for their own learning and decision making (Röling & Pretty, 1997). This understanding is consistent with Kolb's (1984) experiential adult learning style who argued that adults cannot be 'forced' to learn; they need to be given the opportunity to reflect upon their experiences and test new situations and ideas to solve their own problems. As such, Ramirez and Stuart (1999) made the point that 'farmers are the ones who must control the learning process and be able to access information according to their specific needs, times and means'. Similarly, Röling and Pretty (1997, p. 183) maintained that it is important to recognize that local people are always involved in active learning, in (re)inventing technologies, in adapting their farming systems and livelihood strategies.

The adult learning model in extension was considered relevant and important in facilitating more sustainable rural development (Ramirez & Stuart, 1994; Coutts et al., 1995; Pretty, 1997; Coldevin, 2001). In this approach, rural development was viewed as an adult educational process where the extension specialist's roles were those of a facilitator and partner in a learning process with farmers (Coutts et al., 1995; Coldevin, 2001). This adult learning notion was the main driver behind the Farmer Field School (FFS) concept in the 1990s (Pontius et al., 2002). A FFS is a form of nonformal training where extension agents, as facilitators, meet periodically with groups of farmers during a crop or animal production cycle to build their expertise through experiential learning (Pontius et

al., 2002). In this kind of collaborative learning, extension organisations provide farmers with nonformal education with the assumption that it will assist them to understand their situation and make better choices that can improve it (van Beek & Coutts, 1992).

According to Knowles (1984), adults must be motivated to feel the need to acquire information, new knowledge and new techniques in response to particular problems that they want to solve. As such, in agricultural extension, it had been argued that the role of extension organisation staff should be more as facilitators of adult learning rather than as 'conduits' for the transfer of technology from 'experts' to farmers (Röling & Pretty, 1997). Servaes and Arnst (1992) argued that it was wrong to believe that 'experts' had more knowledge than local people unless the 'experts', through cooperation and learning with local people, can apply their knowledge in the local context to the benefit of the people.

The adult learning approach has its drawbacks. Questions with regard to the commitment of participants to go through a designed programme of training have been raised by Prain (2001). The adult learning approach to extension requires a high degree of dedication from participants because it requires time and commitment to learn (Prain, 2001). But, according to Prain it is difficult to get this kind of dedication and commitment from the poor. A similar point was made by Chambers (1995, 1997), when he stated that it is difficult to involve the poor in rural development programmes because they are most often dispersed, anxious and have limited time to spend out of their work. Not surprisingly, in the mid-1990s, he advocated the need for a poverty reduction and livelihood security

focus to extension in his book *Whose Reality Counts*? He argued that the poor must be placed at the centre of rural development, and that sustainable poverty reduction must be an objective in rural development interventions. The literature suggests that this objective should be one that promotes a broad base opportunity for income earning, access to education, healthcare, and other social services for rural people, especially, the poor (Scoones & Thompson, 1994; Chambers, 1995; Chambers, 1997; Sutherland et al., 1999). These latter views contributed to a shift in the focus of extension personnel from the earlier approaches to a pro-poor sustainable livelihood approach, also in the 1990s.

Transfer of Technology (TOT) Approach

The transfer of technology (TOT) extension model was used as an approach to rural development during the 1960s and 1970s (Borlaug, 1995; Pretty, 1995; Chambers, 1997). The TOT model was used as a communication process involving senders (sources of information) and receivers of ideas, where information and materials move from senders to receivers in a one-way fashion (Katz & Levin, 1963). Under this model, technical knowledge is perceived to be generated by research organisations only, transferred by extension organisations and utilised by farmers. The assumption underlying this model was derived from Rogers (1962) 'diffusion of innovation theory'.

According to Rogers (1982), innovations originate from scientists; extension agents transfer innovations; and farmers apply the innovations they receive from extension agents (Russell et al., 1989). As such, extension under this model was viewed as a linear 'topdown' approach. The TOT approach

therefore, was therefore driven by the philosophy of 'positivism' paradigm of research (Pretty, 1995) in which researchers identify the problems of farmers (with or without the farmers' consent) and design technologies for farmers to adopt to solve the identified problems. The assumption behind this approach was that once the information is transferred by the extension organisation, it will begin to spread (diffuse) among farmers as they interact among themselves. In situations where farmers modified or rejected a technology promoted by an extension organisation, they were viewed as 'conservative', 'backward' or laggards who lacked the right attitude to change (Rogers, 1962; Hyden, 1986).

In practice, the TOT approach gave mixed outcomes, especially during the 'Green Revolution', when agricultural technologies from the developed countries were promoted in developing countries to increase their production capacity notably by some advocates (Borlaug, 1995; Busch, 1996; Evenson & Gollin, 2003). But whereas it was successful in increasing agricultural yields during the Green Revolution in Latin America and some parts of Asia, it was a total failure in India and many other developing countries (Borlaug, 1995; Busch, 1996; Evenson & Gollin, 2003). Busch (1996) reports, for instance, that the success of the Green Revolution in Latin America and some parts of Asia was possible because the farmers involved in the process were resource-rich and farmed irrigated fields similar to those found on research stations where the technologies were developed.

In Sub-Sahara Africa including Ghana, the TOT was applied through a training-and-visit (T&V) extension strategy, where extension agents were

provided with regular fortnightly in-service training by subject-matter specialists to develop the technical skills that they would transfer to farmers (Benor et al., 1984). However, the TOT approach was not successful in Sub-Sahara Africa because the farming systems were quite different (i.e. complex, mainly rain-fed, resource poor small-scale farmers, and risk-prone) from those under which the technologies (e.g. crop varieties) were developed and therefore the majority of farmers could not practice the more expensive and 'foreign' technology packages (Carr, 1989; Marfo et al., 1994; Borlaug, 1995; Frempong-Asante, 1995).

The TOT approach was useful in situations where farmers lacked technologies to solve specific problems (e.g. disease outbreak) and also improved practices (technological innovations) that must come from outside the farmers' domain. This is more important, especially, when the initiative comes from farmers, who both realise and indicate that they need specific technologies to improve their situation – a shift from 'supply-driven' technology transfer to demand-driven technology transfer (Alex et al., 2002; Ingram et al., 2002; Molua, 2005).

The experiences gained from the TOT approach during the Green Revolution showed that agricultural technologies developed by scientists alone were not suitable and therefore were not adopted by farmers. Farmers, especially small-scale farmers, modified or adapted their production practices to conform to the changing times, their particular environments and their needs (Horton, 1991; Röling, 1991; Chambers, 1997). Several authors argued that scientists or extension agents may not know the exact needs and problems of farmers,

especially at times when situations and agroecological contexts are changing at a fast rate. Therefore, to gain more accurate and up-to-date knowledge about the needs and problems of farmers, the process would have to be ongoing and involve farmers and other stakeholders, including scientists (Horton, 1991; Röling, 1991; Chambers, 1997). There is now a growing realisation that successful extension requires input from farmers, extension experts and scientists (Leeuwis & van den Ban, 2004).

Participatory Extension Approaches

The reported failures of the transfer of technology model in the 1980s brought about a change in the worldview of those involved in research and rural development. Key among the problems of the TOT approach was the fact that scientists and extension agents developed the technologies and extension programmes in isolation from farmers - often resulting in a mismatch (Chambers, 1989; Pretty & Chambers, 1993; Fisher, 1993; Scoones & Thompson, 1994).

In the early 1990s, a strong case was made in the literature (Horton, 1991; Russell & Ison, 1991; van Beek & Coutts, 1992; Pretty, 1995) for the need to explore other extension approaches. For instance, Pretty (1995) argued that one cannot separate technology from the culture and traditions of the people who are to adopt it. That is, agricultural technologies cannot be developed independently of farmers whose practices are the target for improvement. Thus, the aim was to involve farmers in the identification of constraints to their existing production systems and the development of new or improved technology packages that suited their farming systems (Okali & Sumberg, 1988). The new slogan was farmer

empowerment, bottom-up development, and the integration of farmers' indigenous knowledge assumed importance, evolving into what became the 'farmer first' idea in the extension literature towards the end of the 1980s and early 1990s (Chambers et al., 1989; Horton, 1991; Russell & Ison, 1991; van Beek & Coutts, 1992). These ideas precipitated in the concept of community participatory approaches in extension and rural development.

This led to participatory approaches where farmers were actively involved in technology and extension programme planning processes (Pretty & Chambers, 1993; Scoones & Thompson, 1994), with the assumption being that if farmers are involved in the process, they are more likely to adopt the extension messages. Thus, the focus of extension was shifted to put the farmer 'first' (Chambers et al., 1989). The extension organisation was therefore expected to promote community participation so that farmers could share their knowledge among themselves and with the extension organisation to shape extension programmes (van Beek & Coutts, 1992).

The aim of the community participation process was to shift the power balance from working for farmers to working with farmers for them to solve their own problems (van Beek & Coutts, 1992; Chambers, 1997). During the 1980s and 1990s, a range of community participatory models emerged in response to the reported limitations of the TOT approach (Black, 2000).

Typical among such models are: Farming Systems Research and Extension (Shaner et al., 1982); Agroecosystems Analysis (Conway, 1985); Agricultural Knowledge and Information System (Röling, 1986); Rapid Rural

Appraisal (Chambers, 1987; Beebe, 1995); Farmerfirst and beyond farmer-first (Chambers, 1987; Scoones & Thompson, 1994; Chambers, 1997); Farmer Participatory Research (Bunch, 1989); Participatory Rural Appraisal (Chambers, 1994a, 1994b); and Participatory Technology Development (Hagmann et al.,1998).

Discussion of each of these models is beyond the scope of this study. However, the general argument made by a range of authors about community participation models was that they had important advantages for rural development when compared with the TOT approach.

On the advantages of the participatory extension approach, it was argued by Cornwall et al. (1993) that participatory approaches make it possible to draw on local knowledge and experience from the community in identifying problems and developing appropriate solutions. This claim was supported by Carr (1997) who pointed out that participatory approaches acknowledge the value of farmers sharing ideas and information among themselves rather than relying simply on 'expert' advice.

The community participation approaches are believed to give participants a greater sense of ownership and commitment to their problems and solutions (Marsh & Pannell, 2000; Garforth, 2004). This approach is said also to enhance the development of local capabilities which are essential for ensuring sustainable development (Pretty & Chambers, 1993).

Finally, participatory approaches had been reported to have enhanced the sustainability of development programmes (Sara & Katz, 1997), improved the

implementation efficiency and effectiveness of community projects (Tang, 1992; Lam, 1998), and reduced the management costs of such projects (Adato et al., 1999).

Despite the reported advantages of community participation models, these approaches have been criticised. Critics maintain that there is a lack of substantive proof that participatory analyses and planning processes are cost-effective (Sustainable Livelihoods, 2004). Campbell (1997) believes that 'widespread use of participatory approaches, without a shared recognition of their limitations, can result in high levels of frustration'. Another criticism of some participatory approaches is the way in which communities are treated as homogenous entities (Black, 2000). According to Black (2002), most participatory approaches tend to ignore and underestimate the significance of differences (e.g. age, status, caste) that might exist between members in the participatory encounter. In real life situations, such differences divide communities (Chambers, 1997).

Frost and Metcalfe (1999) explain that consensus arrived at from participatory processes do not always mean that the needs of all participants have been taken into consideration. Participation often entails higher costs and time due to the need for frequent consultations and lengthy decision-making processes in reaching a consensus for action (DESA, 1999; Toner, 2003). It is reported that in certain instances, absolute participation may be difficult to achieve, especially when there are time and budget constraints or a lack of commitment from participants (DESA, 1999). Under these circumstances, participation may be

nominal and will not empower people. Moreover, Toner (2003) argued that all too often, extension personnel set unrealistic targets and underestimate the need for feedback and follow-up in participatory processes.

Why Extension Needs to Adapt to Global Changes

It has been well documented that globally, governments' funding for agricultural extension programmes has been dwindling. The growing call for cuts in public funding means public agricultural extension services around the world are being forced to adapt to new funding constraints and a changing agricultural sector. The global perspective on extension is no longer that of a unified public sector service which, has been the *modus operendi* of DAES of MOFA since the early 1990s, but of a multi-institutional network of knowledge and information support for rural people. From the policy standpoint, Rivera and Alex (2004) argue that governments need to act to redefine extension, and implement a coherent extension policy to advance a pluralistic system of extension providers if pervading poverty is to be curtailed. Towards this end, there should be a paradigm shift in the way extension services are funded and carried out. From the analysis of results, the following issues emerge which, need to be considered and discussed in detail in pursuit of a privatised extension system in Ghana.

Change in Paradigm of Agricultural Extension

Agricultural extension finds itself in the midst of significant changes and uncertainty. Processes of change have been underway for some time but in many developing countries such as Ghana, these have been accelerated by structural

adjustment reforms introduced in the middle eighties aimed at reducing public sector spending. An environment of declining government budgets combined with waning donor interest has led to significant cuts in public extension services globally (Farrington, 1994). Even, public extension activities that remain are under increasing pressure to provide an accountable and responsive service to citizens.

There is therefore a strong need for a significant shift in the attitudes of both extension practitioners and farmers in order to be able to effectively implement an extension system that is effective, beneficial and sustainable. Extension practitioners must cultivate the attitude of self- motivation with a hunger to achieve positive results with available resources and also plan and deliver programmes that are relevant to farmers. Farmers must also begin to approach their farming activities with a business mind and to be proactive in extension programming, delivery and evaluation. These issues are further expanded in the following sections.

Knowledge Management

The system of research–extension linkage is an important factor influencing the success of an extension organization, (Agbamu, 2000). In several government extension organizations there is a well established system of subject-matter specialists who keep field workers informed about relevant new developments in research and inform researchers about the problems and experiences of farmers. It can be difficult to organise this linkage in a privatized extension setting. There are many small consulting firms and researchers who do

not have the time to interact with extension officers as well as farmers. Competition may make it difficult to bring consultants from different firms together in a training course. The advisers in the consulting firm are under pressure to work as many declarable hours as possible (Duijsings, 1998), making it difficult for them to spend enough time interacting with researchers.

On the other hand, a consulting firm may realise that their firm can only survive if their staff are made aware of new developments in agriculture earlier than the staff of competing firms. By working in more countries they may gather a wider range of experience than staff members in national extension. Similarly, in commercial companies the staff will usually be quite well informed about the research done by its own research institutes, but they may have less access to the research done elsewhere, especially in the research institutes of competing firms.

Content of Extension Messages

In many government extension organisations the choice of the extension messages is based either on the goals of the government policy or on research findings which are considered to be important for farmers by outsiders. A private extension agent cannot earn a living by working in this way because farmers are only willing to pay for information or other help for which they feel a need. A private extension agent could however, help farmers to discover that changes in their farming situations may need help in changing or modifying, to enable them increase their productivity for sustainable livelihoods.

A major reason to privatize government extension services was that these services were not very effective in many countries because they did not provide

the information which farmers felt they needed. Farmers have a choice as to listen or not to listen to their extension agent; they will only take notice if they are convinced that the information the agent provides will help them to realize their goals or if they consider him a nice fellow. In the study, most of the farmers obtained information on farming practices from their local FM stations. This information was however operationalized when the farmers met their extension agents for field demonstrations.

Increasingly extension agents are not only talking about production technologies which, are of direct benefit to farming practices but also about government rules and regulations and subsidy schemes, e.g. environmental conservation issues. Government policies are most effective if farmers follow these rules and regulations voluntarily and adopt them in their practices. This is most likely to happen if farmers are convinced that the government has made the right kind of policies. Many farmers however, feel threatened in their ability to earn a good income and manage their farm in the way they will like as a result of such policies. Subsequently, they may follow these rules and regulations out of fear of punishment but will change as little as possible. In this situation one cannot expect farmers to be eager adopters of government policies (Bahn, 1999). The chance that farmers accept these policies is highest when farmers themselves have participated in their design (van Woerkum, 1999).

Synergy among farmers, leaders of environmental groups, policy makers and others may enhance learning from each other by meeting to discuss the alternatives available to solve such government policies. However, even if

farmers are involved in designing these policies it is usually only a few leaders of farmers' associations who actively take part. Extension messages about government policies are quite important, but it is most likely that farmers will accept this information if it is provided by extension agents from their own farmers' association, even if the association is paid by the government for this work.

Some experts suggest reasons why an association may not be willing to offer extension messages about government policies. First, the association may lose members as a result. Second, the position of the farmers' association in its policy negotiations with the government may be weakened. Although the government may also want to contract a private consulting firm to teach farmers how they can reduce environmental problems, the firm may not be willing to accept this contract unless the extension messages are perceived by farmers to be in their interests.

The private input dealers surveyed as part of the studies seldom see it as their task to explain government policies to their customers, though they would be willing to inform farmers about the subsidies available to buy their product. In India for example where government extension services have been privatized, a unit is often maintained in the Ministry of Agriculture to explain government policies to farmers. This unit may find it difficult to work effectively owing to a lack of understanding of the problems faced by farmers. Consequently there may be a lack of trust on the farmers' part.

It is not only important that farmers understand government policies but also that policy makers understand farming and farmers. With a decreasing proportion of the labour force working in agriculture in many countries this becomes more important, yet at the same time more difficult. In many industrial countries farmers' associations have a public relations division to promote this understanding.

In the Netherlands, a commercial television station broadcasts a programme to illustrate how the most entrepreneurial farmers work and what problems they face. Since it is possible that commercial companies may try to cheat farmers by providing biased information, it is important that farmers are able to check whether the information is true. In some countries farmers' associations or the government extension service play this role.

From the foregoing, farmers will pay for extension service which has always been free, if the content of such services, especially in terms of information that is deemed by the farmer to be both appropriate and useful.

Extension Methods and Approaches required for Privatized Extension

Many extension scientists are now convinced that it is no longer desirable to use a transfer of technology approach in which the government extension administrators and planners decide on the targets to be reached by the field-level extension agents. A more participatory approach is instead preferred, in which farmers decide which changes are desirable and what kinds of support are needed from extension to realise these changes (Roling and de Jong, 1999; Haug, 1999).

A participatory approach requires that the extension organisation becomes a learning organisation with the ability to discover which changes are desirable in each specific situation. It is easier to adopt a participatory approach or a farmer-led extension system within an NGO or a farmers' association than in a government extension organization such as DAES. One problem with a participatory approach can be that some farmers expect their extension agent to provide services for them (i.e. how to solve a problem), whereas the extension agent sees himself as an adult educator, whose role is to encourage farmers to develop solutions for themselves.

For the private extension agent who needs the fees from his customers to earn a living, it can be more difficult to play this educational role than for a government extension officer, who will not be financially penalised if he refuses to perform a service role. A farmer can put pressure on the extension agent of a commercial company to provide free services by threatening not to buy the company's products any longer for example, but this cannot be said of the DAES. In sum, true participation of farmers in extension programming should be robustly pursued if extension privatization is to succeed in Ghana.

Funding Mechanisms

With the decline in public funding and donor support, extension systems are seeking diverse funding sources and financing models to address the long-standing issue of sustainability. Not only central governments, but also local governments, donors, external NGOs, and users themselves can finance extension. Despite frequent calls for privatization of extension services, public financing is still critical at least until private extension providers can adequately play their role. There is scope to tap additional funding sources, however, especially through community development funds, user fees, and cost sharing. Where public funds are employed, they may be allocated more efficiently and effectively through mechanisms such as competitive funding or contracting to private service providers.

The move away from directly funded government service providers as the main extension delivery system has been promoted by the reduced role of the state in economic activities, combined with unsatisfactory performance of public systems in the areas of accountability, efficiency, and effectiveness. The new mechanisms seek to augment public funding, promote user empowerment and expression of demands, and in the longer term, promote sustainable markets for advisory services.

The new financing mechanisms are defined in terms of the actors involved, the flow of funds and services, and conditions for use of funds. Most of these mechanisms combine empowerment of users with co-financing for specific services, member fees paid to farmer organizations, or levies on agricultural

production. They also involve competition between service providers and contractual relationships between the financing agency and service provider, or a tripartite contractual arrangement among the financing agency, the users, and the service provider. Countries that have successfully privatized their extension services have funded their extension programmes through the following means:

Community-Driven Development (CDD)

CDD funds offer a major opportunity to fund extension because donors and some governments now provide a large share of support to rural development through these funds. In Guinea for example, extension micro-projects at the community level were identified through participatory diagnosis involving agriculture staff, and approved at that level by a selection committee with a majority of producer representatives. Private extension operators were then contracted to produce the necessary technical expertise to prepare the micro-project and implement it with some co-financing from users. A similar mechanism also operates in Kenya, where private service providers (often NGOs) and users partner to prepare technology transfer proposals that are then screened by a local stakeholder committee. Even where public funds dominate, they are now allocated through a variety of competitive and contractual mechanisms. Contracting and competitive funding mechanisms differ principally in how activities to be undertaken are defined.

Contracting for Agricultural Extension by the Public Sector

Extension contracting takes many forms and may involve contracts with public sector agencies, non-governmental organizations, universities, extension consulting firms, or rural producer organizations. In contracting systems, in general, the agency — such as a public funding agency — draws up terms of reference and details of services to be provided, and then contracts for them, usually on a competitive basis. Services to be contracted are usually identified in consultation with users, although the programs tend to be longer term and more program-oriented. Contracts may be administered by national governments (as in Mozambique), the national government in collaboration with lower level government (as in Venezuela), or by governments with an NGO that then contracts with private companies (as in Honduras). There is also some 'reverse' contracting of public extension agents, often subject matter specialists, by NGOs/private sector and farmer organizations.

Competitive Funding Systems

These are generally based on bottom-up proposals solicited from user groups alone or in partnership with a service provider. They involve award of a contract to implement the approved project proposal and are generally for time-bound projects, often seed money to initiate activities and for open-ended proposals with special emphasis on innovations and piloting new ideas. Financiers view competitive funding as a mechanism to elicit bottom-up expression of demands and catalyze changes around innovative ideas and pilots. It is also a way of screening proposals against agreed *ex ante* priorities. In

practice, there is great diversity in how these mechanisms operate. A number of projects financed by the World Bank (e.g., the PRONATTA project in Colombia) include competitive grants for both research and extension and operate in a decentralized manner. Also the USDA provides an increasing share of its funding for extension through competitive grants. In nearly all of these cases, users pay at least a part of the cost of the service.

Few co-financed programs in developing countries are able to recover more than about 20 percent of program costs from users. It is notable that even in Europe (Germany, Estonia, and UK), clients drop out of programs as cost recovery percentages increase, especially when cost recovery rates exceed 60-70 percent. Nonetheless, cost sharing was important to ensure accountability and empowerment of users, rather than as a sustainable funding source. Even the very poor should generally pay a small share of costs to strengthen their 'ownership' of the services provided.

Even with new mechanisms in place, the 'devil is often in the detail' with respect to who is accountable to whom. For example, in contracting systems in which the government contracts for services to be delivered to farmers, what is the specific role of farmers in public sector contracting and are they empowered to terminate the contractual arrangement? How is accountability of the provider ascertained and who has responsibility for putting an appropriate Monitoring and Evaluation system in place? If public sector programs finance or co-finance services procured by farmers, accountability arrangements are clearer and should

involve service provider accountability to farmers and farmer accountability to government.

New approaches to extension require capacity building at all levels. Typically considerable capacity building is needed for rural communities and producer associations to effectively articulate their needs and work out contractual arrangements. Experience has generally shown that these needs are greatest in poorer and more marginal communities. Contracting out publicly-funded extension services also demands considerable skills on the part of government to consult widely with stakeholders, define terms of reference for service providers, screen proposals, and monitor implementation. In a decentralized system, these skills are needed at the local governmental level, an even more daunting challenge. Finally, in many situations there are few qualified service providers. In such situations, contractual and competitive mechanisms may lead to a replacement of a public monopoly by a private monopoly, or in extreme cases, failure to implement programs for lack of bidders. Success with such reforms requires the emergence of sufficient qualified service providers to ensure competition and provide clients with alternatives when procuring services.

Many of the new approaches towards funding of extension services to ensure cost effectiveness are being piloted on a small scale in a few districts or communities (e.g., Guinea). Wider use of the approaches will require strong evaluation systems to assess experience and lessons learned, and in-depth capacity building to provide a basis for expanding program coverage. It is clear that emerging approaches require many years for effective scaling-up. Most

countries, however, still have a substantial legacy of public extension in line ministries and there is the non-trivial issue of what can be done with the conventional system during the transition period. Some investments, especially training, can enhance extension agent find employment in NGOs, producer organizations, or private firms in a reformed extension system. To date, there is little evidence on the cost effectiveness of the new approaches. Experience however suggests that costs may be high in the initial stages, and it may take many years for clients to 'graduate' from highly subsidized services to self-financing. This has been the experience in Chile (Rivera and Alex, 2004) one of the pioneers in new approaches to extension.

There is also little evidence about the sustainability of competitive funding and community-driven approaches. A long-term strategy to ensure sustainability should be defined early in any program. In some cases, grant mechanisms may be seen as one-off efforts to reduce acute poverty or vulnerability (e.g., in the aftermath of a natural disaster) or to catalyze a market for advisory services. The issue is more of how to design an exit strategy than to ensure sustainable funding.

Clearly, a lot of these reforms are in their normative stages and additional time is needed for implementation experience to establish what is effective and sustainable and what is not. The goal is to make the public investment in extension more efficient, not to eliminate it. Although some types of private extension emerge spontaneously in the course of agricultural development, the more challenging aspects require a combination of public policy and funding and

the encouragement of an expanded range of professional capabilities in agricultural extension.

An explanation of the nature of private extension requires an understanding of the possibility of separating the funding of extension activities from their delivery. Under conventional agricultural extension, a public agency was granted a yearly budget and was responsible for all extension activities. Consideration of private extension recognises that public moneys can be used to fund private activities, and that public services may benefit from private (cost-recovery) revenues.

A study by USAID (1985) concluded that, public, private and mixed delivery systems each have advantages in particular contexts. Private-sector extension can serve as an important supplement to Government extension system such as the DAES of MOFA for certain groups of farmers under certain circumstances. However, private extension agencies cannot substitute for public agencies when the policy and regulatory environment is poor and when production is mainly basic food commodities grown by subsistence farmers.

Shekara (2001) suggests that reforms within large public sector extension services take a long time and require constant effort by those with vision and the leverage to stimulate change. The success of an extension service depends on the effectiveness of planning at four levels; policy, programmes, projects and strategy. Policy and programmes must be decided by the public extension system, while projects and strategy can be formulated by the private extension organizations. He further noted that when the private extension organizations get

involved in providing extension support to farmers, it is likely there will be competition among the various extension providers, which will result in more efficient and demand-driven services. Both technical and allocation efficiency which are basically economic in nature are well taken care of by the private extension agencies, resulting in cost minimization, profit maximization and optimal use of resources, which are warranted in a competitive environment (Vernon, 1987).

Vernon (1988), suggesting a more definitive role for private extension, explained that private extension has to play a crucial role to work as facilitator in the group activities or participatory approaches, to avoid conflicts among the groups and people and also have to conduct continuous supervision and monitoring of the programmes for their long lasting impact which is not happening through public extension agencies. Private extension can also be helpful in in-depth identification and analysis of the existing problems and organizing need based training programmes by involving more and more people. He concluded that ignoring the strengthening of linkage system of the private and public extension systems will retard the speed of socio-economic growth.

Rivera (1997) describes two important issues which constrain the effectiveness of collaboration between the public and private sector agricultural extension services as:

1. Suspicion on the motives and competence of NGOs and other private extension practitioners by the government departments resulting in non-cooperation in activities at field level.

2. Lack of staff and experience on agricultural research and extension by most NGOs.

Commercial/business companies and private consulting are profit motive driven and this forms the basis for most of their management decision making. Staff members are not paid according to their age or level of education, as was often the case in government organisations, but according to the contribution they make to maximizing their company's profit.

When a farmer asks for help from a private extension agent, he/she knows the cost of this advice. The cost of help provided by such an extension agency could be hidden in the price of the product, possibly reducing the incentive for cooperation in a cost-effective way between the farmer and the extension provider. If extension is free many farmers prefer to receive services rather than education. It is argued that the cost of extension provided through consulting firms or commercial companies is lower than through a government extension service, because these firms and companies have to be cost conscious in order to make a profit. On the other hand, in situations where there may be many different firms, companies or NGOs working in the same area, the combined costs of travelling and of staff training will be higher than for one government extension service. We do not yet know which way of financing agricultural extension is most costly. It has also been suggested that the cost of extension might be reduced by replacing personal contact between farmers and extension agents by mass media or by information and communication technology. Whilst these are undoubtedly useful, research has clearly shown that they are mainly effective in

the first stages of the adoption process and have to be supplemented by interpersonal communication in later stages (e.g. van den Ban and Hawkins, 1996).

A study on the privatization of different government organisations in the Netherlands found that after privatization their performance increased by 30 to 200 per cent, partly because the staff services decreased in number and in size (de Koning et al., 1997). Similar findings have also been reported for the extension service (Tacken, 1998). With privatization, the extension management system changed from an input-directed system to an output-directed system: i.e. the criteria for evaluation changed from inputs (e.g. the number of farmers' meetings) to outputs such as change at the farm level. Such a change in organisational culture is not easy to realise.

In many developing countries the salaries of the government extension agents are so low that they have to find an extra source of income for the survival of their family. One possibility is to ask the farmers they visit to give them some of their products. It is also possible that the extension agent can earn extra money by selling seeds, agrochemicals, etc. The danger in this is that extension agents may recommend those products for which they or their organisation can earn most, rather than those which are most beneficial to the farmer. This apparently happens sometimes in the Chinese government extension service, which is expected to earn part of its budget by selling inputs to farmers. On the other hand, there is no use in advising farmers to apply inputs which they cannot access because the input distribution system is ineffective.

There have been significant changes in the approaches adopted by extension organisations in developing countries in the past four decades. Extension in developing countries, including Ghana, has become complex because there is increasing acknowledgment that the farming system and farmer needs are diverse, complex, unpredictable, context specific and need broad-base support. In response to this acknowledgment, there is a shift in view of extension from top-down to bottom-up participatory decision making. There is also a shift in focus from agricultural production to livelihood security which, in consequence, has brought about a shift in extension delivery approach from the Transfer of Technology approach to an "integrated approach" that draws on the best approaches from all those available given the problem. This shift in focus has a major implication for extension management.

Focusing on livelihood security, an integrated approach and the poor, implies that the operational responsibilities of extension organisations would need to be devolved away from central governments towards local governments and communities where the majority of the poor in developing countries reside and earn their livelihoods.

The extension and rural development literature from the mid-1990s into the 2000s (Scoones & Thompson, 1994; Chambers, 1995; Chambers, 1997; Sutherland et al., 1999; Ingram et al., 2002; Molua, 2005) suggests that extension has undergone numerous changes through the usage of various approaches in a bid to achieve effectiveness and efficiency. It appears, however, that agricultural extension can no longer focus only on food production and income from

agriculture and expect to achieve sustainable rural development. The literature also proposes that extension should focus on livelihood improvement in order to realise rural people's full potential and be responsive to their changing needs. The notion is that household food security is not simply a function of household food production and income, which has been the traditional focus of agricultural extension (Sutherland et al., 1999). The next section examines the current debates on yet another phase of agricultural extension (privatisation of Extension) which is steadily gaining audience in the global development arena.

The Need for Private Extension

Privatization is a term broadly conceived to include efforts by countries, to decentralize and or fiscally redesign their extension systems (Shekara, 2001). The term usually means a full transfer of ownership, usually by way of sale, from Government to private entity. Increasing budgetary crisis and fiscal deficits have forced not only the developed countries but also developing countries like Ghana to look into alternative ways to seek assistance from private agencies for taking up the task of agricultural extension service. Savas (1987) defined privatization as the act of reducing the role of government or increasing the role of private sector in an activity or in the ownership of assets. When agriculture extension is discussed, privatization is used in the broadest sense of introducing or increasing private sector participation, which does not necessarily imply a transfer of designated state owned assets to the private sector. Private extension services are primarily of two types. The first is the entirely private type, which is directly involved in farming activities through consultants, agri-business, agricultural

input industries, etc. The second type consists of farmer's organizations, NGO's etc., which remain largely dependent on government subsidies.

In this privatization context, funding the service, cost sharing/cost recovery, staff support, infra-structural facilities, willingness/acceptance of the farmers, the ratio of expenditure, outreach and manpower have became the main issues in relation to the global issues of economic liberalization, food security and sustainability. According to LeGouis (1991), at least three scenarios have been suggested by governments and farm organizations with regard to privatization of Extension as follows:

- Public financing by the taxpayer only for the kinds of services of direct concern to the general public.
- Direct charging for some individual services that produce direct return in the form of improved income, with the possibility of differential rates for specific situations or target groups.
- Mixed funding which is shared between public and private professional association contributions for services, with delayed return or collective services, such as applied research, training of farmers and agents, and improvement in Extension methods and tools.

According to Kidd et al (1998) private extension has emerged as an alternative to Public Extension to bridge the adoption gaps in agricultural technologies. According to them, private extension is making efficient use of mass media like Radio, television, and computer network for reaching farming communities. Extension service has been traditionally organized and delivered by

the public sector all over the world, which led to a situation wherein, whenever one refers to extension, it denoted public extension service. Similarly, whenever private sector is referred to, there is a tendency to consider only the corporate sector in the category. However, private extension has a broader canvas including all relevant private groups than the narrow canvas of corporate sector.

Privatization of extension services does not therefore aim at substituting private sector for public extension service, but rather adopting a variety of forms involving different stakeholders. What has been the experience to date, and what policy lessons might be learned are some of the answers this study seeks to unravel. Many services that were managed in the past by governments are now being managed and delivered by the private sector, especially in developed countries (FAO, 2005). The underlying reason for privatisation is dwindling budgets of public institutions, which makes them relatively inefficient and less productive, causing not only financial loss to the government but also creating discontent among the population including farmers. The private sector, on the other hand, has generally more resources, innovative ideas, and a motive for profit and thus keen to offer efficient and better services to its clientele.

Rapid technological advancements in the field of communication and information; liberalization and the resultant opening out of public research and educational institutes to part with the technologies through selling and consultancy; changing cropping trend and emergence of contract farming forced by uncertain and volatile market situation; desperation and competition among farming communities to raise good crop and earn more from smaller holdings;

loss of credibility in the existing extension system; and inability of the public extension system in meeting the requirements of the huge client system, all stand favorably for Privatization of agricultural extension (Shekara, 2001). To him, private extension service provides enormous employment opportunities to educated unemployed and underemployed youths.

The Privatization of extension services efforts may also face hurdles in the form of certain unfavorable factors (Carney, 1998). Larger area under subsistence farming; need for location of specific agricultural technologies within highly diverse production systems; women dominated agricultural work force with poor extension, social and media participation; and apprehension about the real intentions of the private system which may end up in giving contradictory messages, and the messages aimed at quicker results neglecting the ecological considerations could hinder the rate of privatization. However, the most difficult factor would be changing the mindset of farmers who are hitherto reached through public extension free of cost.

Current Debates on Private Extension

Agricultural extension finds itself in the midst of significant changes and uncertainty. Processes of change have been underway for some time but in many developing countries these have been accelerated by structural adjustment reforms aimed at reducing public sector spending. An environment of declining government budgets combined with waning donor interest has led to significant cuts in public extension services (Farrington, 1994). Those public extension activities that remain are under increasing pressure to provide an accountable and

responsive service to citizens. At the same time, the retreat of governments from managing agricultural input and output marketing, a diversification in the sources of agricultural research, and increased opportunities for trade, have opened many new opportunities for the private sector, including extension provision. In addition, there is growing uncertainty about what role extension is supposed to play in the development process. There is now a much-reduced emphasis on uniform messages (such as those provided by the T&V system). The need to involve farmers more in the extension process itself has been recognised for some time and a number of participatory and facilitation approaches have been developed (Roling, 1995; Coldevin, 2000). In addition, farmers need extension on a diverse range of rural development options including information on markets, rural industry and other income opportunities (Farrington et al., 2002).

Privatized extension has been the subject of widespread discussion by those considering the challenge of providing an efficient agricultural extension system for farmers in developing countries (Farrington, 1994; Kidd et al., 2000; Rivera, 2001; Katz, 2002). Although new private extension initiatives offer many opportunities for commercial farmers, there is less certainty about the implications for resource-poor farmers whose connections to, and command of, markets is much more tenuous. It is generally recognised that many of these farmers have been poorly served by conventional, public sector extension in the past, but does a call for 'privatization' of extension imply any greater hope for them? Can private extension initiatives serve the needs of commercial farmers (in order to strengthen the contribution of agricultural markets to economic

development) and at the same time redress the neglect suffered by many resource poor farmers whose production is principally for subsistence?

In theory, private extension is simply the provision of a service or advice by a private firm in exchange for a fee akin to a market-based system. The degree to which this can be done in practice depends on the extent to which extension services can be converted into a private good. Agricultural information is commonly seen as a public good because of its low excludability and low subtractability. Much agricultural information can spread easily amongst farmers and retains its value despite wide access, and is thus considered a public good.

Agricultural information with private good characteristics could be tied to the use of a purchased input (such as instruction on the use of a particular chemical), specific to the fields of an individual farmer (such as tailored soil or pest management advice), or provided through long-term interaction with a farmer or group of farmers.

An example of a toll good might be time-sensitive market information for which a farmer was willing to pay. An example of a common pool good might be information on the management of common forest or grazing resources. Agricultural information provided as a private good can occur in various circumstances and does not necessarily require the existence of a highly commercial agricultural system. For instance, in the 1930s, villagers in northern Thailand employed lowland rice growers to teach them how to terrace and farm irrigated fields (Kunstadter, 1987). But in general, instances of extension information provided through private market mechanisms are more likely to occur

with highly commercial agriculture. In some instances in Europe and North America, private extension markets have developed to meet a broad set of needs. In the UK, for example, a private extension sector has been active for many years, even before the public Agricultural Development Advisory Service (ADAS) was privatized (Garforth, 2002).

In the US, many farmers pay private consulting firms to provide technical extension services. In the state of Illinois, for example, precision farming services such as grid soil testing using geographic information system (GIS) software for precise mapping of individual fields and the generation of soil fertility maps are available from various suppliers. Farmers tend to contract this service directly from the local cooperative, private input supply firm or a private agricultural consulting firm. Farmers are able to use the analysis to define their use of fertiliser and agrochemical input requirements with the potential of saving costs on inputs and improving overall yields. A reduction in the application of nitrogen in Illinois following the adoption of precision farming practices has also resulted in 'public' environmental benefits by alleviating some of the damaging effects of nitrogen being introduced into the local freshwater and Mississippi River delta ecosystems (Swanson et al., 2002).

The Indian government has launched an ambitious initiative to encourage private extension with the Ministry of Agriculture and the National Bank (NABARD). Graduates are being trained to become 'agripreneurs' and on completion of their courses they receive a loan to establish an 'agriclinic' or 'agribusiness centre'. Farmers are expected to pay a fee for their services and the

agripreneurs are expected to identify the demand for a broad range of services from soil testing to advice on organic production and food processing. So far 112 businesses have been set up in 10 states and it is intended that the new services will provide specialist advice that may be beyond the scope of the service presently offered to farmers through public extension (Shekara & Charyulu, 2002).

The performance of private extension services is more complicated than the theory suggests because of the difficulties inherent in making information a commodity, subject to excludability, as well as because of market imperfections that may reduce social welfare (Hanson & Just, 2001). An important part of agricultural extension is the provision of knowledge on the benefits of new technologies and techniques. However, much of this type of knowledge cannot be restricted for use only to those who pay for it. Without 'excludability' of this kind the service providers cannot prevent the information being shared by other potential buyers and are therefore unable to profit from providing the service. One strategy is to link the advice to another product that is excludable, such as an input. There are cases when this can lead to a conflict of interest. Hanson and Just (2001) describe examples from Maryland (USA) where private firms offering advice on nutrient management and integrated pest management (IPM) link their services to the sales of fertiliser or pesticide (respectively), which constitutes a moral hazard. In addition, if farmers are unaware of the value of the information they receive and the benefits are not easy to observe, then it can be very difficult to establish a market price for the service.

Social benefits from extension will be reduced under a private extension system when market imperfections arise. Imperfections may be associated with the costs of reaching remote areas or the failure to provide affordable services to smaller farmers. In the Maryland case described by Hanson and Just (2001), the private companies that supply nutrient management plans tend to concentrate on larger farms, and private IPM services also focus on major crops and larger farms. In the UK, although new clients were attracted to the privatized extension service, many smaller farmers were unable or unwilling to pay for advisory services (Garforth, 2002). There is thus a concern that this type of privatization will not come close to addressing the much more diverse, and often more subsistence-based needs of the majority of resource-poor farmers.

In these cases, general calls for 'privatized extension' may be diversionary or irrelevant unless more thought is given to how private incentives might be directed towards the reform of conventional extension. Although it is possible to question the relevance of private extension because of these limitations of private extension markets, it is necessary to recall the overarching problem of public extension's current high costs and low efficiency. There is a need to reduce public expenditure and challenge the centralised and top-down structure of public sector extension. It is also important to recall that current approaches to government activity favour a 'new policy agenda' under which greater participation and decentralisation are expected (Kidd et al., 2000).

In the UK, ADAS was privatized in 1997 but an earlier change in legislation (Agriculture Act 1986) paved the way for fee-charging and set a target

of 50% cost recovery from charges to farmers over a period of five years. These targets were readjusted in the run-up to privatization. Certain services such as environmental protection and conservation were retained by the government at the time of privatization and formed an executive agency within the Ministry of Agriculture. The government also retained the option of subsidizing certain services by contracting ADAS or another consulting company to offer the service for them (Garforth, 2002).

In Germany the shift to private incentives was initiated in some areas following reunification. The state of Thuringia is one example that has attempted to introduce private extension in order to reduce public expenditure; the budget was cut from DM 5.2m to DM 2.5m per year (Currle et al., 2002). In Chile, the reform process has been going on for over 31 years with the first privatised extension service in 1978. There has been significant investment over this period by the government, and it still funds 85%–90% of the programme's total cost. The process has therefore been more about improving the quality and efficiency of the service than simple cost recovery or privatisation (Berdegué and Marchant, 2002). A major experiment in Africa is recently underway with the National Agricultural Advisory Services (NAADS) in Uganda, where farmers fora at the local level are being constituted to use funds provided through local government to identify and contract private extension providers. The reforms are operating in 10 districts initially, with further expansion into the remaining 46 within 5 years. The contracts are expected to be managed locally through local government and farmers' organisations with small groups of advisers and private companies.

It is important to understand that whilst in many cases such experiments in private extension are meant to 'replace' the public service, it is not a case of a one-for-one exchange, where a public provision system is, for instance, substituted by a single, subsidised, system for contracting private extension providers. The hope is that this is simply one step towards a significant diversification in extension provision, where a wide range of providers, contracted or directed through various modalities, is available to farmers. The options for reform offered by privatized extension are not merely lowcost versions of the status quo but should be marked improvements in the transfer of agricultural information and advice for long term development objectives as well as promote a strengthening of farmer control and evaluation of the extension service. Although public sector cost-recovery and subsidy programmes should be regarded as transitional (Umali and Schwartz, 1993) a flexible mix of services is likely to be required for a long time before fully privatized services can be achieved.

Forms of Privatised Extension and Funding Arrangements

Privatized extension can take many forms and it has become clear that it does not represent a simple, undifferentiated alternative to the monolithic public extension system it is often expected to replace. It is clear from a global review that extension services vary considerably by the degree to which they have adopted privatized extension mechanisms. For this reason some suggest that it is less useful to talk of a 'model' of privatized extension that can be adopted wholesale than to consider what aspects of privatized extension offer genuine options under which circumstances. In this way policy makers will be able to

choose from a range of privatized extension mechanisms to achieve the most equitable and efficient extension service with the resources available.

Some of the instances of private extension services have emerged more or less spontaneously with the development of agricultural markets. These include extension related to contract farming, the activities of agricultural input and commodity firms, the contributions of producer co-operatives, and the provision of veterinary services.

Contract Farming

There has been considerable growth in contract farming, and this is often associated with the provision of extension advice. For instance, farmers in Kenya who grow horticultural crops on contract to exporting firms can expect to receive some advice and support on crop management, not only to ensure the exporter of good quality produce but also to provide a service to the contracted farmers. Contract farming can offer significant opportunities to farmers (Benziger, 1996), but there are also many problems, including farmers' potential loss of control over farm management decisions and dependence on a single buyer (Porter & Phillips-Howard, 1997). The extension advice offered under contract farming may be of good quality, but it is usually confined to the crop in question, and farmers have little choice about the content or nature of information delivery. The degree to which extension provision in contract farming responds to farmers' priorities is a function of the distribution of power between the firm and the producers. The cost of providing the extension advice is usually included (although not necessarily explicitly) in the contract with the farmer; indeed the higher extension

needs of smaller farmers is one reason that firms often prefer to avoid such producers in contract farming (Key and Runsten, 1999). Other opportunities may link extension advice to the delivery of a commodity or the purchase of inputs.

Agricultural Input and Commodity Firms

Several recent examples from India show how commodity firms or input suppliers may be motivated to provide extension services (e.g., crop management advice, weather reports) to their clients. The provision of this service may be strictly linked (so that farmers who are not clients of the firm are excluded from the service), or may be provided as an inducement (e.g., to encourage farmers to sell their harvest to a particular buyer).

Rallis, an input marketing company in India, has established rural service centres to provide a range of integrated services to farmers growing wheat, soybean, vegetables and fruits. In return for a fee, farmers are provided with regular visits by agronomists, assistance with credit arrangements, access to farm inputs, soil testing and a guaranteed market for their produce.

Mahindra and Mahindra Limited, a tractor company in India, has also begun to offer private extension services through its dealerships and franchisees. These services are provided on a fee-per-area basis and include sale of farm inputs, credit, field visits by trained supervisors and produce procurement. The service was aimed initially at rice farmers and has been expanded since it began in 2000 to include sugar cane, maize and wheat (Sulaiman, 2003).

EID Parry of India also initiated farmer extension services through locally managed information centres in order to strengthen the relationship between its

sugar mill in Tamil Nadu and the contract sugar cane farmers. The farmers are provided with more timely information on the status of their account in terms of credit, input supplies and produce sales and can access a range of extension advice. It is clear that all these initiatives are in their early days and have arisen in a particular context of a competitive agribusiness sector and improving information technology facilities. These initial experiences show signs of a developing range of privatised extension services from private companies, where farmers are willing to invest with no public sector encouragement.

Producer Co-operatives

A commodity-based link to extension may also be initiated from the farmers' side. A good example is the activity of producer co-operatives or commodity associations that organise the provision of extension advice on behalf of their members. The Maharastra Grape Growers Association is one of India's oldest farmers' organisations with approximately 17,000 members with 20 elected members working as 'extension functionaries'. The association has four offices in the state through which it organises discussion groups and seminars, and publishes printed materials, such as a monthly information newsletter. The association carries out research and development on a designated research farm and provides facilities for soil, water and plant testing and brings outside experts to solve specific problems (Sulaiman and Sadamate, 2000).

Commodity associations that fund their own research usually provide some type of extension to disseminate the results among their members. In Colombia, a Rice Producers' Federation funds adaptive research and extension in

which local farmers participate in identifying priorities and evaluating results (Estrada et al., 2002). Producer co-operatives may provide important extension services to their members without becoming involved in research activities.

Veterinary Services

Another example of private extension can be found in the organisation of veterinary services in many parts of the world. Although the state has often provided veterinary services, there are many instances of a parallel private market, particularly for curative services on a fee basis provided by veterinarians or dealers of pharmaceutical products. The motivations for such service are clear: livestock keepers are willing to pay for good quality advice and products to maintain the health of their animals, which represent a valuable stock of savings and a source of income. As long as there is adequate choice and competition, farmers have a chance of receiving an efficient service. Elements of privatised veterinary service appear even among resource-poor herders.

Actionaid/Vetaid set up a paravet service in the Sanaag Region of Somaliland in the early 1990s. There were no other veterinary services and a network of 30 paravets was formed to cover the large isolated area. Privatisation through the sale of veterinary drugs at commercial rates based on the establishment of veterinary pharmacies in each district emerged as the most sustainable strategy, following consultation with pastoralists. The proposal also included linking paravets to the pharmacies and linking the pharmacies to traders to ensure the mutual exchange of technical, veterinary and business knowledge (Catley, 1996).

The emergence of a private veterinary sector depends on the policy environment. For instance, it is often difficult for privatised veterinary services to compete with subsidised public services. In addition, regulations and professional jealousies sometimes stand in the way of the development of an independent private veterinary sector. It is important to develop the political will for reforms to take place through the promotion of relevant training, clear distinction between veterinarians and paravets, and adequate licensing and regulation (Carney, 1998). Veterinary associations can also play an important role in promoting a privatised service and enforcing regulations (Leonard, 1993).

The example of veterinary services has implications for crop extension: farmers are willing to pay for extension service, but particularly when it is related to issues of significant economic importance and involves fairly straightforward, targeted measures. On the other hand, preventive measures and public goods issues in livestock management (just as in crop extension) are less likely to see the spontaneous development of a market for private provision. The next section will consider the way private incentives influence general extension activities.

Funding

In recent years, several multilateral and bilateral donors have encouraged the privatization of national extension services. One of the arguments put forth in favour of privatization, is that since farmers profit from extension advice and the government budgets for public services are decreasing, the cost of delivering advice should be recovered by charging a fee from the farmers. More so, it is suggested that farmers pay for other inputs to farming therefore paying for

extension services should not be a problem to farmers. To this length, it is has been argued that, it is prudent to consider financing and delivery of extension services as separate functions, to be performed by two different sectors, ie public and private.

Some authors opine that the shift towards privatised extension services will distort the traditionally friendly and informal relationship between government extension staff and the subsistence farmers in developing countries, because until now the farmers have never been asked to pay for extension advice. Apart from the question of whether total, partial or no privatization of extension is needed in developing countries, the national extension services and their clientele ought to be well informed about the pros and cons of this extension privatisation. This also forms a major focus of this study.

Diverse agricultural extension funding and delivery arrangements have been undertaken since the mid 1980s by governments worldwide in the name of privatization. The wave of privatization has permeated governments of all sociopolitical ideologists and nations at all stages of development. Governments throughout the world are trying to meet the challenges of costly government programmes, bureaucratic inefficiencies and economic stagnation by turning to the private sector for help and assistance. Yawning deficit in the budgetary resources, increasing burden on the economy and poor performance of the public sector have necessitated privatization of agricultural extension.

The methods of funding of privatised extension also differ across countries. In France, nearly three-quarters of the total resources for the operation

of the system are collected at the farm level through direct payment, voluntary fees from farm organizations such as cooperatives, compulsory fees levied in the form of taxes on a variety of products, or land taxes collected by the Chamber of Agriculture.

The British system promotes direct payment by users without privatization of extension services. The public agency responsible for research and extension, the Agricultural Development and Advisory Service, is responsible for such tasks and relies on government employees to carry out the work. The novelty of the British approach is a system of charging for certain services, on a time-cost basis that were previously offered free and financed by tax revenues.

With the Dutch system, transfer of the responsibility and funding from the public to the private sector has been limited to about half of the extension staff, with the remaining half still budgeted and managed by the Ministry of Agriculture. The extension field agents have been transferred and retrained and offered the opportunity of working in a privatized structure established and managed by the Dutch farm organizations, although the total number of field agents is expected to decrease slightly. Research services and regional coordinating services between research and extension remains under government control and will continue to provide free services.

Privatising extension services in Ghana will require some form of payment to ensure sustainability and efficiency, drawing from the lessons on extension privatisation from these developed countries. What model of private extension that will be suitable for the Ghanaian context is a major quest of this study.

Multiple means of payment (public and private) have emerged as governments have opted for alternative financial and delivery arrangements to pay for and deliver public sector agricultural extension services. Extension provision is often multi-institutional and organized in ways that are not necessarily independent. Where the public sector provides extension, the alternative funding arrangements include:

1. *General tax-based public funding* for agriculture, including funding of agricultural extension services, that is, the traditional public sector mode of funding extension;
2. *Commodity tax-based public funding* (through cess or parafiscal tax), for example on an agricultural commodity such as coffee, as in El Salvador;
3. *Fee-based public funding,* in which fees are charged, usually to large farmers for extension service, for instance in the grain rich northern region of Mexico;
4. *Contract-based commercialisation of public services,* whereby contract-based arrangements are made between farmer and public sector extension services, as in New Zealand.

Where the *private sector* provides extension, the alternative funding arrangements include:

1. *Government revenue-based vouchers,* provided to farmers who then contract with private sector agents for extension information provision, as in Chile;

2. *Public credit revenue-based coupon schemes* attached to agriculture loans, obligating the farmer-borrower to use a percentage of the loan for extension advising purposes;
3. *Membership and fee-based, including commodity tax-based funding,* whereby farmers pay membership and service fees, and the private organization (e.g., a chamber of agriculture) also receives funds through a public cess or parafiscal tax charged on agricultural commodities, which funds are then transferred to the private sector organization; the private sector then provides the extension services - although public sector officials generally sit on the chamber's governing board;
4. *Membership fee plus commercial sponsorship by groups of input suppliers,* where farmer groups are provided non-advisory, educational extension services by a consortium of privately employed agricultural consultants with partial financial support from rural sector commercial sponsors - such groups can operate on a large scale, with coordinated extension objectives;
5. *Privatization,* whereby provision and, eventually, agent salary payments are shifted to a farmers' association or other private entity.

Privatised Extension Management

This section provides a brief overview of issues related to the management of privatised extension. The issues include the development of key personnel and

services for private extension, the organisation of farmer demand for that service, the nature of the service provided, the ability of such systems to reach poorer households, and funding modalities.

The Service Providers

A key to any type of private extension is the availability of skilled service providers. In most countries the majority of this expertise has been concentrated in the public extension service. In theory, such extension agents can establish new careers in the private sector. This has happened to some extent in Europe, but the transition is not always easy. In the new Uganda strategy, much reliance is being put on the staff of NGOs (some of whom were former public extension agents). In Guatemala, farmer organisations encouraged to hire extension agents have tended to favour local personnel, which has the advantage of increasing the communication between farmers and the agent, but may imply some sacrifice in technical skills. The programme in India for establishing 'agriclinics' is training recent agricultural graduates, most of whom have never worked in the public sector, to help them establish their own consultancies. There is a need to think about how such extension agents will be trained, and the conditions of service that will induce someone to follow this career when it is no longer linked to a protected civil service position.

In the German example of Thuringia State, the public sector staff proved unable to adjust to serving their clients through a privatised system of extension. The new services therefore had to draw on private sector advisers from other states and it was necessary to train younger staff who were less entrenched in the

old system. One of the premises for privatised extension improving the quality and relevance of the service to farmers is based on there being a choice of service provider and a degree of competition between them. In many of the cases it is the development of a large enough supply of trained advisers to fill not only one extension service organisation but several competing ones that has taken considerable time and resources.

Attracting private sector advisers from one area to another such as in the example of Thuringia is obviously not an option in Uganda, for example, where capacity is absent throughout the whole country. For this reason the alternative strategy of building on the existing capacity of NGOs has been adopted out of necessity. In Chile many of the existing private sector organisations including NGOs and farmers' organisations were excluded from contracting under the government-funded extension programme for political reasons up until 1990, when these constraints were removed and the range of service providers began to diversify.

Training schemes and training institutions, including those related to extension, have tended to suffer particularly severely from public sector budget cuts. In the transition to privatised extension delivery the need for training is likely to increase and responsibility for funding this activity may rest with the public sector for a considerable time. Sasakawa Africa Association and Winrock International have been collaborating since 1993 to provide mid-career extension training to help public sector extension workers adjust to new challenges. These innovative extension training programmes have been established in Ghana,

Tanzania, Ethiopia and Uganda through the Sasakawa Africa Fund for Extension Education (SAFE). Although extension workers benefit from further technical training it is also important that they understand the structural changes taking place and to 'grasp the new roles that the private sector is playing and the likely prospects for private sector participation in extension delivery and financing' (Opio-Odongo, 2000:9). It is necessary to consider the implicit training requirements in transition strategies and ensure that not only the funding but also the capacity is available for local training programmes to be made available.

The Farmers

In cases where farms are very large, or there is a high demand for an individualised service (such as veterinary treatment), privatised extension may be managed on a farm-by-farm basis. But in the majority of the cases that were reviewed, the service was channelled through some type of farmer organisation. In these cases, the challenge was to identify the type of farmer organization that was most appropriate for this purpose. In some of the cases discussed in Section 2, commodity-based organisations already exist and these are a natural conduit for extension advice. But dealing with smaller farms and more diversified needs requires a different type of organisation. There is not yet enough experience to assess the degree to which organizations purposively formed to provide an interface with an extension market will be effective.

Private extension provision will have to deliver a certain minimum level and value of service to elicit broad-based and vigilant participation from farmers in the organisation that is responsible for contracting and monitoring. Experience

(outside of private extension) has shown that it is easier for external agencies to form groups of subsistence cultivators than it is to guarantee that these will be self-sustaining.

In a comprehensive review of Associative Peasant Business Firms, farmers organisations that are being promoted in Chile, Berdegué (2001) shows that those peasant associations that focus on specialised commodity markets with high transaction costs are most likely to be viable. Those associations that are formed to gain advantage in traditional wholesale commodity markets do less well, and those that lack effective links to specific markets will either collapse from lack of purpose, or will become a channel for government or intermediate agency funds, taking advantage of the greater political leverage enjoyed by almost any organised group of farmers.

One approach has been introduced in Estonia that differentiates the amount of cost-recovery required to reflect the scale and indivisibility of the services being offered. For individualised services farmers pay a minimum of 15 percent and a maximum of 50 percent depending on the overall size of the contract. Services provided to farmers as a group tend to be managed by county level administration and are charged to farmers at a rate of 20 percent of the total cost. The farmers and certified advisers are registered in order to operate under the individual contracts for services that are agreed between the two parties but also require county-level government approval. The individual agricultural advisory services are therefore subsidised but the contracts allow the farmers

greater flexibility to determine the nature of the services they receive (Loolaid, 2002).

In a number of cases the administration of private extension is linked to decentralised government structures that provide the funds and liaise with farmer groups. In Uganda, for example, the majority of funding is expected to be managed by contracts between subcounty-level government entities and farmers.

However farmers (both as individuals and as members of groups contracting for the provision of services) are likely to need capacity building to benefit fully from such mechanisms. As many governments are involved in decentralisation, this can provide an impetus for private extension, but if the decentralisation process itself is badly managed, then the prospects are not good. Farmers' organisations in particular are often seen as the beneficiaries of privatised extension reforms but they require long term investment to build organisational capacity *before* increased decision making regarding extension service provision is transferred to them. Although a structure of farmer groups and forums is being developed, much will depend on the ability of the majority of resource-poor farmers to make their voices heard and to develop the capacity to evaluate the services provided in their names (Kidd et al., 2000).

It is also worth restating that it has taken 35 years for the milk producer co-operatives to develop the organisational capacity that they have today. It cannot be assumed that such institutions will blossom immediately under conditions of privatisation and decentralisation.

The Nature of the Service

The nature of privatised extension service offered to farmers will depend on the strategies of extension delivery and the range of ICT that may be enlisted. An additional issue is the responsibility for providing extension that promotes long-term environmental management concerns or other public policy issues that are unlikely to respond to a private extension market.

An important issue for the future of privatized extension is an understanding of exactly what type of service is to be provided. No matter what the future of privatised extension, it is widely acknowledged that the traditional model of top-down, uniform instruction on crop management recommendations (characteristic of much public extension) is far from the requirements of today's farmers. In the first place, where extension is successful, it is more likely to involve strong farmer participation and to feature joint problem solving rather than standardised solutions. To what degree such requirements can be met by building farmers' capacity (to solve their own problems), farmer organisation (to seek joint solutions), or an efficient market for extension advice (responding to clearly articulated farmer needs) remains to be seen. Secondly, public agricultural extension has traditionally been seen (although not always functioned) as a conduit between farmers and public agricultural research. Public research must itself, face some important changes (Byerlee and Echeverria, 2002) and it is not clear how private extension might fit in.

Recent innovations in which competitive grant programmes for agricultural research encourage the participation of public and private organisations, NGOs, and farmer organisations (Reifschneider et al., 2000;

Bingen and Brinkerhoff, 2000). Such competitive grants could be extended to encourage private extension and better links between research and dissemination.

In addition, the technology for providing extension messages is changing and it is necessary to consider how media, like FM radio (as well as more effective use of traditional print media) can be marshalled in support of new extension modalities. The arrival of new information and communication technologies (ICTs) has reduced the cost of information transfer and is likely to continue to do so. Garforth et al. (2003) suggest that farmers in developed countries are using them increasingly for specific tasks such as business planning.

However, harnessing these technologies for resource poor farmers in developing countries is not straightforward and institutional arrangements are likely to be as important as technical and investment concerns for improving extension services. It could be that a focus on improving the dissemination of under-utilised information generated by public research through the imaginative use of ICTs would be a useful strategy for the retained subsidised public extension service (Chapman and Slaymaker, 2002).

There are a number of agribusinesses using ICTs to strengthen their competitive advantage whilst improving the information that farmers receive as producers (for processing and export companies) or clients (for input suppliers). The Indian Tobacco Company (ITC) has established 1200 village information kiosks (*e-chaupals)* that place computer terminals in villages. They cover a range of crop advice for over 750,000 farmers in four states. Farmers receive information in the local language through the company website on farming

techniques and other services such as district-level forecasts from the state Department of Meteorology. Farmers can send queries by email, access inputs and services from partner organisations and verify the price at ITC's procurement centres (Sulaiman, 2003).

Public sector information and communication infrastructure already exists in the form of mass media networks in many countries. The relevance of extension information can also be affected by the language and culturally appropriate methods of dissemination. Vernacular radio dramas performed by local groups are one example of how information can be adapted to make it more context specific whilst at the same time maximizing its dissemination (Farrington, 1994; Chapman et al., 2003).

Both new and old ICTs can be harnessed in this way and can be integrated to improve the decentralised production of information materials. Printed materials, for example, can offer more practical and directly relevant information advice if farmers are encouraged to describe their own experiences in terms that other farmers are likely to understand (Padre et al., 2003).

There is also the problem that any private extension system will naturally tend to concentrate on those issues that have the highest immediate payoff to farmers. The limited experience to date indicates that farmers participating in private extension express much lower demand for long-term environmental management issues. This has traditionally been an area of concern (although not necessarily of accomplishment) for public extension. It is important to understand how to structure the incentives of private extension systems towards

environmental concerns. Many of the environmental policies have alienated the farmers sufficiently to prevent them from attempting to achieve standards perceived to be unrealistic.

On the other hand, the small focussed study groups of the pilot study in the Netherlands case have proved popular since their inception in 2001. This has proved more successful at encouraging farmers to tackle the problems associated with nitrogen runoff management, drinking water quality and ammonia emission through more holistic integrated farm management (Van Weperen, 2003). The case of support to the viticulture producers in the Douro Valley of Portugal focussed on agro-environmental training and IPM practices. The IPM associations have strengthened their capacity through the programme and more careful use of pesticides and chemicals has been observed amongst the small-scale producers. The contractual arrangements are stringent, requiring farmers to attend courses, conform to IPM rules, use IPM phytopharmaceutical products exclusively, and follow IPM association rules for a minimum of five years. Farmers are requested to document the biological cycle of the crop's pests, conduct periodical risk assessments and damage evaluations, and provide the information to a control agent in a log book (Cristóvão et al., 2002).

Target Clients

The target clients of private extension are also an important issue. Although the demise of public extension may be seen as an abandonment of the

cause of resource poor farmers, that argument requires a specification of how well public extension has served the poor in the past. The term 'private' in agriculture is immediately associated with larger, commercial farmers, and indeed the emergence of many types of private extension bears this out. In this sense, poorer households may not be able to take advantage of privatized extension. In the case of Thuringia (Germany), the proportion of farmers seeking advice fell from 80% to 13% when the extension system was privatized, and the majority of those requesting advice were farms of over 500 ha.

But the discussion has shown that there are also models in which public funding and public policy can structure the incentives that characterise private markets in the service of more equitable agricultural development. This will not be an easy task, however, and it requires broad-based and knowledgeable participation from farmers themselves and adequate monitoring, evaluation and regulation. It is also acknowledged that this will require a significant level of subsidy in those cases where there are many resource-poor farming households who are not able to pay more than a fraction of the actual cost of the service provided. At a time when public extension services are being severely cut (for budgetary reasons), there is a need for devising the most cost effective system possible. In the following paragraphs, some terms associated with alternative forms of private extension are explained.

Commercial Companies

Commercial companies, including farmers' cooperatives, try to make a profit through trade. They will invest in extension only if they are convinced that

this will promote their trade. It is usually in the interests of both the company and their customers that their products are used well. For example, a pesticide will not work if it is used on the wrong disease or applied at the wrong time. A farmer who uses a pesticide incorrectly may advise his or her colleagues against the pesticide, thus decreasing the sales of the pesticide company. It is therefore in the interest of the company to teach its customers how to use their products properly.

In the long term, a cooperative or commercial company will only make a profit if it is able to respond to the needs of the market. This may make it necessary to teach farmers how to produce the products for which there is a market demand. For instance, the Tamil Nadu Milk Producers' Federation, an Indian cooperative, saw that with increasing prosperity a market developed for dairy products with a higher value. Since it was only possible to produce high-value dairy products from clean milk, the Tamil Nadu Milk Producers' Federation taught farmers in some villages how to produce clean milk, for which the Federation paid a better price. This extension campaign has been quite profitable both for the farmers in these villages and for the Federation (Ambalavanan, 1999).

For a long time farmers have produced mainly bulk products. In other branches of the economy brands have been developed through which producers try to present the image that their particular product is of better quality than that of their competitors and therefore worth a higher price. A similar development is now evolving in food production, particularly for niche markets such as organic produce. In order to be able to guarantee the quality of such produce, the marketing company aims to control the whole chain from the producer to

consumer, because at each link in this chain something could happen to reduce the quality of the product.

In commercially-oriented agricultural production, it is in the interest of both banks and some commercial companies, that farmers are successful. The probability that a farmer is able to repay a loan from a bank depends on whether or not the loan has been invested for a good return without too much risk. Many banks have realised that it is profitable for them to advise their clients on investment decisions and sometimes also on other aspects of farm management.

It can also be in the interest of input supply companies for their customers to have good earnings. In industrial countries many farmers will have to stop farming in the next decade because agriculture is no longer profitable. For example a particular input supply company wants a smaller proportion of its customers to stop farming than that of its competitors. This could make it profitable for such a company to teach its customers how to increase their income, e.g. by producing the kind and quality of products for which there is a good market. But commercial companies will only give their customers advice on a small proportion of the decisions farmers have to make because it is not profitable for them to advise on the other decisions (Schwartz, 1994).

Farmers' Associations

Large and influential farmers' associations perform two main roles: (i) they try to influence collective decisions by the government and others in such a

way that the interests of their members are taken into account; and (ii) they support their members in fields for which they have specialised knowledge. For example, a farmers' association may represent its members in a conflict with the government over land use regulations or tax assessment. Government decisions are increasingly taken at a distance from farmers, for example in the World Trade Organisation. It is difficult to show farmers that it is profitable for them to be a member of an association which is in turn a member of an organisation, which is itself a member of an organisation representing them at these top-level decisions making bodies. For the survival of the farmers' association it is therefore important to show the farmers that it pays to be a member; which is achieved by providing individual assistance to members, i.e. through performing the second role. Such assistance can be provided through extension, but the farmers' association should find a niche in the agricultural knowledge and information system where it has a competitive advantage over other actors. This will not be the same niche in all countries.

In Denmark, for example, farmers' associations have long played an important role in providing advice on production technologies (Albrecht, 1954). Farmers' associations in the Netherlands, in contrast, have given much attention to advice on contracts for the transfer of the farm to the next generation. In recent years, however, the advisory service of the Dutch farmers' associations has developed into competing consulting firms, such as the privatised former government extension service DLV.

Associations of producers of a certain crop or animal can play a useful role in giving technical and economic advice to their members. Advisers of a general extension organisation, e.g. a department of the Ministry of Agriculture, may lack the specialised knowledge to give good advice for a particular branch of agriculture. We see this for instance in an association of grape growers in India. Farmers' associations cannot only play a useful role by employing extension agents but also put pressure on research and extension organisations to work in a more demand-driven and client-oriented way (Collion & Rondot, 1998). One difficulty, however, might be that the farmers representing the association are themselves relatively well educated and resource rich and may not fully understand the problems of resource-poor farmers with a low level of education (Likert & Lippitt, 1953).

Consultancy and Accounting Firms

Consultants who advise farmers for a fee have existed in many countries for a long time. They have been able to compete with the free advice given by government extension services because they visited their customers more frequently, providing services which an educational agency could not provide (e.g. as a pest scout) and they had more specialised knowledge of specific farming systems. This last point has become more important with the increasing specialisation among farmers; to some extent private veterinarians have also been working in this way. With the privatisation of government extension organisations the market for consultancy services has increased rapidly. In several countries the government extension organisation has been transformed

into a commercial consultancy firm. The transformation required a change in attitudes of the staff members, but not everyone was able to make this change.

In the Netherlands more than 60 per cent of the extension agents had to be replaced, mainly because they could not make enough profit for their firm (Duijsings, 1998). Having worked both as an extension agent and as a consultant, Bell (1998) made an interesting analysis of the differences between extension and consultancy: 'extension is a process, hopefully, to successful development and change in a farming community', whereas 'consultancy is a business activity providing services in the market place'. Consultancy firms do business in the field of agriculture because they see a possibility to make a profit by advising farmers on particular issues. Farmers are most willing to pay for a tailor-made service, e.g. to help them to make decisions regarding investments and other issues for which they have limited experience.

Large farmers are better able to pay the necessary consultancy fee than small farmers. Consultancy firms may also enter areas related to agriculture, particularly if they see possibilities for profit: a consultancy firm may advise a municipality on the maintenance of city parks, for example. It may also expand its operations to other countries: the former Dutch government extension service, DLV, now works in over 30 countries, helping farmers to compete with Dutch farmers.

Many former government extension services which have been privatized can only make a profit if they have a contract with the government to do extension work on problems which the government considers important, e.g. the

reduction in the use of agrochemicals. In several Central European countries the governments give farmers a voucher which they can use to pay part of the costs of private extension services. In Hungary the introduction of these vouchers has resulted in the establishment of a large number of small consultancy firms, but only those firms which are certified by the Ministry of Agriculture will be paid by the government for the vouchers they receive from farmers. To receive such certification the staff of these firms have to participate in training courses taught by researchers or staff members of universities to ensure that they are able to do their job well (Kozari, 1999). In countries where farmers have to pay income tax, the accountants who prepare tax declarations have also entered into consultancy since they keep records which can be used for making better farm management decisions. Such firms also prepare the business plans required by a bank before honouring a loan application.

Non-Governmental Organisations (NGO)

It is difficult to generalise about NGOs because they display a wide range of variation in their aims and motivations. An NGO can be a church-related organisation which for religious reasons aims to improve the welfare of poor people. It can also be a group of entrepreneurs who earn their living by distributing grants from the government or from foreign donors to poor people. Another NGO might consist of a group of individuals who for political reasons want to increase the power of low status people in order for them to be able to influence their own future.

The Indian Ministry of Rural Development often uses NGOs because it found that NGOs are better able than government agencies to work with poor people from the lower castes. An important goal of the Indian development policy is to decrease poverty and to help low caste people to organise themselves in such a way that they can better influence their own future. For this purpose the Ministry might contract an NGO to achieve specified changes, e.g. to introduce crossbred cows into a region with the additional condition that more than half of these cows should be with families who are classified as poor. A problem with this approach is that the most important changes are also the most difficult to measure. For example it is easier to measure who has a cow than who manages this animal well.

Another reason why extension services might be provided through NGOs and not through Ministry civil servants is to avoid working through an inefficient government bureaucracy. Compared to government extension agents, NGO staff are also often better trained to support group formation among farmers. These groups can play an important role in agricultural development. On the other hand, staff members of several NGOs lack the technical competence needed to advise farmers on how they can increase their productivity. The roles that NGOs can play in agricultural development have been analysed in detail by Farrington (1997).

Funding Debates

Funding tends to be the focus of the debates on privatized extension. The impact of funding on the management of privatized extension has been discussed in terms of the different approaches that service providers and farmers can be expected to use under different funding mechanisms. Many of the experiences with privatized extension rely on a significant level of public sector funding. In the UK, where more complete privatization has taken place, the relative percentage would be expected to be small. In other countries such as Chile and Uganda, with partial privatization, the public sector contribution is likely to be much higher. The underlying factor of concern for many developing countries with less dynamic agricultural sectors is that the level of public sector funding will most likely continue to be a high proportion of the total.

Withdrawal of public funding, therefore, needs to be carefully managed to avoid the sudden decline in farmers' access to the service. Even with relatively modest targets the process may take a long time; for example farmer contribution in Chile is now only 10–15% after 25 years. Contracting directly with service providers remains an option even for those governments that have privatised completely, such as the UK which may request ADAS or another competing private organisation to provide certain advice based on public sector policy. Obligations for financing from the international community can be determined in relation to the level of 'global' public goods in the extension programme (Katz, 2002).

Donor funding, however, has historically exhibited significant variability over years and between regions, contributing to instability in planning and

discontinuities in extension programmes. A review of World Bank lending for extension between 1981 and 2000 illustrates this variability (Alex et al., 2002). Governments and donors undertaking extension reform need to consider not only the need for some degree of absolute public support for services but also the strategic impact of changes in funding over time. Phasing privatization can assist in the process of institutional reform of the national extension service provider, for example, during the transition phase.

In the Netherlands, for example, the extension service (renamed DLV) was officially privatized in 1990 but funding continued for five years albeit with a diminishing subsidy (10% per year). From 1996 to 2000, competition for the government subsidy was limited to the DLV and the national farmers association (LTO). The two organisations were allocated funds according to project proposals submitted in response to the annual plan of the Ministry of Agriculture.

This process ensured that these service providers were able to rely on the public subsidy for part of their costs while adjusting to supply a private sector market for their services over an extended period of time (Proost and Duijsings, 2002).

Summary

In more recent times, extension has become partially or fully privatised in a number of countries such as Costa Rica, Israel and England (Qamar, 2002), and as such, the term extension therefore, can no longer be viewed entirely from a paternalistic perspective, because as privatised institutions, their services are demanded by farmers themselves. Even in less developed countries where

persuasive extension is pervasive, past experience has shown that the notion of transfer (teacher to student) of technologies has often not worked. Rather, technologies have been imposed on clients (Leeuwis & van den Ban, 2004).

Thus, the term extension as used in the extension literature is ambiguous and falls short of the present reality. Agricultural extension needs to adapt to global changes which have resulted in the downsizing of government's budget support to extension activities. Privatisation of extension is supposed to provide a more efficient and cost-effective service to farmers. However, its implementation has been found to be problematic if not carefully assessed and monitored.

Private extension alternatives have been debated and developed precisely because of concerns with the poor performance of much of public extension, including its inability to consistently deliver useful information to resource-poor farmers. Privatization in the case of agricultural extension implies a long-term transition to more responsive forms of information delivery which will require significant public funding for the foreseeable future. This review has yielded rich information on the nuances of privatised extension which will be harnessed in subsequent chapters.

Conceptual Framework

This section presents a conceptual framework 'the Stakeholders' Perception of Private Sector Participation in Agricultural Extension Delivery Process in the Hohoe District of the Volta Region' (Fig 1) which directed the study on stakeholders' perception of private sector participation in agricultural extension delivery process in the Hohoe District of the Volta Region. The four

cardinal pillars underlying the framework are stakeholders, perception, agricultural extension delivery process and agricultural development. For agricultural development to occur, stakeholders irrespective of their perceptions must access agricultural extension delivery services. This agricultural extension delivery services can be 'public' or 'private'.

Within the context of this study I propose a multi-institutional network of knowledge and information support for rural people. This is a synergistic relationship that incorporates the good tenets of both public and private mode of agricultural extension service delivery. It is also a situation where stakeholders' ability to see and do their farming and agricultural development work differently. Challenged by the learning process to construct, test and restructure knowledge with regard to their vocations, stakeholders are able to form or develop mental frameworks that enabled them to take some new but deliberate actions, to improve their practices to solve their own problems.

The improvement in the capacity of stakeholders to take informed decisions and actions appear to be consistent with dee Zeeuw's (1992) concept of improvement in 'collective competence' or improved understanding and decision-making through learning. I therefore see the improvement in the situation as a relationship between enhanced knowledge generated (provision of extension services either by public or private), improved understanding got, improvement in decision-making ability and actions taken by stakeholders.

The stakeholders in this study were the MOFA, Farmers, Input Dealers and other institutions involved in agricultural extension delivery services. How

do these stakeholders impact one another? The farmer expects support from MOFA in her day to day farming activities. The support is defined in terms of information, improved technologies, inputs and market information. The farmer expects this support free from MOFA with the explanation that it is MOFA's responsibility towards them.

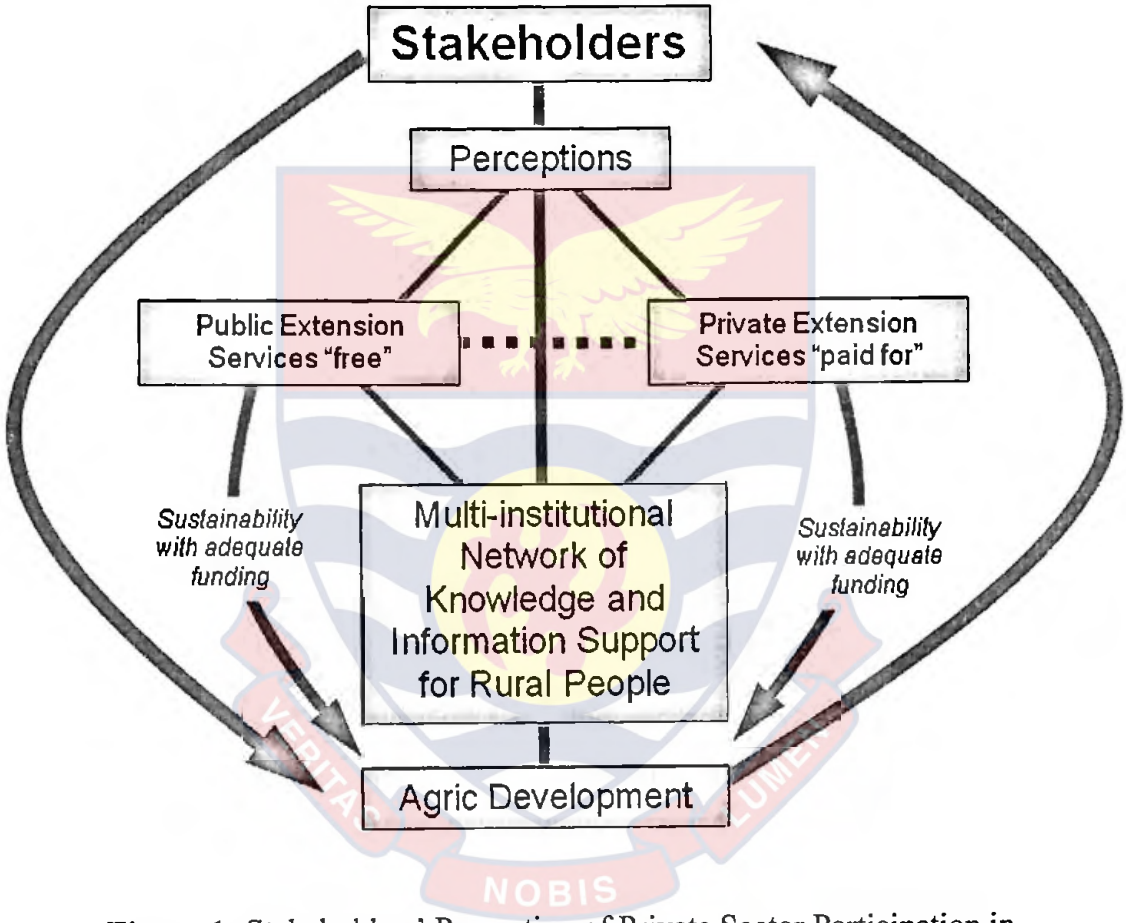

Figure 1: Stakeholders' Perception of Private Sector Participation in Agricultural Extension Delivery Process in the Hohoe District of the Volta Region

Source: Author's Construct, 2009

The agriculture sector also has direct impact on the attainment of at least five of the Millennium Development Goals (MDGs) (MOFA, 2010). Significant improvements in the productivity of the agriculture sector are required to raise the average real incomes of Ghanaians as a whole. The conceptual framework shows that stakeholders are seeking for agricultural development. Agricultural development can result in poverty reduction and sustainable livelihood. The vehicle that can help in achieving agricultural development is agricultural extension delivery process.

The MOFA has traditionally provided 'public good' agricultural extension delivery services (DAES, 2001). This is identified as Public Extension Services in the framework. It is defined as a service that has adequate annual budget; responsible for all extension activities; content of the service is based either on the goals of government policy or research findings considered important for farmers by outsiders (Duijsings, 1998).

According to the Food and Agriculture Sector Development Policy (FASDEP II), 2007, the MOFA is encouraging the participation of the private sector in the delivery of agricultural extension services. Additionally, declining budget allocation to all sectors of the economy has set the stage for a concerted effort to ensure participation of all stakeholders in the growth and sustainability of the Ghanaian economy. The framework identifies this initiative of private participation as Private Extension Service. It is defined as new financing mechanisms defined in terms of actors involved, flow of funds and services; conditions for use of funds; and empowerment of users (Garforth, 2002).

The question that arises is how do stakeholders achieve poverty reduction and ultimately sustainable livelihood. The framework suggests a multi-institutional network of knowledge and information support for rural people. The multi-institutional network of knowledge and information support for rural people is the public-private collaborations/partnerships. It appears to be the way forward in facilitating opportunities to provide services to the poor farmers, while linking them to viable market opportunities. It is also described as pluralistic form of agricultural extension service delivery.

Pluralistic form of agricultural extension seems to be the way forward in designing an extension system which is sustainable, instead of its being monolithic. Studies from Mozambique, (Gemo et al., 2005) illustrate the diversity of sources including many private-sector based from which farmers obtain information services and the need to consider varied approaches to delivery of those services.

To adequately respond to the complex needs of various resource poor farmers, extension service providers will need public sector programme managers and field advisers with greatly enhanced competencies to plan and provide services using facilitation and problem-solving approaches with farmers in the context of wider community needs. These more responsive and accountable approaches foster gradual emergence of stronger, more self-reliant local small-holder farming organizations (Marsh & Pannell, 2002). This constitutes a significant shift from the traditional paradigm of technical expertise required for direct farming practices alone to the broader competencies needed for effective

responses to the new social challenges faced by extension personnel. The competencies for social extension are principally in (a) the practice of participatory extension approaches and (b) local farmer organization development. Development and provision of extension personnel with those competencies are crucial to helping organize smallholder farmers and helping them to articulate demand for the services they need (Rivera and Alex, 2004). What emerges from the UK experience in the privatisation of extension services is a clear distinction between demand-driven advisory services that farmers can buy from the private sector and supply-driven initiatives through which government wishes to influence resource or land and other natural resource management decisions in the interest of its own policies.

Where there exists a wide diversity in the scope and range of private services available to farmers there is the general contention that farmers will have to spend a lot of time trying to source relevant information from a plethora of organizations some with perhaps overlapping functions and responsibilities. This will necessitate some streamlining of procedures, roles, and responsibilities of such private extension providers by the government. This is one instance in which a government interferes in the private extension conundrum for the public good. To be able to promote the multi-institutional network of knowledge and information, the perception of stakeholders will guide policy and subsequently help generate implementable plans that will result in sustainable livelihood of farmers.

CHAPTER THREE

METHODOLOGY

Introduction

The chapter commences with a description of the study area. It follows with the description of how a pilot non-public sector participation in agricultural extension delivery under the Agricultural Services Sub-sector Investment Programme (AgSSIP) was operated between May 2006 and December 2006. Next is a description of the methodology used in the study. It also examines some methods used in privatization of agriculture extension services and provides a justification for the choice of methods used. Finally, the chapter provides details of methods that were used in the actual data collection for this study and some ethical issues that were considered.

Study Area

Hohoe District is one of the 170 administrative districts of Ghana and one of the 18 in the Volta Region. The district covers an area of 1172 square kilometres (117,200 ha), which is 5.6% of the regional size and represents 0.5% of the national land area. The district is located within longitude 0° 15 E and 0° 45 E and Latitude 6° 45 N and 7° 15 N at the heart of the Volta Region. It shares common borders with the Republic of Togo on the east, south-east with the Ho District, on the south-west

with the Kpando District and in the north with the Jasikan District, (see Map 2 on page 265).

Major Landforms and Drainage

The District houses part of the Akwapim-Togo Ranges extending beyond the country's eastern boundary all the way to Western Nigeria. This Range is at the eastern part of the Voltaian Basin, aligning on the Southwest and Northeast axis. Within this Range is the Afadjato, the highest elevation in Ghana (880.3m). A number of highlands include Avegbadze (858.2m), Asoglo (745.5M), Agumasato (834.9m) Akpadafe (762) and Agumale (757.6m). The Akpafu Range, an outgrowth of the Akwapim-Togo Ranges lies north of the district and rises to a peak at the Akpafu Odomi area. A notable peak in the Akpafu Range named Mlabo is 773m above sea level. The Akpafu Range is believed to have iron deposits. However, their commercial viability has not been explored to support the local iron foundry industry which is now almost extinct.

River Danyi (a perennial water source) takes its source from the Akpafu Range and drains the whole district covering the only low-lying portion of the district between the Akwapin-Togo Range and the bit bordering the Volta-Lake and extending to the Detu highland in the south of the district. River Danyi enters the Volta-lake in the Kpando district. Some other important rivers which drain into the Danyi river are Koloe, Agumatsa, Tsatsadu and Aflabo. These rivers make small scale irrigation possible especially in the dry season for the cultivation of vegetables.

Some of the low-lying areas have swamps that are used for rice cultivation. The main ones include Akpafu Odomi, Akpafu Mempeasem, Santrokofi and Godenu

areas. There are however, other low-lying areas for small scale rice cultivation scattered throughout the district.

Rainfall

The annual rainfall total ranges between 1100mm and 1500mm, averaging 1300mm. The rainfall pattern is bimodal with two distinct rainy seasons. The major rains start from April through to July, while the minor season covers the period from September through November. Occasionally, the District bimodal pattern gives way to continuous rain from April through to November. On the average, the major season receives about 43 percent of the total annual rainfall as compared to about 40 percent for the minor season. Comparative figures however, establish a greater reliability of the rain both in quantity and distribution during the minor season than the major season. Rainfall distribution is shown in Figure 2.

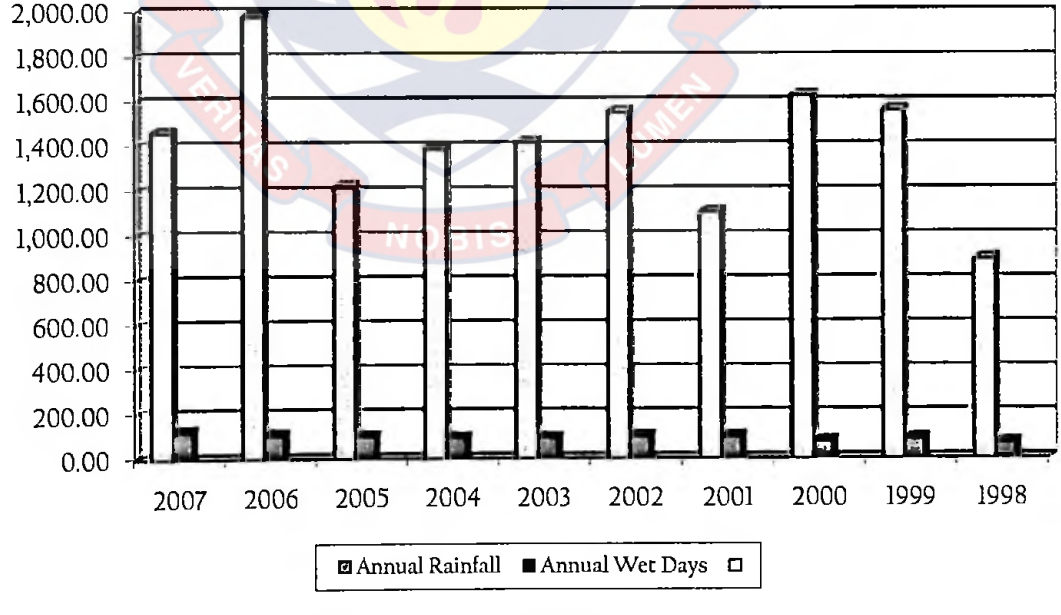

Figure 2: Annual Rainfall and Wet Days in Hohoe (1998-2007)
Source: Weather Station at Hohoe E.P. Secondary School Campus, Hohoe, 2005

Natural Vegetation and Soils

Generally, the northern and eastern portions of the district covering Akpafu, Likpe, Leklebi and all areas along the eastern highlands receive total rainfalls above the district average. These areas support the growth of tree crops including cocoa and oil palm. The south-western areas bordering the Kpandu District are relatively drier with extensive savanna vegetation which is generally suitable for cultivation of vegetables and livestock production. The District falls within the Forest-Savanna transitional ecological zone of Ghana, with the forest part at its southern and eastern sectors and tapering into the middle of the District. The vegetation of the transitional zone is considered to have developed from the forest. The eastern highlands are clothed with high forest. Of course the activities of man have almost devastated most of the forest. Apart from the Alavanyo area, which is also forested, most of the western plains are occupied by woodland savanna and tall trees. The soils generally tend to be sandy overlying iron pans. Bottomlands carry heavy silts and cracking clays. As a consequence, drainage is very poor, subjecting the area to extreme variations in soil moisture.

The soils – ochrosols and oxysols – of the forest zone have the capacity for greater accumulation of organic matter in the surface horizon. They also exhibit a greater depth and degree of weathering and acidity as compared to its savanna portions. There are four (4) soil groups in the District with the forest ochrosols and their interior savanna types – ground water laterite–ochrosols integrates being the major components. The other components are forest zone types namely forest ochrosols–oxysol intergrades, interlacing the forest hiltosols strips along the eastern

border with the Republic of Togo. The advantage of the soil groups is that both savanna and forest crops do well in the District. Some of these crops are Cocoa, Coffee, Oil palm, Banana, Plantains, Rice, Cassava, Yams, Maize, Groundnut, Mango, Pineapple and Papaya. The torrential nature of rains greatly leaches the soil nutrients. This is compounded by the fact that the vegetation cover is removed before crops are cultivated. Most of the organic matter (vegetation) is also burnt annually through bush fires. This further exposes the soil to erosion and leaching. Soil fertility has gradually become a serious problem and large doses of chemical fertilizers have to be applied to realize economic yields.

Out of the 117,200 ha of land area of the District, about 55,000ha (47%) are suitable for crop production and about 10,000 ha, (8.5%) as pasture land. The extension of the eastern highlands account mainly for the high percentage (44.5%) of land deemed unsuitable for agricultural purposes. Crop production lands are evenly distributed in the District. It is made up of forest areas of Akpafu, Likpe, Lolobi, Gbledi, Leklebi, Nyagbo and Logba. The savannah lands cover Ve, Tafi, Have and Kpeve areas. The vast savanna plain stretching from Tafi Atome through Have to Kpeve Tornu is suitable for livestock production, especially for cattle ranching.

Population

The 2000 population figure for the district is 144,502 with an annual growth rate of 1.9%. The breakdown is as follows: male 70,674 (48.9%); female 73,545 (50.9%). The district has 21 paramount chiefs with 12 area councils and 1 urban council. The population of the Area and Urban councils is presented in Table 1.

Table 1: The main traditional areas and urban councils in the District with their estimated populations and percentages.

Area/Urban Council	Male	Female	Total	%
Likpe	8245	8227	16472	11.96
Leklebi	2262	2253	4515	3.27
Have/Nyagbo	4404	4679	9083	6.59
Lolobi	2180	2250	4430	3.21
Hohoe Urban	9874	10535	20409	14.82
Liati/Afadzato	3375	3466	6841	4.96
Ve	6894	7177	14071	10.21
Gbi South	4508	4659	9167	6.65
Logba/Tafi	5578	5607	11185	8.12
Akapfu /Santrokofi	5023	5242	10265	7.40
Agumatsa	6085	6189	12274	8.91
Weto	4614	4623	9237	6.70
Alavanyo	4735	4979	9714	7.05
Total	67,797	69,886	137,683	100.00

Source: Hohoe District Assembly, 2005

The major ethnic groups in the district are Ewes, Akpafu, Lolobi, Santrokofi, Likpe, Logba, Tafi and Nyagbo. The ethnic groups are shown in Table 2.

Table 2: The Ethnic groups in the Hohoe District

Ethnic Group	Language Spoken	1995		2000	
		Population	%	Population	%
Ewe	Ewe	95,497	66.50	104,664	66.00
Akpafu (Kawu)	Siwu	8,158	5.70	8,964	5.70
Lolobi	Siwu	7,100	4.90	7,815	4.90
Santrokofi	Sele	4,687	3.30	5,851	3.70
Likpe (Bakpele)	Sekpele	14,286	9.90	15,699	9.90
Logba	Ikpana	6,727	4.70	7,334	4.60
Tafi	Tegbor	3,629	2.50	4,212	2.70
Nyagbo	Tetrugbu	3,582	2.50	3,938	2.50
	Total	143,666	100.00	158,477	100.00

Source: Hohoe District Assembly, 2005

Available agricultural land and tenure system

Land tenure system in most parts of the district is by family/clan or individual ownership. A family/clan land is held in trust for and on behalf of the family/clan by the family/clan head. Such land passes from one generation to another. Members of the family/clan have title to portions of the land for agricultural production (and for building) as of right. Individuals or groups of individuals of the family/clan may not however dispose of such portions of the land without the consent and concurrence of the family head and other members of the family/clan. Family/clan lands may be rented, leased or sold to strangers for agricultural purposes by negotiations with the family/clan head and other members of the family/clan. Individuals may own land through inheritance, as gift or by outright purchases from an individual or family/clan. Individual lands may be rented, leased or sold to strangers for agricultural or other purposes through negotiations with the individual owners.

Agriculture in the District

The climate and soils support varieties of crops and livestock. Crop production includes food and cash crops. The livestock include small ruminants (sheep and goats) poultry, piggery and cattle on a small scale. Fish farming or acqua-culture is carried out mostly in the central portions of the District around Logba, Ve, Hohoe and Santrokofi. Local vegetables namely okro, tomato and garden eggs are cultivated extensively mostly in the Ve, Logba and Nyagbo areas of the district. Food crops are produced mainly by peasant farmers using simple hand tools. The average land holding per farmer is about 0.5 ha. Apart from rice and cassava, most farmers to some extent practice mixed crop farming. There is a decreasing level use of inorganic fertilizers. Yields are gradually decreasing due to increasing costs of farm inputs and low soil fertility. Farmer's incomes are low because of the low yields from their farms. The major food crops cultivated in the district are maize, cassava, rice, plantain, cocoyam and yams. Table 3 shows this distribution.

Table 3: Major Food Crop Producing Areas in the Hohoe District

Crop	Major Producing Areas
Maize	Fodome, Liati, Gbledi, Ve, Wli, Alavanyo
Cassava	Fodome, Ve, Alavanyo, Nyagbo, Tafi, Akpafi
Rice	Akpafu, Santrokofi, Lolobi, Likpe, Godenu.
Yam	Ve, Alavanyo, Tafi, Nyagbo
Plantain	Alavanyo, Likpe, Akpafu, Logba, Lolobi
Vegetables	All over the District
Fruits	Nyagbo, Logba, Lolobi , Likpe, Tafi, Ve, Lia

Source: Hohoe District Assembly, 2005

The main non-traditional crops cultivated in the District include mango and cashew.

The Hohoe District is essentially an agricultural one. The agricultural potential of the District coupled with its infrastructure makes it ideal to test an agricultural extension reform programme. It is within this context that the study was carried out. To take advantage of the emerging development in extension, the DAES is collaborating with private extension service providers under the Extension Development Fund (EDF)/private extension pilot project.

The EDF/Private Extension Pilot Project

Against the back ground that the public sector has remained the largest provider of agricultural extension services since its inception, a pilot non-public sector participation in extension delivery under the Agricultural Services Sub-sector Investment Programme (AgSSIP) was operated between May 2006 and December 2006. This pilot private extension programme was designed to access the possibility of private sector participation in agricultural extension service provision in the face of dwindling donor funding and government's budgetary allocations which, have been the backbone of national extension programmes in Ghana. This shortfall in funding meant that extension services had to operate with reduced coverage of services to farmers. Consequently, there were a large number of farmers who do not receive any extension services at all.

Under the pilot project, the AgSSIP established the Extension Development Fund (EDF) to fund activities that will foster experiential learning processes and foster the self-confidence and local leadership necessary for the establishment of a privatised extension service. The EDF was proposed to be a three-year project, but

due to its late start the pilot project could ran for only a six month period. In sum, the specific objectives of the EDF project were:

i. Enable MOFA prioritize and re-orient the delivery of public-good extension through the use of Private Service Providers on a pilot basis, and

ii. to enable MOFA learn lessons that will inform further extension policy directions in the medium to long term.

The EDF project was therefore implemented with a view to learning some lessons, which could be used to influence future policies and strategies on private extension. Broadly, the EDF was expected to achieve the following expectations/results at the end of the pilot phase:

i. Conduct Baseline studies to create awareness of the EDF among beneficiary communities
ii. Form (297 groups and 8,300 farmers) farmer groups and reach these farmers with relevant technologies, that is, good and improved agricultural practices
iii. Discuss issues of HIV/AIDS and Environmental Management in all the beneficiary communities.
iv. Train (241) Community Extension Volunteers (CEVs) in all the beneficiary communities
v. Train Farmer Group Leaders in good leadership and management skills.
vi. Service Providers to develop monitoring and evaluation plans to be used by their Field Staff.
vii. That the EDF Secretariat organises Orientation workshops and Review meetings for stakeholders of the program.

Management of the Extension Development Fund

Two management entities were established to implement the pilot project. These were the FBO/EDF Secretariat and the District Steering Committees (DSC). The FBO/EDF Secretariat at MoFA – DAES based at the DAES Head office in Accra, was responsible for the coordination and implementation of the project in all 8 pilot districts. The Secretariat organized an orientation workshop for stakeholders of the EDF project on the general management of the project, expected outputs, and activities to be carried out at the inception of the project. The Secretariat received periodic reports from the implementing districts and Service Providers (SPs) and, upon satisfactory performance, recommended payment on behalf of the Service Providers from AgSSIP. The FBO/EDF Secretariat also undertook some monitoring visits to the EDF pilot districts.

To ensure that the pilot districts had ownership of the project, a District Steering Committee (DSC) was instituted. The membership of the DSCs which also implemented the Farmer-Based Organizations Development Fund (FBODF) was made up of the District Director of Agriculture, District Extension Officer, the District Co-operative Officer and some Farmers' Representatives. The DSC was responsible for the day-to-day management of the project in the respective districts. Furthermore, the DSCs furnished the FBO/EDF Secretariat with periodic reports on the performance of the Service Providers and made recommendations on activities carried out by them. The DSCs where necessary, requested Service Providers to undertake specific interventions that would help beneficiaries attain higher productivity levels.

Implementation of the Pilot Extension Project

Because of the innovativeness of the EDF project, efforts were made to ensure that the project had a common base in order to allow for future evaluation of this attempt at privatisation of extension delivery. Subsequently, implementation of the EDF was carried out in two phases as follows: (a) pre-implementation and (b) implementation. Under the pre-implementation phase of the EDF project, four major activities were carried out; selection of Service Providers (SPs), Baseline Survey carried out by SPs, Recruitment and training of Extension Agents, Needs Assessment and development of Implementation strategies.

Selection of Service Providers

Four private Service Providers were contracted through competitive public tendering to deliver extension services in eight districts as shown in Table 4:

Table 4: Service Providers and their assigned Pilot Districts

District	Service Provider
1. Suhum Kraboa Coaltar District	ADRA - Ghana
2. Kwahu South	ADRA - Ghana
3. Jirapa Lambussie	ADRA - Ghana
4. Assin North	TREND
5. Adansi South	TREND
6. Garu Timpane	Presbyterian Agric Station
7. Bawku East	Presbyterian Agric Station
8. Hohoe	CRAN

Source: Field Notes, 2009

There was the need to recruit the service providers before the entire project could commence.

Terms of Reference for the Service Providers

The following specific tasks were expected to be carried out under the TOR for the Service Provider:

i. Apply sound professional practices and methods, and make use of necessary research information in carrying out assignment,

ii. Work in collaboration with DSC and the Department of Agriculture in the district where they operate,

iii. Engage qualified staff to deliver agricultural extension services to identified beneficiaries (farmer groups and individual farmers in designated areas),

iv. Train beneficiaries to improve their productivity and increase income through assisting them with the identification of their agricultural production constraints and needs and planning short and medium term activities to meet such needs and overcome the constraints,

v. Advise and provide technical as well as general information to support production, processing and marketing of commodities to be selected by farmers,

vi. Advise farmers on farm management skills (e.g. planning and basic record keeping),

vii. Undertake field demonstrations in collaboration with farmers,

viii. Address issues of environmentally friendly practices, HIV/AIDS, gender and other relevant emerging issues in their area of operation, and

ix. Form sustainable farmer groups/FBOs and build the capacity of existing farmer groups with the support of DAES and DOC under the FBO component of AgSSIP.

In order to fulfill the above-mentioned TOR, SPs were expected to specifically:

i. Restructure existing farmer groups and other associations so as to groom them into formidable farmer-based organizations (FBOs),

ii. Transfer appropriate technologies in the area of good agricultural practices, production and agro-processing for value-addition to these FBOs,

iii. Build Linkages among the FBOs, groups and other stakeholders,

iv. Impart environmental conservation and improvement techniques to FBOs,

v. Build on individual capacities in entrepreneurial planning, development and management,

vi. Fishing out for appropriate markets for farmers' products upon maturity,

vii. Identify early-yielding and early-maturing crops and their soil compatibilities, and

viii. Identify and train Community Extension Volunteers (CEV).

Baseline Survey by Service Providers

Baseline surveys of the EDF project areas were conducted by the Service Providers for each project area with the support of the selected respective pilot District Agriculture Development Unit (DADU). The surveys were intended to give:

- Service Providers an idea of the various agricultural activities being undertaken in the area;

- Service Providers basic agricultural data for future decision-making; introduce staff, supervisors etc. to the beneficiary communities to enhance farmers' co-operation. Sensitize beneficiary communities on the EDF project. The next stage of the process was for the Service Providers to recruit their staff. It is pertinent to note here that some of the Service Providers did not have permanent staff but only recruited staff for the purposes of the consultancies they had gotten to be agricultural extension service providers.

The Service Providers used Participatory Rural Appraisal Methods (PRAM) during the inception of the project to identify general and peculiar problems of the beneficiary communities. Home and field visits were also used by the Service Providers to work on the various threats and weaknesses identified within the communities.

Recruitment and Training of Extension Agents

Each Service Provider recruited and trained a number of extension agents and deployed them to the project areas. To equip the extension agents that the Service Providers had engaged for their respective assignments, each Service Provider organized Training of Trainers Workshops for them. The subject matter included the following: Project information; Group formation and dynamics; Group development and management; Leadership skills; Conflict resolution; Community entry and Facilitation skills. These trained extension project staff were then provided with logistics such as motor cycles, distinctive and identifiable working uniforms and incentive packages.

Exploring further the question of recruitment/retention of competent staff the researcher adds to the debate by arguing that, recruitment refers to the process of attracting, screening, and selecting qualified people for a job at an organization or firm. Clear cut criteria must be set to enable the recruitment process take place. In Ghana, MOFA employs graduates and certificate holders. The certificate holders go through further training and retraining to attain diplomas, degrees and sometimes higher degrees. For extension to respond to the needs of her clientele a joint needs assessment has to be carried out between the extension provider and the beneficiary clientele. At this point, both the extension provider and the beneficiary clientele know what gaps exist. Extension must therefore train and retrain her staff in order to meet the needs of the beneficiary clientele.

The very essence of education or training is to help people change. This can be done at any level, class, group or locale of the individual if the right attitude and methods can be found. A person who only has a desire but does not know how to do the job may be well liked but he will not help people learn; nor can he acquire the satisfaction of real accomplishment if he does not know his subject matter. This is in fact the purpose of his teaching-to teach something. The changes of knowledge or skills he wishes to bring about are the objectives. It is fundamental that a person knows his subject matter or knows how to acquire knowledge in the subject matter.

Extension agents working with adults have a responsibility to work harder at the job of teaching, because they operate under a process of education that is not compulsory but involves voluntary participants. In extension the objective is to bring about change in an individual. This means that in most cases before the new

skill, practice or idea is accepted an old one must be discarded. Thus, the emphasis on motivation of the individual to act must be convincing and once the individual is convinced, he will act. Unless the individual receives satisfaction as a result of his actions, success cannot be claimed. The individual will reject the new and regress to the old idea, skill or practice. In order words, teaching may have taken place, but learning has not. The agents' future is dependent upon the success of the people who have learned, not on how well the agents may feel they have taught.

The question is how do the AEAs in the study area measure up, in terms of the qualities discussed above? Do they have the commitment to help to effect permanent and visible changes in their clientele? The majority (12 out of 16) of the AEAs interacted with, had a list of complains why they could not be effective in their work! Among the complains were lack of logistics, motorcycles, poor accommodation, poor quality schools for their dependents, lack of promotion to higher ranks, limited opportunities to do further studies, and no clearly defined incentives to adequately motivate them to offer their best in their extension duties in their operational areas. Staff retention/turnover is a possible consequence from the sentiments mentioned above by the AEAs. An effective workforce is fundamental to a successful organization. Every organization is different and will therefore have its own levels/reasons for staff turnover. The researcher asked the AEAs to suggest possible ways by which MOFA could ensure an effective workforce. These are some of the issues raised:

- When recruiting, MOFA should ensure that the prospective employee is given a realistic job preview at the recruitment stage. 'Do not raise expectations'

and 'dress things up' when interviewing. The likelihood is that the new employee will be disappointed very quickly and won't stay within the organisation for long.

- Poor development opportunities. This leads to 'laissez-faire' attitudes of staff!
- If they feel secure within their role, they are less likely to feel the need to look elsewhere for employment. Security and stability were greatly valued by most of the AEAs.
- Innovative ways must be found to motivate staff. They intimated that appropriate incentives/rewards be given to deserving staff (who are to a very large extent selected objectively without any possible bias).
- Good communication is vital within any business, they opined. If you communicate regularly with your employees, they are more likely to feel like a true member of the team. Open communication channels such as consultative bodies, performance appraisals, attitude surveys and grievance systems will give the staff the opportunity to raise any issues they may be having and will help to prevent a problem escalating to the point of leaving the business.

Needs Assessment and Development of Strategy

Community needs assessments were carried out and appropriate interventions developed to address the needs by the SPs. Unlike the privatization of enterprises where the transition process can often be driven relatively quickly (18-24 months), reform processes for extension services are much more complex and time-consuming arising from the need for fundamental and transformational changes in the roles, responsibilities, and relationships of all actors. Privatization processes,

like the important parallel processes to reform the roles and capacities of the public sector and its agencies, are long-term ventures (often 5-10 years) for all actors and investors. To have reasonable probabilities of success they have to be conceived and implemented in process and program paradigms and not in short-term project modes that seek prematurely defined destinations and results before actors had been able to complete their journeys of discovery and capacity building.

Christian Rural Aid Network (CRAN) as a Service Provider

The Christian Rural Aid Network (CRAN), Ghana is a rural development organization established in 1993 with its headquarters in Cape Coast, in the Central Region of Ghana. It is registered as an NGO (under the Companies Code 1963, Act 179) with the Registrar General's Department and also with the Department of Social Welfare (Registration Number: DSW/671). CRAN has as its broad aim to promote the socio-economic development of the rural poor and by that working and contributing in a most professional and qualitative manner towards ensuring an improved quality of life for the over 60% of Ghana's population who reside in mainly squalid and economically distressed rural communities. CRAN's work is based on the values of Christian motivation and an obligation towards the development of the individual as a whole. In this regard, it employs and promotes demand-led or self-help strategies towards community development and rural poverty education. The main programme areas are: Education; Vocational training and income generation; Rural and informal sector microfinance; Community infrastructure and service provision and Community organisation and mobilization.

The organizational structure of CRAN is composed of the Board of Trustees; the Executive Management Committee; Project Managers and Field Staff. CRAN has been working in Hohoe District since 1995. The DAES had organized the selection of private extension service providers country-wide through the procurement of a consultant. Four private Service Providers were contracted through competitive public tendering to deliver extension services in 8 districts as shown in Table 4. CRAN happened to be selected as the Case for this study because it was operating in the Hohoe District of the Volta Region. Therefore, by default, when Hohoe District was selected, all extension activities going on in the district was a subject for study and hence CRAN as an example of a private extension service provider. The next section discusses the methodology adopted for this study.

Research Design

The study adopted a combination of quantitative and qualitative research approach to complement each other. A survey design was adopted to provide an understanding relating to the issues of the demography of the study population. To have an in-depth examination of the key factors that can impede or promote private sector involvement in agricultural extension, a case study design was adopted. With the survey, it was possible to generate quantifiable data from a large sample while the latter brought in some flexibility to collect in-depth information from key-informants from CRAN and other stakeholder groups. Integrating quantitative and qualitative research designs provided a holistic view

of agricultural extension service within the context of a wide rural development agenda.

The field work took place in the Hohoe District between September 2009 and December 2009. The research tools used included questionnaires, semi-structured interviews and content analysis. Questionnaires (see Appendix 1) which provided the quantitative dimension, were administered to farmers, input dealers, AEAs and Supervisors of agriculture in the Hohoe municipality. These same respondents were involved in the in-depth interviews and informal discussions about their perceptions on private extension services. The quantitative data was analysed using a statistical package for the social sciences (SPSS) version 16, while the qualitative data was grouped into themes and categories and a response pattern identified.

Overview of Research Methods

A review of the existing literature on agricultural research methods reveals a predominant use of questionnaire and interview based methods for data collection. Bryman (1989:104) defines surveys as:

> *The collection of data on a number of units and usually at a single juncture in time, with a view to collecting systematically a body of quantifiable data in respect of a number of variables which are then examined to discern patterns of association'. The survey can employ the use of interview-based questionnaires or other forms of questionnaires or interviews.*

Social surveys using questionnaires have emerged as one of the most popular approaches to social research. Hall and Hall (1996) see questionnaire based surveys as the most practical and systematic way of collecting statistical data through presenting all participants with questions in a similar manner and recording responses in a methodological way thus exemplifying the scientific approach to data collection. Robson (2002) asserts that surveys are usually carried out as part of a non-experimental quantitative design and argues further that surveys could be used for descriptive, explanatory or emancipatory research but not for exploratory research. Hinds (2000) suggests that a well constructed questionnaire could be used when a researcher needs information from large numbers of participants over a relatively large geographical area, when this information is not complex, if language and literacy will not be a problem, and if the researcher wants to generalize about a particular group or make comparisons with other groups, or use responses for development planning.

Despite its popularity in social research, surveys have come under a barrage of criticisms. Valentine (1997) for instance argues that questionnaires by their very nature are usually standardized and are therefore not tailored to individuals' circumstances. They therefore lack the sensitivity to be able to explore difference, inconsistency and, often meaning and argument. Babbie (1989) finds surveys to be too artificial and what they purport to measure is not social action, while Burton (2000:305) believes that:

surveys are too statistical, reduce interesting questions to incomprehensible numbers, and that methods used to analyze data can leave a lot to be desired.

Questionnaire and interview surveys are methods of collecting data based on quantitative research which, is directly derived from a philosophical approach to research known as positivism or empiricism (Robson, 2002). The main features of positivism as postulated by Bryman, (1988:14) can be summarized as follows:

- A belief that the methods and procedures of the natural science are appropriate and can be applied to social science research;
- Only phenomenon, which are observable or conform to the principles of scientific enquiry, can be validly treated as contributing to knowledge;
- Scientific knowledge can be arrived at through the accumulation of verified facts;
- The researcher needs to be purged of values which may impair objectivity and undermine the validity of knowledge.

Quantitative researchers usually seek to collect large quantifiable data, which they see as reliable and generalizable. This enables them to identify variables and study the effect of one variable on another. This paradigm therefore searches for facts to predict and explain causal relations and associations among key variables of interest. To this end, quantitative research designs are planned from the beginning to ensure a predictable research setting with minimum influence from the researcher, although this is almost difficult to achieve.

Prominent concerns have been raised about the limits of quantitative data and methods often associated with positivism. Cohen *et al.* (2000) believe that the ontological and epistemological assumptions of quantitative research have been the main focus of critics, most of whom are qualitative researchers. Critics argued that positivistic methods strip contexts from meanings in the process of developing quantified measures of phenomena (Guba and Lincoln, 1994). In other words, quantitative measures often exclude members' meanings and interpretations (Social Action) from data, which are collected and impose outsiders' meanings and interpretations on data. According to Burton (2000), quantitative research require statistical samples, which often do not represent specific social groups and therefore do not allow generalization to or understanding of individual cases.

Interpretivism

Positivistic concerns to uncover truths and facts using experimental or survey methods have been challenged by interpretivists who assert that these methods impose a view of the world on subjects rather than capturing, describing and understanding these worldviews. According to Cohen *et al.* (2000), social scientists who support the qualitative research summarise that:

- Social action could only be understood through interpreting the meanings and motives on which it is based. This suggests that social action cannot be clearly understood if it is devoid of context.
- There is a distinction between natural and social science with the natural science dealing with subjects, which have no consciousness and therefore

only react to external stimuli. However, unlike such research subjects, human beings see and interpret the meaning of stimuli and respond to it. Therefore, the methodology and methods appropriate to the natural sciences is inadequate to fully capture the social world.

- Social scientists have to understand and interpret human behaviour and discover meanings individuals attach to the world around them.
- Social researchers therefore have to interact with their subjects in order to explain their behaviour towards phenomena.

According to Robson (2002), within this tradition, there is a rejection of the view that truths about the social world can be established by natural science methods. Qualitative research tends to involve few people or situations because of the preference for in-depth studies and placing subjects in context or from a holistic perspective. Robson (2002:27) notes that:

> *the research participants are seen as 'helping to construct the "reality" with the researchers. In addition, because there are multiple realities, the research questions cannot be fully established in advance of this process.*

This suggests that the research design usually emerges as the investigation is carried out and a key to achieving this is the role of the researcher. According to Denscombe (1998), the quality of qualitative data is dependent on the researcher because the researcher's self (his or her social background, values, identity, and beliefs) will have significant bearing on the nature of the data collected and the interpretation of that data. Qualitative methods have however

been criticized as being unreliable by some researchers because the results are not always quantified and there is no way of replicating and checking the reliability of its findings (Robson, 2002). Miles and Huberman (1994) caution that the issue of possible researcher bias, adequacy of sample, credibility and quality of conclusions and generalisability of findings are real issues in using qualitative methods. Qualitative research methods include case study, ethnography, grounded theory, and phenomenology.

These two approaches to research are based on two main views. On one hand, some authors view quantitative and qualitative methodologies as different epistemological positions providing competing views about the way in which social reality ought to be studied. On the other hand, other authors equate the concepts to different approaches to collecting data, denoting different ways of conducting social investigations, which may be conceived of as being appropriate to different kinds of research questions (Bryman, 1988). Three schools of thought further emerge as a result of the application of these methodologies to social science research. There are those who contend that quantitative methodology is the only scientific and systematic way of carrying out research, those who advocate the qualitative approach, and those who support the view that it is possible to combine both methodologies.

The widely held distinction between qualitative and quantitative research however is that the former uses words or non quantified data while the later generates numerical data (Robson, 2002; Denscombe, 1998). It would appear from above that practitioners of the two research paradigms have opposing views

on understanding social reality, which therefore influence the way research, or in this particular study, social science research is conducted.

Combination of Methods (Triangulation) Approach

Until recently, proponents of the two traditional paradigms (quantitative and qualitative research) held the avowed view that the two were extremely incompatible. Guba and Lincoln (1996) have argued that a call to blend or accommodate the two approaches is logically equivalent to calling for a compromise between the view that the world is flat and the view that the world is round as quoted from Vulliamy et al. (1990:9).

Smith and Heshusios (1986) have also concluded that there is a fundamental incompatibility between the two approaches, while Blaike (1991) argues that it is inappropriate to combine methods based on different theoretical positions. In recent years however, it has become more acceptable to combine quantitative and qualitative research. According to Burton (2000), there is a greater rapprochement between workers in the two traditions than would appear to be the case from studying their philosophical leanings, and hence a greater compatibility of approach in practice.

The main advantage of using multiple research methods (commonly referred to as triangulation) is the reduction of inappropriate certainty (Robson, 2002). In other words, using a single method and finding a clear-cut result may delude the researcher into believing that they have the right answer, whereas using additional methods may point to differing answers, which remove specious certainty. This enhances the validity and reliability of the data collected. Burton

(2000) also notes that qualitative approaches can assist quantitative research in a number of ways. For instance by providing hunches or hypotheses to be tested by the quantitative research, or as a mechanism for validating survey data, interpreting statistical relationships and offering case study illustrations.

Burton (2000) furthermore, suggests that data from quantitative research could help identify individuals for qualitative study in representative and unrepresentative cases. In circumstances when a complex phenomenon requires analysis, when some controversial aspects need investigation, when an established approach provides a limited and perhaps distorted picture, and where the researcher is engaged in case study research triangulation is the best option (Cohen & Manion, 1989). Some researchers however caution that using multiple methods in research may not always provide consistent results. Fielding and Fielding (1986) assert that using multiple methods could actually affect the validity of research findings. Researchers such as Denscombe (1998), Scanlon (2000) and Robson (2002) however conclude that the fine lines between epistemologies have become artificial and do not portray the issues of real world social research and have suggested methodological pluralism where a mixture of quantitative and qualitative methods are used.

A researcher therefore needs to acknowledge the inherent weaknesses in its usage from the onset of the research and develop a general framework to minimize flaws in the research design. This would lead to a better understanding and integration of research findings.

A case study design is one research approach which often combines both qualitative and quantitative methodologies. A case study has been described by Yin (1994) as cited by Robson (2002: 178), as a strategy for doing research, which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence.

Privatisation of agricultural extension service in Ghana depicts such a phenomenon especially in a situation where there has been no systematic investigation or study has been done. Robson (2002) however sees a case study as an approach rather than an individual method and that the central defining characteristic of a case study is concentration on a particular case or small sets of cases studied in their own right. Miles and Huberman (1994) also suggest that a case always occurs in a specified social and physical setting and therefore cannot be studied devoid of these contexts. Hohoe District was chosen as the case for this study.

Stakes (1995) concludes that the most important criterion for choosing a case is to maximize what could be learnt through the case. Therefore, a case should be chosen for theoretical and not statistical reasons and more so selected so that it is typical or representative of other cases. He further suggests that no matter how much effort is put into finding a typical case, it is still difficult to achieve representativeness. In such a situation, the most important guidelines should be the purpose of the study, which should form the basis for the selection of the case. Researchers also need to consider additional important issues such as

time limitations and access. Yin (1989) also recommends that a study might be interested in finding unusual cases, which might help to illustrate phenomenon often overlooked in typical cases such as studying a case for its criticality or the extreme nature of uniqueness. The major interest in the study should therefore guide the selection of the case. In this study the major interest was to determine stakeholders' perception to privatisation of agricultural extension services. This interest was to be explored in an area having categories of farmers some working with private extension staff and others working with regular MOFA staff.

Selection of Specific Design

Case study designs can have either single or multiple cases. Yin (1989:49) notes that single-case studies are appropriate in circumstances where, for example, the case represents a critical case for testing a well-formulated theory, the case is an extreme or unique case, or the case provides a revelatory case for exploring certain aspects of phenomena previously inaccessible to scientific investigation. Single-case design can also be employed in explorative studies. Multiple-case study designs are used in studies where the case can be replicated thus making use of research evidence gained from cross-analysis of all the multiple cases involved in the research. Yin (1989:52-53) further suggests that:

> *despite the more compelling evidence often proposed by results of multiple-case designs, this type of research approach requires extensive resources and time beyond the means of an independent researcher. In addition, several alternative cases could be difficult to locate and accessed so that real cross-analysis could be made between them. The choice between single-case design and multiple-*

case design should therefore be kept open during the research process because the selected single-case could turn out to be a non-representative case of the phenomenon being studied or the case may not work for some other reason.

Considering the fact that privatisation of agricultural extension services in the Hohoe district was the subject under study and given that resources for the study was limited, the single-case design was eventually adopted considering the study purpose.

Levels of Analysis

Yin (1989) proposes the determination of level of analysis for use within a case study. Both single-case and multiple-case could have varying numbers of levels of analysis. Especially in an embedded single-case design, Yin (1989:49) submits that there can be more than one level of analysis. This study adopted an embedded case study with multiple level of analysis. The main level of analysis in this study was perception of stakeholders towards the privatisation of extension services (situational level). To help define and analyze this main level thoroughly, there was the need to also examine the natural endowment uniqueness of Hohoe district (district level). Thus this single-case study has two levels of analysis; *situational level and district level.* The adoption of different levels of analysis within this single-case study also required different primary data collection methods, which are described in detail later in this chapter.

Case studies have not been often used in agricultural research. Nugent (2000) analyzed different urban agricultural case studies carried out in different

countries and found that there were extreme variables in their sampling methods, scope and presentation of data. Case studies in agricultural research have revealed trends in the relationship between agriculture and nutrition in Ghana (Maxwell *et al.,* 1998) and its impacts in terms of policy implications and urban planning. A case study was also conducted in Gambia (Schroeder, 1993) to identify questions on the growing practice of planning voluntary environmental programmes using unpaid female labour in gardens and orchards. Maxwell (1995) carried out a series of case studies and surveys to understand the forces behind urban farming and its impact at the household level, intra-household dynamics and gender relations in Kampala.

This study adopted an embedded single-case study with multiple levels of analysis approach. Within this case study, questionnaire and interview survey, key informant meetings and content analysis were employed as primary data collection methods. The next section provides the details of the research methods used within the case study.

Justification for Choice of Methodology

Brewer and Hunter (1989) suggest that a researcher should adopt a pragmatic approach in carrying out any study. They advocate that the researcher should use whatever philosophical or methodological approach that works best for a particular research problem or issue. Denscombe (1998) notes that the suitability or the appropriateness of a particular methodology within an eclectic approach would also be determined by the research problem and or research questions. Brennen (1992) however concludes that the decision to use particular

research approaches is subject to a variety of considerations including the preference of the funding source, available finances, skills of the researcher, and the social and political orientations of the research team.

The study used a two part approach to collect two sets of data to answer the research questions. The first set of data was on the demography of farmers. These were succinctly captured using quantitative methods (questionnaire and interview surveys). The second set of data focused on the substantive question of perceptions of extension officers and farmers towards privatization of agricultural extension services. Qualitative methods (Key Informant Interviews and Documentary Analysis) were employed to capture this set of data. Considering this study topic, which sought to investigate the issue of perception of extension officers and farmers towards privatization of agricultural extension services and its relation to a social phenomenon as complex and cross disciplinary as the development of agricultural extension services, it was realized that the best way to get data was to combine both quantitative and qualitative approaches.

Further, the author realized that the specific research questions raised from the literature review could not be addressed solely by quantitative or qualitative methods alone. In addition, considering the fact that quantitative methods are effective in capturing the structural (demographic) data of research participants while qualitative research methods could capture social action processes, it was decided that combining both methods could adequately capture both aspects of social structure and process. Finally, because the review of literature had revealed the paucity of information in privatization of agricultural extension services

research involving the use of qualitative methods such as case study, observation, and focus group discussions worldwide and more so in Africa including Ghana, the researcher chose to use a lot more qualitative methods in this study.

The combination of research methods was also found to be expedient in an attempt to provide breadth and depth to the study data collected. Given the weaknesses and strengths of the traditional epistemological underpinnings, an attempt was made to combine an objective reality (positivist) with a subjective (interpretive) one. Therefore, the study mainly used a qualitative approach in investigating people's own understanding of social reality supplemented by a quantitative approach as a point of departure. To this end, the study used an interview-based questionnaire to collect demographic information such as age, gender, level of education, size of household, years of farming as a major occupation and years of working in current location in order to make comparisons on their responses. This quantitative data was used to supplement qualitative data collected through key informant interviews and documentary analysis.

Target Population

A population usually refers to all cases or participants in a study (Robson, 2002). The population for this study included all Agricultural Extension Officers, farmers in their operational areas, Officials of Agricultural Input Dealers, and Private agricultural extension service providers involved in agricultural extension service provision in the Hohoe District. These four populations yielded the total participants for the study.

Sample and Sampling Procedure

Sampling involves drawing out participants in a study from a population. This is done because practically, it is not always possible to undertake a census of research participants. Statistical theory suggests that the most reliable way to select a representative sample upon which generalization could be made is the use of random sampling. However, this is only possible when there exist a sampling frame (Burton, 2000). A sampling frame is a list of potential participants in the population. It was possible to obtain a sampling frame for all the officers working for the Ministry of Food and Agriculture (MOFA) involved in agricultural extension work. Each Agricultural Extension Agent (AEA) works with several farmers. Twenty-five (25) farmers were randomly selected out of the farmers the AEAs work with. Hence these 25 farmers were targeted as respondents of the study. There were in all 16 AEAs. Therefore the study targeted 400 farmers as respondents of the study.

Key informants were selected purposively because they were adjudged from an initial reconnaissance survey to have requisite knowledge on the privatization of agricultural extension services the Hohoe District. The key informants selected for the study included the District Director of Agriculture in Hohoe and four of his Field Supervisors.

Validity of Data Collection Instruments

In research terms, validity refers to the accuracy and truth of the data and findings that are produced. It refers to the concepts that are being investigated;

the people or objects that are being studied; the methods by which data are collected and the findings that are produced. There are several different types of validity including face validity and content validity. Face validity is the extent to which a measuring instrument appears to others to be measuring what it claims to measure. Content validity is similar to face validity except that the researcher deliberately targets individuals acknowledged to be experts in the topic area to give their opinions on the validity of the measure (Robson, 2002). In 2007, a reconnaissance survey was carried out to collect preliminary information on the types of farmers and farming systems being carried out and the various institutions that contributed to agricultural development in the district. Using this and additional information from the review of literature, checklists were developed and built around the specific research questions for interview-based questionnaire.

The questionnaire included questions on facts and on opinion. The former included demographic characteristics such as age, gender, highest level of education, and marital status. The opinion questions mainly identified agricultural extension officers' perceptions, attitudes and concerns regarding privatization of agricultural extension services. Open-ended questions were used to collect such qualitative data. Close-ended questions were used to collect data on facts relating to participants. This meant that such factual data could easily be quantified.

The questionnaires and interview schedules were first face validated. In this process, the purpose of the study was explained to colleagues and friends.

They were then asked to read the questions and give comments on the wording of the content. The purpose was to keep the questionnaire questions clear, simple and unambiguous. Based on the comments and feedback received, some of the wordings of the questions were then modified and validated through expert reviews and pilot testing in two contiguous districts outside the study area (that is outside Hohoe District). After the face validation of the instrument, it was content validated. This time the modified questionnaire was given to (i) a community development specialist, (ii) the director of the Agricultural Extension Services of MOFA, (iii) a university lecturer, and (iv) a retired officer of the Food and Agricultural Organization (FAO) of the United Nations (UN). To each of these experts, the nature and objectives of the study were explained and they were then asked to examine the questions on the questionnaire to see if they accurately measured the constructs being measured in the study. Their comments were useful and were used to modify the questionnaire accordingly.

One major outcome of this content validation stage was that it helped shorten the length of the questionnaire considerably and also helped make the questions on the questionnaire semi-structured so that it could be used as both a questionnaire and an interview schedule. After this content validation stage, a pilot test of the questionnaire was carried out by the study.

Pilot Testing

The study ran a pilot test as a miniature version of the real study in two contiguous districts (adjoining districts to Hohoe) outside the research area but having similar demographic characteristics. In the first district (Kpandu), the aim

was to understand the meaning of the questionnaire questions to the respondents from their own perspective and especially how they arrive at their responses. The expected outcome was to improve the wording of the questionnaire as much as possible to elicit the best views of the eventual study participants. This pilot testing stage was carried out with a community development specialist who had earlier helped with the content validation of the questionnaire. In all, thirty respondents, including ten females, were selected using purposive sampling. The proportion of male to female respondents in this pilot study roughly approximated what was estimated for the Hohoe District. Each respondent was interviewed by reading out each question to them. They were then asked to indicate how they understood the question and what it meant to them. Secondly, respondents were asked to respond to each question on the questionnaire to the best of their knowledge and ability.

A second pilot study was carried out in another district; the South Dayi District two weeks after the first pilot study. In addition to pre-testing the final questionnaire, this second pilot study aimed at giving the two research assistants employed in the study, hands-on training on collecting data using a questionnaire. Again thirty respondents, five Agricultural Extension Officers (AEA) and twenty-five farmers (including ten females) were selected for this pilot study. Initially the author asked respondents individually, questions using the questionnaire while the research assistants observed the process. At the end of each session with a respondent, which lasted for about forty-five minutes, the author had a discussion with the research assistants stressing key points and obtaining their views. The

research assistants were gradually made to participate in asking respondents questions until finally they were able to complete questionnaires on their own. At the end of this pilot study, each response were evaluated and discussed with the research assistants until a standard was agreed that would make the data collected valid and reliable. For instance, how to summarize narrative responses to close-ended questions were discussed. Some modifications were also made to improve the final questionnaire and interview schedule.

Data Collection

Data was collected using the questionnaire over a period of four months from September to December 2009. AEAs were interviewed individually at their operational areas. The visit to individual operational areas afforded the opportunity to observe the types of service provision that was available. Farmers working under the AEA were also interviewed. Using three interviewers, each interviewing three farmers per day the study targeted at achieving a total of nine interviews each day that a visit was made to collect data. At the end of each day all the responses from each farmer were checked to verify that all questions had been answered properly so that where further clarification was needed it could be done. The overall target of the study was to interview four hundred (400) farmers. It was possible to reach all the 400 farmers.

Regrouping of Data

Before this study, DAES had commissioned a pilot study in the Hohoe District. The study took advantage of the lessons learnt from the pilot study and

also did a comparative analysis of the situation of private extension provision as against public extension provision. To help with the report of findings, the two study sites (that is the private provision as against the public provision) are presented in their abbreviated forms as follows: The Christian Rural Aid Network study site (private extension) is denoted by CRAN while the Ministry of Food and Agriculture covered study site (public extension) is denoted by MOFA. The original farmer respondents were 400. After the initial test run of the analysis using the SPSS version 16, there were no observed differences or relationships. The data were therefore, regrouped. The two adjoining operational areas, Logba and Tafi were regrouped and denoted MOFA (public extension) and then Have/Nyagbo and Woadze/Goviefe adjoining operational areas were regrouped and denoted as CRAN (private extension). The selection of the four adjoining operational areas was done purposively. Consequently, a total of 100 sampled respondent farmers were selected. . This was made up of 25 farmers from each of the four operational areas.

This regrouping was necessary so that the impact of private extension (as provided by CRAN) as against public extension (which was provided by the MOFA) can be explored. The operational areas are contiguous and therefore have similar characteristics. The first operational area from south to north is, Goviefe/Woadze followed by Have/Nyagbo, then Tafi and finally Logba. On this basis, it was possible to compare the findings in terms of CRAN (private extension) and MOFA (public extension).

Key Informant Interviews

Key informant interviews were conducted as part of the data collection. Denscombe (1998) notes that the use of interviews normally means that the researcher has reached a decision that for the purpose of the particular study in mind, the researcher would be better served by getting material which provides more in-depth insight into the topic, drawing on information provided by fewer informants. Robson (2002) argues that interviews, especially informant interviews, are most suitable where individual historical accounts of how a particular phenomenon developed are required. Altogether, the study held five key informant interviews between November 16 and 20, 2009. The key informant interviews were carried out to collect data to fully address the research question: *What is the nature and scope of private participation in Agricultural Extension services?* and to partly address the research question: *What are the perceptions of stakeholders towards private participation and eventual privatization of agricultural extension especially, on willingness to pay for extension services in the Hohoe District?* These five persons had requisite knowledge about the evolution *of* privatization of agricultural extension services in the Hohoe District. It was therefore necessary for the study to conduct the key informant interview with them. Therefore the study had to explore the personal accounts, feelings and experiences of these persons regarding the topic of interest of the study. The study judged that better insight could be gained into these opinions and experiences through personal interviews rather than through focus group discussions or surveys. Accordingly, the District Director of Agriculture and his

four supervisors were selected for the key informant interviews. To this end, an interview schedule was developed, which was based on a modification of the semi-structured questionnaire used for the AEAs and farmers' survey. It also incorporated some issues that needed further clarification from responses from the farmers' survey. The interview schedule was therefore semi-structured.

It contained a checklist of themes that the study wanted to explore. This was consulted from time to time during interviews. For the key informant interviews the main themes that were explored were: (a) what form does private extension take in Hohoe, (b) who are the private extension service providers in Hohoe District, (c) who are their clients, (d) are the clients different from that of regular extension provided by MOFA, (e) how different are the modes of practice of private extension as compared to that of regular extension, (f) are their success rate better/lower, (g) what are the attitudes and preferences of Extension Officers (stakeholders) towards successful privatization of agricultural extension in Ghana (ie. do Extension Officers (stakeholders) overwhelmingly support the notion of privatized extension or do they differ in their opinions, (h) if majority of Extension Officers (stakeholders) support the notion, how do they want private extension supported/implemented to achieve sustainable results, (i) what are their recommended success factors, (j) If majority of Extension Officers (stakeholders) do not support private extension, what viable alternative do they propose in the face of dwindling central government resources/support for regular extension vis à vis the government's call for private involvement in the service as is the practice globally?

The key informant interviews were conducted at the MOFA offices in Hohoe. Each key informant interview lasted for about one hour thirty minutes. In carrying out the actual interviews, an appointment date was sought with each of the key informants where the purpose of the study was further explained and their permission sought to interview them. Copies of the interview schedules were also left with them to go through to get familiar with the questions and themes the study was focusing on. All the interviews followed the questioning of each key informant and further interactions and discussions based on their response. The key informant interviews therefore followed no particular sequence. Documentary analysis was also used to augment the research data.

Documentary Analysis

Documentary analysis has been described as the analysis of a written document, whether this is a book, newspaper or magazine, notice or whatever is of interest (Robson, 2002). Robson (2002) further suggests that a common way of carrying out documentary analysis is through content analysis. Adams and Schvaneveldt (1992) describe content analysis as a scientific tool for the study of speeches, records and other written communication to determine key ideas, themes, words or other messages contained in a record. Content analysis can be used as a standalone data collection tool or used as a supplementary method. Robson (2002) concludes that content analysis can be used for triangulation purposes. Documentary analysis has been used to evaluate the evolution of privatization of extension service provision. According to Perez-Vasquez and

Anderson (2001), this method of data collection is useful for synthesizing different information sources. This could explain the historical development of privatization of extension service provision and also the present forms of privatization of extension service provision.

Robson (2002) further argues that provided the source is authentic, documents can be reliable and valid because they do not change, and are non-reactive, do not stagnate and can be used by researchers in very creative ways. This study used documentary analysis to trace the history of privatization of extension service provision in the Hohoe District. The study also examined a report produced by the Christian Rural Aid Network of the EDF project. According to Robson (2002), it is prudent when carrying out documentary analysis to sample from the population of interest in order to reduce the task to a manageable dimension. One of the objectives of this study was to explore the evolution of privatization of extension service provision in the area of study. The only way to do that was to examine the documents on the establishment of agriculture in Hohoe District. It has been argued that documents, usually written for some purpose other than for the research being undertaken, make it difficult or impossible to allow for the biases or distortions that are introduced into the research. This study examined the above-mentioned documents in their own rights because their content directly addressed a key research question of the study. The contents of these documents also helped to redefine the research methods used.

Data Analysis

Robson (2002) suggests that data analysis is carried out to bring data together so as to render possible interpretation. The criteria for deciding how data is analyzed are however governed by 'fitness for purpose and legitimacy' (Cohen, 2000:82). Data analysis must therefore be appropriate to produce results that address the research questions. In analyzing quantitative data collected, a coding manual was first developed for entering the responses from the questionnaire survey into the computer. Closed-ended question responses were entered directly into the computer while open-ended responses were first categorized into themes before being entered into the computer. The Statistical Package for Social Sciences (SPSS, version 16) software was used to run actual analysis. The study computed measures of central tendency such as mean, mode and median. Also computed were the frequency distributions of data in the various farmer groups with charts and measures of dispersion such as standard deviation and range. A test of means was further computed to determine significance differences between the two groups of respondents. Cross tabulation was also carried out with Chi-square tests to compare data between the two categories of respondents.

The qualitative data collected through the key informant interviews, and documentary analysis, were organized along main themes and summarized. This method of analysis enabled the study to identify and compare general patterns and description of events and note any inconsistencies or contradictions. The study took all necessary precautions to ensure a hundred percent objectivity in analysis. These included looking out for omissions and errors, re-contacting respondents to

confirm their answers on questions asked. However, as noted by Denscombe (1998), it is almost impossible to ensure this level of objectivity when interpreting and coding open ended questionnaire and interview responses. There is therefore a general understanding and acceptance that the researcher's self is inevitably part of the analysis and should be treated as such.

Ethical Considerations

Ethics in social research refers to the acceptable ways of conducting research, which, conforms to a code or set of principles (Robson, 2002). To ensure that the conduct of the research was acceptable to the respondents, the study adopted several measures. The study sought the informed consent of participants as a primary ethical consideration. Formal approval from MOFA, Hohoe and the farmers was sought before the study could interview farmers. The author also reiterated their voluntary participation during the individual interviews. The voluntary spirit with which participants actively participated in the study showed the willingness of the farmers to assist in the study. This study also sought for formal dates with key informants before interviewing them. The study also assured study participants of the confidentiality of information obtained from them. To this end, numbers instead of names were put down on the questionnaires to ensure anonymity. It is only with the key informants that the study addressed them with their positional titles for obvious reasons. This study also considered the inaccuracy of report of findings as a possible ethical issue. To offset this care was taken to read through all responses in the presence of participants to ensure the data captured was accurate. The above measures

adopted were consistent with what Robson (2002) proposed as acceptable ethical consideration in formal research.

Conclusion

This section began by looking at quantitative and qualitative methodologies and their derivatives as paradigms of social research. The section also examined the methods used under each of these epistemological leanings. This study decided to use a combination of methods because it was found to be the most appropriate approach to collect data to address such complex research questions. By combining both quantitative and qualitative methodologies in the study, this study aimed at exploring people's understanding of social reality as a point of departure from other social research approaches, which have usually tended to be purely quantitative. This combination of methods also ensured some form of objectivity in the study. The methods used had their weaknesses but the study employed measures to ensure validity and reliability of data collected. The results from analysis of the data collected are presented in the next chapter.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents and discusses the results of the study. It begins with the background characteristics of the respondents. This is followed by a discussion of the private sector institutions involved in the provision of agricultural extension services in the study area. The nature and scope of private participation in agricultural extension service provision is also presented and discussed. The chapter also discusses the perception of stakeholders towards privatization of agricultural extension service provision and the key factors that impede or promote private sector involvement in agricultural extension service provision. Together with key lessons drawn for the analysis of the EDF Pilot Project a model for collaboration between public and private sector agricultural extension in Ghana is discussed.

Characteristics of Respondent Farmers

This section presents findings on the characteristics of farmers who participated in the study. It describes the sex distribution of the farmers,

their origin, marital status, age and family size, level of education, and years of experience in farming.

Sex Distribution of Farmers

Out of the 100 farmers interviewed during the study, 63 (63%) were males and 37 (37%) were females. The 2000 national census shows that nationally, women slightly outnumber men in the population of Ghana. It is a well-documented fact that women usually take to petty trading and other like vocations instead of farming in the city (Mugeot, 2006). This perhaps reflects the composition of farmers in the study. Table 5 summarizes the distribution of farmers by sex and by the type of extension provision. This percentage of women involved in farming as sampled in the study in the Hohoe District is much lower than the percentages often quoted in global literature on rural/urban agriculture.

Table 5: Distribution of farmers by Sex

Sex of Respondent	Type of Extension in Percentages		
	[1]CRAN	[2]MOFA	
Male	33.0	30.0	63.0
Female	17.0	20.0	37.0
Total	50.0	50.0	100.0

Source: Field Data, 2009. [1]N=50 [2]N=50

The result showing male dominance in farming activities is however similar to results reported by Boakye (2007), Armar-Klemesu *et al.* (1998), Obosu- Mensah (1999), Flynn-Dapaah (2001) and Danso *et. al.,* (2003) in the Ga District of the Greater Accra Region. As already mentioned in Chapter Two, the Hohoe District is a commercial one with farming being one of the dominant income generation vocations.

In many societies, women predominate in numerous urban production systems, and studies done in developing countries point out that, women have increasingly turned to work in the informal sector (IDRC, 1993). Rakodi (1988) found that food production in Zambian cities was predominantly women's activity involving land clearing, cultivation, harvesting and marketing. Mbiba (1992) explains that women dominate in the agricultural vocations due to the socio-economic status of women and their traditional gender roles. It has been suggested that, women participate in agriculture as a means of income diversification, to contribute to the food consumed by their families, improve their economic status and enable them acquire independent income.

Consequently, agriculture has become an important survival strategy for the resource poor who are mostly women (Maxwell, 1993; IDRC, 1993). Although some authors suggest that agriculture may afford a relatively easy entry point into the developing economies such as Ghana's, for women, their ability to thrive within and beyond this sector is often limited by laws, customs and attitudes that prevent them from asset ownership or decision making regarding (their use). In addition, women very often experience more difficulty, risky and inadequate access to land, water, labour, capital, technologies, and other services (Maxwell, 1993).

Origin of Farmers

Most (66%) of the farmers involved in the study were natives of the Hohoe District (Table 6). There were 34 percent of farmers who claimed to be migrants (the term "migrant" is used to describe people who are not indigenes of

the Hohoe District). The key informants and the farmers surveyed used the term migrant extensively in describing outsiders to the Hohoe District.

Table 6: Distribution of Farmers by their Origin

Residential Status	Type of Extension in Percentages		
	[1]CRAN	[2]MOFA	
Indigene	33	33	66.0
Non-Indigene	17	17	34.0
Total	50	50	100.0

Source: Field Data, 2009. [1]N=50 [2]N=50

The dominance of natives in farming activities in a mainly peri-urban district such as Hohoe is different from findings from studies carried out in Accra (Armar-Klemesu *et al.* 1998; Obosu-Mensah, 1999; Flynn-Dapaah, 2002) and Tema (Boakye, 2007) which, showed that farming in most urban districts are carried out by migrants. Native farmers as compared to non-native farmers often have title or user rights to their farmland. They are therefore able to make and take decisions which, affect the overall productivity of their farming activities such as the payment for extension services.

They are able to use their land as security to access loans for farm inputs and information. Non-natives or migrants do not have this luxury because they do not often have ownership rights to their farmland. The dominance of natives in farming activities in the Hohoe District could also be attributed to the fact that it is a relatively developing district when compared to more developed districts such as Tema or other districts in the Greater Accra Region where, farming outside the district capitals are more peri-urban than rural.

Marital Status of Farmers

The majority (84.5%) of the farmers interviewed were married and living with their spouse and children (Table 7). The rest (15.5%) were single, divorced or widowed. This result showing the dominance of married farmers in Hohoe District is similar to results found in Kumasi (Cornish & Aidoo, 2000) and Accra (Armar-Klemesu *et al.*; Obosu-Mensah, 1999; Flynn-Dapaah, 2002).

Table 7: Marital Status of Farmers

Marital Status	Type of Extension in Percentages		
	[1]CRAN	[2]MOFA	
Married	40	42	84.5
Divorced/Widowed/Single	7	8	15.5
Total	47	50	100.0

Source: Field Data, 2009. [1]N=47 [2]N=50

Findings from some agricultural research in parts of Africa have revealed that social relationships, including social institutions such as marriage and kinship are critical factors in determining how, when and where people access land (Dennery 1996; Kasanga 1996; Maxwell 1996; Mianda, 1996; Obosu-Mensah, 1999). Flynn-Dapaah (2002) suggests that women especially are able to use their marital status to access land in areas where it is difficult for them to access land on their own.

Age and Family Size of Farmers

The overall average age of farmers involved in the study was about 49 years (SD=8.97) with a minimum and maximum age of 22 and 80 years respectively. This suggests that the available manpower for farming in the

Hohoe District is dwindling because the life expectancy in Ghana is 56 for women and 52 for men. This is because, with the average age of 49 years, the average farmer has between 3 and 7 years of active farming life. With the present situation, the implication is that the future of farming in the Hohoe District is uncertain if younger people do not take to farming.

The size of the family was an issue in the early part of the century. This was so because farm labour was a function of the family. The larger the family size, the more available labour (Sawio, 1993). Economic decisions have however become a determining factor for family size. People tend to have smaller families in order to adequately cater for them. An average size of 7 members was found from the study area. This size of family observed in this study was consistent with results found in studies in Accra by Obosu-Mensah (1999). Sawio (1993) argues that the family size of a farmer is important because it determines the amount of food requirement for the household and contributes greatly to household labour.

Level of Education of Farmers

The study also examined farmers' highest level of formal education. The result is presented in Table 8.

Table 8: Farmers' Level of Education

Highest Educational Level Attained	Type of Extension in Percentages		
	[1]CRAN	[2]MOFA	
No Formal Education	2	12	14.0
Primary Education	2	5	7.0
Middle/JHS	31	24	55.0
Sec/SSS/Tech	15	6	21.0
Diplomate	0	3	3.0
Total	50	47	100.0

Source: Field Data, 2009. [1]N=47 [2]N=50

From Table 8, it could be inferred that most of the farmers were fairly well educated. Seventy-six percent of the farmers overall had attained between middle school/ junior secondary school and secondary/technical level of education. Three percent had diploma level, while 7 percent had up to primary level education. This result confirms previous findings that farmers with various educational backgrounds are involved in farming in some Ghanaian cities (Obosu-Mensah 1999, Danso et al., 2003). Similar trends in farmers' educational background have been observed for some African cities e.g. Nairobi, Kenya (Mougeot, 1994; Lee-Smith & Memon, 1994), Kampala, Uganda (Maxwell & Zziwa, 1992).

It is well known that economically less developed countries such as Ghana have a higher ratio of illiterates in the total population than more advanced countries and that the rural population has a higher rate of illiteracy than urban population (Ghana Statistical Service, 2000). Any sharp and continuing acceleration of agricultural productivity requires breaking away from traditional attitudes toward change. This can be achieved only with the aid of mass education. Thus, the development of

human resources through education offers not only one of the greatest possibilities for economic advancement but is a prerequisite to the application of the technology required to increase agricultural productivity (Rivera, 2002).

The level of education of any extension clientele is paramount. The timeliness of information and the desire to derive the best out of every situation, to a large extent depends on education. Planning and implementation of programs also depends on how well your stakeholders are educated. For example, the average age of the respondents was 49. Clearly, this age group will require methods of teaching that enhance their ability to gain from designed training programmes. Demonstrations are more relevant to this class of people than say lecturing. The relatively higher level of education of farmers in the Hohoe District places them in a better stead to improve agricultural productivity.

Farmers Years of Farming Experience

To examine how many years farmer have been engaged in their vocation, three classes were created. Those who have been farming for up to 5 years, 6 to 10 years and finally more than 10 years. For the CRAN operational area, a mean of 17.76 years of farming was determined. Similarly, for the MOFA operational area, a mean of 12.65 years of farming was determined. For both CRAN and MOFA the range of more than 10 years of farming was the modal group. This result is given in Table 9.

Table 9: Years of Farming as a major Occupation

Operational Area		Years of Farming					
		Up to 5 years	6 to 10 years	More than 10 years	Total	Means	SD
CRAN	Count	1	11	38	50		
	% within operational area	2.0	22.0	76.0	100.0	17.76	8.45
	% of total	1.0	11.0	38.0			
MOFA	Count	5	20	25			
	% within operational area	10.0	40.0	50.0	100.0	12.65	5.64
	% of total	5.0	20.0	25.0			
TOTAL	Total count	6	31	63	100		
	% within operational area	6.0	31.0	63.0	100.0		
	% of total	6.0	31.0	63.0	100.0		

Source: Field Data, 2009.

The means of 17.76 and 12.65 years that farmers in the Hohoe District have been engaged in farming as a major occupation are lower than results found in the Greater Accra Metropolitan Area (Flynn-Dapaah, 2002) and Kumasi (Danso et al., 2002). The average number of years of farming as a major occupation observed in these two cities in Ghana was thirty years or more. This observed difference in years of farming between Hohoe District and the two other cities in Ghana could possibly be explained by the fact that Hohoe District is a relatively new city. The next section presents key findings on farm characteristics.

Farm Characteristics and Size

This section presents findings focusing on farm characteristics and size in the Hohoe District. It describes the size of farm holding, how the farm land was acquired, types of crops grown, access to inputs and types, and the other enterprises engaged in by the farmers.

Farm size holding showed a rather interesting trend. The smallest farm size reported was 0.5 acres, whilst the biggest was 50 acres (Table 10). The overall mean score for farm size holdings in acres was M = 4.99, SD = 6.138. Farm holdings in the MOFA operational areas were slightly smaller (M=4.806, SD=7.0) when compared with that of CRAN operational areas (M=5.180, SD=5.2).

Table 10: Farm Size in Acres

Extension Provider	Mean	N	SD	Minimum	Maximum
MOFA	4.8061	49	6.99763	1.00	50.00
CRAN	5.1800	50	5.22627	0.50	32.00
Total	4.9949	99	6.13808	0.50	50.00

Source: Field Data, 2009.

In a chat with a farmer in Ve Wudome, he said that, the relatively small holdings were because the land ownership was vested in families. The land is shared for family members who exercised usufruct usage of the land. The more family members there are, the smaller the farm holdings. This is because every family member is given a portion of the land. For example, if there are 10 members of the family and each has a holding of 4 acres, the 4 acres will reduce if the number of family members for example is now

20. The 4 acres may become 2 acres. This is what can lead to land fragmentation. The mountainous areas of the Hohoe district also results in smaller areas of land holdings that are suitable for farming purposes. The paternal inheritance system also leads to fragmentation of land to ensure that each family member is given a portion of the family land for their farming activities.

The size of farmland largely determines the options available to a farmer in terms of what is cultivated. When the farm size is large enough, a farmer could opt to let part of the land go fallow to rejuvenate itself or vary his or her cropping pattern to make optimum use of plant nutrients. Farmers with smaller sized farms do not have this privilege and must often contend with limited cropping options.

Farmers are permitted to grow a crop of their choice on the farmland provided it is not a permanent crop. The growing of tree crops is forbidden since a land with tree crops could be used to claim and contest ownership to land (Flynn-Dapaah, 2003). It was therefore not surprising to find that most of the crops found being grown by farmers in the study were staple arable crops and vegetables.

Acquisition of Farmland

Results from the study revealed that farmers employed diverse modes of accessing farmland. Four main types of land acquisition methods were found among the farmers (Table 11). These were by inheritance (50.50%), hiring

(40.40%), crop share arrangements (7.07%) and the rest through purchasing (2.20%).

Table 11: Method of Acquisition of Farm Land

Method of Farmland Acquisition	Type of Extension in Percentages		
	[1]CRAN	[2]MOFA	
Inheritance	23	27	51.51
Purchased	0	2	2.02
Hired	21	19	40.40
Abusa	1	1	2.02
Abusa + Fees	1	0	1.01
Hired + Abusa	4	0	4.04
Total	50	49	100.00

Source: Field Data, 2009. [1]N=50 [2]N=49

A farmer's rights to farmland under formal settings are restricted to user rights only. Farmers are allowed to cultivate seasonal crops (permanent crops such as fruit trees are not allowed). Farmers are free to harvest and market their produce. They are however, prohibited from bequeathing, selling, leasing, or sub-letting the land to others.

Types of Crops Grown by Farmers

The climate and soils of the Hohoe District (Chapter three) support varieties of crops and livestock. Crop production includes food and cash crops. The research findings indicated that local vegetables namely okro, tomato and garden eggs are cultivated extensively mostly in the Ve, Logba and Nyagbo areas of the District. Additionally, food crops produced mainly by peasant farmers using simple hand tools are maize, cassava, rice, plantain, cocoyam and yams. These crops are staples which feature heavily in the diets of the Hohoe populace.

Private sector institutions involved in the provision of agricultural extension

The study sought to identify private sector institutions involved in agricultural extension service provision. Table 12 gives details about the institutions. In all, 16 institutions were interviewed. CRAN's core functions were provision of micro credit to traders and farmers, farmer training and provision of agricultural extension services. Prolink Chance handled farmer training only.

Table 12: Other Institutions Involved in Agricultural Extension Service Provision

No	Name of Institution	Location	Core Function	Year Established
1	CRAN	Hohoe	Micro Credit, Farmer Training, Extension Service	1995
2	Prolink Chance	Hohoe	Farmer Training	2001
3	Greenshield Agro Chemicals	Hohoe	Agro-input Sales	2000
4	Gbi Wegbe Agro Chemicals	Wegbe	Agro-input Sales	2004
5	Emilex Agro Chemicals	Hohoe	Agro-input Sales	2006
6	Principle Link Enterprise	Hohoe	Veterinary Drugs	1999
7	Sunset Agro Chemicals	Hohoe	Agro-input Sales	2004
8	Sweet Jesus Agro Chemicals	Hohoe	Agro-input Sales	2005
9	Cocoa Input Company Ltd	Hohoe	Cocoa Fertilizer & Chemicals	2006

Table 12: Continued

No	Name of Institution	Location	Core Function	Year Established
10	Chemical Ali	Hohoe	Agro-input Sales	2008
11	Cepfort Chemical Shop	Hohoe	Agro-input Sales	2007
12	Lydia Avevor Chemical Shop	Hohoe	Agro-input Sales	2008
13	Victorious Jesus Agro Chemicals	Kpeve	Agro-input Sales	2009
14	Agro Input Shop	Fodome	Agro-input Sales	2006
15	Sunta	Hohoe	Veterinary Drugs	2007
16	Agricultural Development Bank	Hohoe	Credit	

Source: Field Data, 2009

Agricultural Development Bank, the only bank interviewed was involved in commercial banking and to a small extent agricultural credit to farmers. There were two types of credit schemes. The first type was for individual farmers which required a collateral. The second type was to farmer groups which did not require collateral. The remaining 13 were involved in agro inputs, specialized cocoa agro inputs and veterinary drugs. These agro inputs were seeds of various crops (as planting material), fertilizers, pesticides and some farm implements.

As mentioned earlier, two firms dealt only in veterinary drugs and one in cocoa agro inputs made up of cocoa seedlings (as planting material), specially formulated cocoa fertilizers and cocoa pesticides, (insecticides and fungicides). Some form of specialization in the 'market place' had occurred. The institutions were established between 1999 and 2009. Considering the shift in government policy to wholly privatize the importation, sale and distribution of agro inputs, the

researcher thinks that the policy shift has been largely implemented. There were mixed feelings or perceptions about the operations of the input dealers.

From the results, a typology of private sector institution involved in extension service provision can be elucidated (Figure 3). Four key private sector extension providers can be distinguished from this study. These are those providing 1) training, 2) credit, 3) general agro-inputs including veterinary products, and 4) specialized services including irrigation schemes and boreholes.

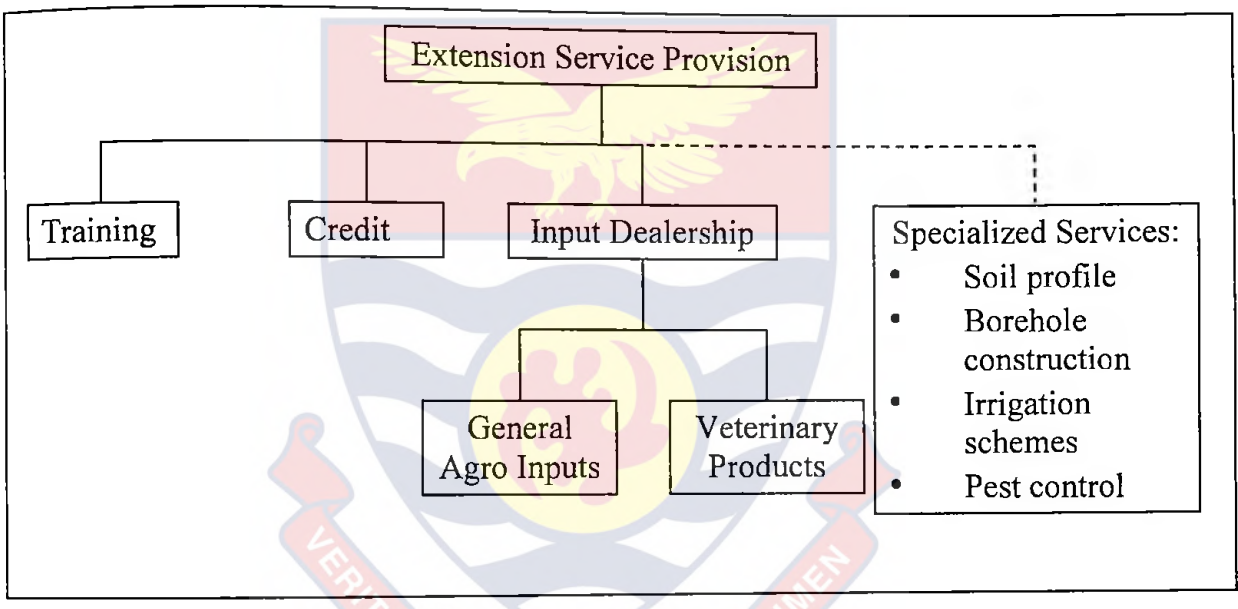

Figure 3: Typology of Extension Service Provision

Source: Author's Construct, 2009

Those involved in training are involved in farmer training. They train farmers on issues such as group dynamics, forming and maintaining farmer associations, issues about HIV/AIDS, family planning and group marketing of farm produce. CRAN and Prolink Chance as indicated earlier (Table 14) are engaged in training. Those in the provision of credit to farmers are CRAN and Agricultural Development Bank. Credit is provided in the form of cash or inputs

such as seeds, fertilizer and farm implements. There are two types of credit schemes. The first type was for individual farmers which required the provision of collateral. The second type was to farmer groups which did not require provision of collateral. For example, the Mango plantation at Ve Wudome took a loan from the Agricultural Development Bank to acquire a 60 HP tractor and matching accessories. The collateral provided was landed property of the owners of the Mango plantation.

Provision of extension service involves: 1.training; 2.Credit and 3.Input dealership. With the input dealership, a further breakdown into two levels can also be proposed. There are input dealers who specialize in veterinary products and those who deal with pesticides, herbicides, agro implements and protective clothing. The extension literature has described extension provision in many countries to encompass a wide range of activities in both the public and private sectors, yet the exchange of information continues to be the primary focus of all extension activities. The traditional concept of public agricultural extension involves a professional body of agricultural experts (generally government employees) who teach improved methods of farming, demonstrate innovations, and organise farmer meetings and field days on a wide range of topics. Public extension is sometimes used as a channel to introduce – and sometimes enforce – agricultural policies. Extension also functions informally as farmers transfer their best practices to each other. In addition, extension activities are carried out by a wide range of organisations in the private business and non-profit sectors (Moris 1991; Hayward, 1989; Lafourcade, 1988). As such, this study has given a new

dimension to how the private sector extension provision can be envisaged taking into consideration the type of services they provide.

The study also unearthed the provision of specialized services. These included the construction of Boreholes for water, simple irrigation schemes, provision of Soil Profile and Soil Classification and Utilisation Plans and Pest Control.

Access to Agro-inputs and Types

The study revealed an in depth understanding of how farmers managed their agro-input needs. The study results showed that farmers had good access to agro-inputs for their farming activities. Table 13 indicates the number of farmers who accessed seeds, agro-chemicals, agro-implements, information that goes with the use of the agro-inputs, fishing gear and veterinary drugs.

The level of access (68% to 98%), that is their ability to purchase and use agro-inputs clearly indicates farmers know where and how to get inputs for their farming activities. It could also suggest that extension training has had some impact in showing farmers the need to voluntarily access agro-inputs for their farming activities. This result could also translate to the extent of farmers' desire for relevant information which could help them in their farming practices.

Table 13: Access to Agro-inputs

Agro-input	N	Frequency	Percentage
Seeds	100	93	93.0
Agro-chemicals[1]	100	98	98..0
Agro-implements[2]	100	68	68.0
Veterinary Drugs	100	96	96.0
Fishing Gear	100	7	7.0
Information that goes with agro-inputs	100	95	95.0

Source: Field Data, 2009

The results found for accessing of fishing gear is consistent with what was found in the district. Seven percent of farmers indicated that they accessed fishing gear. Even though the Hohoe District has appreciably number of water bodies, the people are predominantly crop farmers and not fishermen.

Fundamental to any permanent behavioral change is attitude. This is especially relevant when working with traditional societies. One often hears the expression 'farmers are conservative' and were inclined to trust the familiar and distrust the unfamiliar. They judge any change or innovation in the light of their own experience and the principles taught them by their fathers and forefathers. They seldom question these principles but try to apply them to the specific problem at hand. Conformity is a mark of a traditional culture. However, the access and use of agro-inputs have been embraced by the farmers in the study area. It is noteworthy to indicate that the Hohoe District has a number of input

[1] Agro-chemicals refers to herbicides, insecticides, folia, straight and compound fertilizers, seed treatments, pesticides etc.
[2] Agro-implements refers to knap sack sprayers, cutlass, hoes, power tillers, etc

dealers which are all privately owned who seem to meet the needs of the farming clientele.

Nature and scope of private participation in agricultural extension

Findings from the study reveals that the private sector has a wide scope in the provision of extension as earlier revealed in the typology of extension service provision by the private sector (Figure 4). As agro-input dealers, their involvement entails the stocking, repackaging and retailing of agrochemicals, (fertilizers, pesticides, weedicides, rodenticides) agro-implements, seeds and to a very little extent training in the use of agrochemicals. The private sector also provided microfinance schemes that engaged in small-holder credit schemes. They employ inventory credit schemes to encourage the small-holder farmer to access agricultural credit. In addition, the private sector provide training to farmers. Training is organized on group formation and dynamics, entrepreneurial skills, marketing strategies, HIV/AIDS, environmental and conservation issues, gender roles and family life. These are geared towards improving the livelihood of the farming clientele. Some level of marketing and distribution of agricultural produce is also carried out by the private sector.

Particular to the nature of private sector participation in agricultural extension service provision to farmers, the study considered the contact period farmers have with AEAs and the frequency of meetings, the sources of farming information, coordination of extension activities, and the willingness of the farmers to pay for agricultural extension services. These are discussed in the following sections.

Contact with Extension

The study found that farmers generally meet with AEAs once in every two weeks. They also reported of bimonthly training sessions. However, if there was an urgent need, the farmers used their mobile/cellular phones to contact their assigned AEA. The farmers also reported that the AEAs used a number of techniques and methods to interact with them. They employed group formation techniques, demonstrations and field visits and had one-on-one interactions with them. Some of the issues discussed with the farmers were:

- Diversification of agriculture for additional income
- Environmental conservation and improvement techniques
- Improvement of health and nutrition of farmers
- Prevention of nematode infestation
- Use of improved varieties
- Weed control
- Post-harvest management of cereals
- Linkage to a prospective grain bank
- Animal husbandry practices
- Indigenous technology

Sources of Extension Information

The study also explored the possibility of farmers sourcing information from other sources apart from the AEAs. Table 14 shows the other sources farmers got information from. It also indicates the numbers of farmers out of the total population sampled who use the different sources identified in the study.

Table 14: Sources of other Farming Information

Other Sources of Information	N	% Yes	% No	Total
Radio	100	91.25	8.75	100
Farmers Friend	100	89.25	10.75	100
TV	100	45.0	55.0	100
Newspaper	100	17.0	83.0	100
Agric. Sc. Teacher	100	5.0	95.0	100
Text Book	100	5.0	95.0	100
Internet	100	1.0	99.0	100

Source: Field Data, 2009

A trend of decreasing importance of other sources of agricultural information from radio sources through to the internet. The two most popular sources of agricultural information to farmers were radio (91.25%) and other farmers (89.25%). The least preferred or popular sources were the use of internet (1%) and text books (5%). There are two FM Radio stations that serve the Hohoe District. They have well developed agricultural development programmes that feature renowned resource persons and their colleague farmers. The programmes have question and answer segments that deal with current and contemporary agricultural issues. They deal with crop production, animal husbandry, post-harvest, marketing of produce and general livelihood issues. It is very popular

with farmers since it provides a great service to them. It is no wonder that 91% of the farmers had radio as the major source of alternative agricultural information.

Coordination of Extension Activities

The study found very little collaboration between extension practitioners and other stakeholders such as agro-input supply businesses. In many people's minds, extension and government are indissolubly linked. Yet elements of privatization in provision of extension services have been witnessed throughout the world over the past two decades. According to Carney (1998), active encouragement of non-governmental/private players is most effective when the government is willing to retain responsibility for a large part of the cost of the service, at least while the new providers are getting established. To him, extension services are still plagued with many problems in many countries and the extent to which the resource poor farmer might have benefited should not be over-stated.

Willingness to Pay for Extension Services

There was an interesting set of responses from farmers when they were asked to indicate how much money they were willing to pay for a typical extension visit service. The result is presented in Table 15.

Table 15: Willingness to pay for Extension Service

Level of Charge Willing to Pay	Type of Extension in Percentages		
	[1]CRAN	[2]MOFA	
None	27	3	61.2
GH¢5	0	12	24.5
Up to GH¢10	0	7	14.3

Source: Field Data, 2009. [1]N=27 [2]N=22

Only a total of 49 (49.0%) of farmers agreed to answer the question on payment of extension fees. Of this number, 30 (61.2%) of the respondents overwhelmingly said an emphatic 'no' to making some payment for the extension services they received. Of this number, 3(6.1%) were farmers in the MOFA operational area while 27 (55.1%) were from CRAN operational area. Nineteen (19, 38.8%) of the respondent farmers were however, prepared to pay between GH¢5 to GH¢10 for extension services. It is notable that all the farmers willing to make some payment came from the MOFA operational area. The unwillingness of farmers to pay for extension services as found in this study confirms most reports (Mahaliyaarachchi, 2005) obtained in Africa. Private extension will necessarily entail some form of payment by farmers.

The advocates of privatization of extension services believe that farmers should pay for the extension advice. However, there is genuine fear that the zeal to privatize extension services, in Ghana for example, where the majority of farmers are resource poor would deprive such farmers from benefitting from these services. The simple reason is that small-scale farmers either do not believe that extension advice is worth paying for, or they simply cannot afford to pay (Mahaliyaarachchi, 2005). Common wisdom would dictate that in developing

countries, commercial farmers and large cooperatives should pay for extension advice, while the government should continue providing free-of-charge extension services to small-scale producers. Measures are also needed to protect the farmers from exploitation by the private sector in developing countries.

This argument has been a strong basis for the continuance of government/donor sponsored extension programmes in Ghana. Findings from this study suggest that farmers are willing to pay some amount of money for the extension services they receive. Farmers in MOFA operational areas were willing to pay for up to GH¢5 per visit whereas those in the CRAN areas wanted the services for free. One would have expected that the farmers in the CRAN operational areas would have been willing to pay for their extension services because they mentioned that they greatly benefitted from the CRAN extension agents. It is plausible that having received all of their inputs for free during the pilot project, they were not eager to pay for future extension services.

The argument that farmers will not be able to pay for extension services they receive however breaks down in the face of growing evidence that farmers engaged in other practices often pay for their extension services. Farmers involved in poultry production and other forms of raising animals pay for the advice and medication given by the extension staff. The same applies to farmers growing commercial crops such as cocoa, mango, citrus and agro-forestry plants. One could argue that it is easier for farmers producing on a commercial scale to pay for extension services. However, farmers producing on a small scale also pay for extension services for livestock they keep as extra activities to their crop

farming because such livestock are kept for the 'rainy day'. The livestock in effect becomes a sort of buffer stock which the farmer falls on to sell for money in times of hardship or family emergencies. Elements of privatised veterinary service appear even among resource-poor herders.

A report from Somalia reveal that under their Actionaid/Vetaid outreach programmes, private services were set up in the Sanaag Region of Somaliland in the early 1990s. There were no other veterinary services and a network of 30 private extension officers was formed to cover the large isolated area. Privatisation through the sale of veterinary drugs at commercial rates based on the establishment of veterinary pharmacies in each district emerged as the most sustainable strategy, following consultation with pastoral farmers. The programme also included linking paravets to pharmacies and linking the pharmacies to traders to ensure the mutual exchange of technical, veterinary and business knowledge (Catley, 1996).

The emergence of a private veterinary in this sector in this case depended on the policy environment of the prevailing government. For instance, it is often difficult for privatised veterinary services to compete with subsidised public services. In addition, regulations and professional jealousies sometimes stand in the way of the development of an independent private veterinary sector. It is important to develop the political will for reforms to take place through the promotion of relevant training, clear distinction between veterinarians and paravets, and adequate licensing and regulation (Carney, 1998). Veterinary

associations can also play an important role in promoting a privatised service and enforcing regulations (Leonard, 1993).

The example of veterinary services has implications for crop extension which was the focus of this study. As mentioned earlier, farmers are willing to pay for extension service, but particularly when it is related to issues of significant economic importance and involves fairly straightforward, targeted measures. On the other hand, preventive measures and public goods issues in livestock management such as keeping the environment clean (just as in crop extension) are less likely to see the spontaneous development of a market for private extension provision. Observations made during the study also show that informal private extension or quasi-private extension occurs alongside more formal extension. A farmer for example who needs to apply insecticide to his crops would invite the extension officer to do so. The extension officer is often paid for this service in cash or in kind. Even where the farmer has his/her own knapsack sprayer, he/she may not feel confident enough to carry out the spraying on their own and will thus resort to asking the extension officer to do so on their behalf. This 'mutual exchange' occurs even with the resource poor small scale farmers.

Bebbington and Sotomayor (1995) conclude that a major reason farmers in Chile refused to pay for private extension was that they felt the quality of and intensity of the extension services they received began to decline as soon as they (farmers) started making payment for such services. According to them, the farmers realised that the service providers in their attempt to cut their operating costs and maximise their profit had began reducing the frequency of

contacts/visits to farmers as well as, increasing the size of farmer group in order to reduce service delivery costs. Bebbington and Sotomayor (1995) therefore suggested that the refusal to pay implies that farmers do not see the economic worth of the technical assistance. This is a clear case of farmers demanding efficiency and quality of service as a prelude to paying for extension services. This Chilean example confirms what many advocates of privatisation of extension espouse; there should be value for money.

In a study to determine the cost–sharing of agricultural technology delivery through extension in Nigeria, Kukwuone et al, (2006) found that the major constraints to effective cost-sharing of agricultural extension service in Nigeria included weak institutional development, lack of cooperation from farmers and uncertainties experienced in agriculture. The study proposed the establishment of farmers' cooperatives to serve as avenues for collection of payments as one of the key strategies to effect cost-sharing for extension delivery. The study also concluded that farmers should be properly educated on cost-sharing before implementation of private extension programmes.

In the market place, people pay premium for quality service, if the service is in a way compromised this market is lost. In the study area, when it came to veterinary services, farmers were prepared to pay for the services of the veterinary extension officer. The farmers intimated that if they saw no results in their animals' wellbeing, they were reluctant to either invite the extension officer again or pay for services rendered. This confirms the Chilean experience. It could be summarised therefore, that farmers' willingness to pay for extension services is

dependent on the type and size of enterprise practiced by the farmer. Generally, farmers often pay for their agricultural inputs even if they are small scale farmers. The relevance of content and nature of extension service as demanded by the farmer will therefore determine to a large extent the propensity of the farmers to pay for the extension service.

Perception of stakeholders towards privatization of agricultural extension

The key stakeholders in extension delivery in this study include farmers, Ministry of Food and Agriculture Staff (agricultural extension personnel), Input Dealers in the Hohoe Municipality, Private Extension Service Providers and Credit Institutions. The study found that agricultural extension personnel and farmers have similar views towards private participation in Agricultural extension services delivery. They have indicated that private participation of agricultural extension is hindered in the Hohoe District due to highly variable agro-climatic imbalances, highly variable socioeconomic imbalances, big population of small and marginal framers and a big majority of resource poor farmers. The majority of the farmers agreed that private participation is not desirable in the interest of the resource poor farmers and would lead to socio-economic inequality especially against resource-poor farmers. The resource-poor farmers may leave farming and add to the problem of rural-urban migration. The farmers and extension personnel all agreed that private participation would only enhance profit oriented extension services and will not deal effectively with resource poor farmers. Resource poor or small-scale farmers would be neglected by these private extension services and will be automatically eliminated from the system. In terms of food crop

production, they were of the view that extension service could be delivered by either public or private extension service, but cost should be totally borne by the government in this case the MOFA. Government (MOFA) could contract it to a private company, NGO or farmer company.

Private participation in extension is possible for the crops that are either mainly export oriented (cocoa, coffee, pineapples, mangoes or commercial type vegetables) and for medium and big farmers. Their perception was that respective authorities should implement the private participation concept on a selective basis only.

How Farmers Perceive the Services of Agro-input Dealers

Among others, this study sought to determine the perception of stakeholders on agricultural extension services. Tangential to this, is how farmers perceive the involvement of agro-input dealers, because they will need these agro-inputs to improve their productivity. Farmers were presented with a scale from poor, fair, good, very good to excellent to indicate their perception. Agro-input dealership has been handled and organized by the private sector since 1985 under the Medium Term Agricultural Development Programme, (MOFA, 1990). Table 16 shows how farmers perceived the services of the agro-input dealers.

Table 16: Assessment of Input Dealers Participation by Farmers

Assessment Factors	N	Frequency	%	Mean Assessment
Cost	100	98	98.0	1
Credit Facility	100	99	99.0	1
Timeliness	100	97	97.0	2
Information	100	99	99.0	2
Availability	100	99	99.0	3
Quantity Available	100	98	98.0	3

Legend
Poor 1
Fair 2
Good 3
Source: Field Data, 2009

In terms of the pricing or cost of agro-inputs (usually, the costs are indicated as price/kg or price/litre), the farmers reported that the items were relatively expensive and therefore described it as a poor service. For example, the cost of a litre of herbicide or weedicide is between GH¢7.00 and GH¢9.00. Framers felt that this was rather on the high side and tend to buy smaller repackaged quantities, which they usually dilute below the recommended concentration to cover their entire farms. The net result is that a farmer may not derive the full efficacy of the weedicides. This goes to show that the farmers are willing to use improved technology to increase their productivity. What is often lacking is the necessary means to acquire such seemingly expensive farming inputs which are mostly beyond their means.

With regard to timeliness, the farmers reported that timeliness of the operation of agro-input dealers was fair. Timeliness is defined as the seasonality of the operations of farmers. This to a large extent is dictated by the rainfall

pattern of the district. If a farmer decides to use a pre-emergent systemic herbicide for land clearing, the farmer expects that the agro-input dealer will have the requisite herbicide in stock and hence available in its season and time. The availability of agro-inputs is crucial to the success of any farm operation. The farmers reported that, this service was good. The agro-inputs were available when they needed them and were also in the right quantities needed.

Information was also sought by the study on farmers' perception about the agro-input dealers providing information on how to use the agro-inputs purchased. Farmers scored fair for the input dealers. By implication, not all the agro-input dealers were able to provide timely information on the use of the agro-inputs. Farmers intimated that input dealers sometimes withhold vital information on the expiry or banning of some agrochemical to the detriment of the farmer but indicated that such information gaps were filled by the AEAs and colleague farmers.

Finally, the study sought the views of farmers on the provision of credit facilities by the agro-inputs dealers. The farmers reported that it was poor. The study found out that the agro-input dealers did not operate any credit schemes. It was purely a cash and carry system.

With regard to agro-input dealers, there was no question about the fact that it is a wholly private sector business. The dealers themselves were happy about the policy change and they opined that since 1985 it had created other job opportunities for them. They were indeed grateful to government for this policy. However, the agricultural extension personnel, and farmers were of the opinion

that the agro-input dealers needed training on the storage, sale and safe use of these chemicals so they could offer after sales support. They also lamented about the lack of price controls and the flooding of the markets with fake agrochemicals. They expressed strong misgivings about the apparent lack of any monitoring system in place to check the activities of the agro input dealers. This perception was shared in a view expressed by a farmer informant:

> *Because agricultural extension delivery goes beyond input supply, there are new technologies to be introduced to farmers. There is training farmers should undergo in order to increase their production and productivity so their living standards could be improved. It is the extension services that could do these better. If private people are able to handle an aspect of agricultural activity successfully with farmers, the government could venture into other aspects such as extension services. An example is the Extension Development Fund Pilot Project in which the MOFA used private agricultural extension service providers to implement, by contracting out agricultural extension services in certain pilot districts (including Hohoe)* (Field Notes, 2009).

The import of this contribution is to caution that the implementation of the move from public to private agricultural extension service delivery should be phased out and not done drastically. This is on the basis that logistics in terms of materials and human capacities will need to be developed over a period of time to make the move from public agricultural extension service delivery to private

agricultural extension service delivery a success. The perception and attitudes of stakeholders are not favourable to full privatisation. The preferred approaches are mainly public cost recovering approach, pluralism and contracting. Historical evidences have shown that full privatization is not the sole solution for thousands of problems in the agricultural sector.

Finally, private participation of agricultural extension is a process that should be seriously considered by the policy makers before implementing it. However, there should be a public sector free-of-charge agricultural extension service along with other types of commercial extension services at least for another decade.

Factors that impede or promote private sector involvement in extension

Agricultural extension, whether public or private, operates in a context or an environment that influences the organization, form, and content of transfer activities (Morris, 1991). The dominant characteristic of that context is change. Because the changes affect all aspects of extension, the context should be examined and understood so that extension can be better managed. Based on a case study of EDF Pilot Project in the Hohoe District, it was revealed that five main factors can influence private sector involvement in agricultural extension. The factors include (a) Capacity Building of Private Extension, (b) Cost of Operations, (c) Logistical Challenges, (d) Changes in Attitudes of Extension Practitioners, and (e) Farmer Expectations.

a. Capacity Building

The critical factor that needs to be taken care of is the training of staff. The staff must be trained to ensure that the right competencies are developed. Facilitation and participatory approaches must be the hallmark of extension practitioners. The project implementation phase of the EDF lasted for six months for most of the participating Service Providers. This was after pre-implementation phase of the project which spanned a period of at least eighteen months (according to key informant, 2009). During this pre-implementation phase, important key activities of extension such as resource and personnel mobilisation and training, needs assessment surveys and development of implementation strategies were successfully carried out by the SP.

According to the report for example, farmers were full of praise for the introduction of the project which had exposed them to more efficient farming practices and, had led to improvement in their farm outputs and incomes. Prior to the arrival of the CRAN, six farming zones in the district had not benefited from any extension services. Also, farmers in the communities were very satisfied with the work of CRAN and perceived that the regular visits of their extension agents was adequate. The groups of farmers working with CRAN had adopted row planting of maize and had experienced a two-fold increase in their harvest together with an improvement in their technical know-how. A number of best practices were disseminated and internalized by the farmers. These included:

- Appropriate housing of animals using local materials that facilitated feeding, watering as well as the use of appropriate bedding materials.
- Recommended medication for treatment of ecto and endo-parasites

Some indigenous technologies were introduced, namely drip irrigation using bamboo and the trapping of rodents.

The success of the project hinged on the fact that much needed materials and human capacities were developed well ahead of the implementation phase of the project. Careful planning of activities as outlined in the EDF project report provides very useful land marks for the future development of private extension in Ghana if its implementation is going to be successful.

It is also noteworthy both public and private extension activities took place side by side during the EDF project. Services which could not be provided by CRAN such as veterinary extension (medication of livestock) were mopped up by regular public extension. This synergy between the two extension systems resulted in farmers seeing increase in their productivity.

b. Operational Cost

The second factor is the cost of operating the extension system. It must be noted that whether it is public or private extension provision, there is a huge financial outlay. It is as a result of declining funds on the part of government that, alternative means of extension has become an important issue for discussion.

The EDF report shows that private sector participation in the delivery of public good type of extension services is feasible and sustainable. However, it was discovered that the cost involved would be higher than what it cost to fund

the public extension system. The cost effectiveness of the EDF project was assessed using the following parameters; the average cost per farmer, the average cost per visit, and the average cost per community for all districts. These costs were compared with that of the regular cost to MOFA extension programmes. The comparison showed that overall, on average, the cost per farmer, per visit, and per community for all the districts for the SPs was higher than that of regular MOFA extension programmes. Eligible payments made under the EDF were disbursed as follows:

- Salaries and allowances (including transport allowance) of field staff.
- Cost of extension materials directly related to extension activities eg materials for demonstrations.
- Cost of organizing field days.
- Costs incurred in using mass media (e.g. radio and televisions, the EDF Secretarial had to approve the cost of such media before payment were made.
- Cost of assessing research findings and new technologies for dissemination to farmers.
- Cost of writing and submitting reports.

CRAN received a total of ¢540,000,000.00 from the EDF (2008) to fund the implementation of programmes and worked on the project for twelve months, six months longer than the other participating SPs. CRAN's pre-implementation phase covered a period of eighteen (months). In order to facilitate its work,

CRAN sub-divided their area of operation into 6 zones and deployed six extension agents in these operational areas to undertake the following activities: CRAN managed to initiate a total of one hundred and thirty one farmer groups who were at various stages of development toward the end of the project. Of this number, only nine had been fully developed. Another thirty-four were at an advanced stage of development. Total membership of the groups was one thousand, nine hundred and thirty- six with an average group size of fifteen. A key question that emerges is that, would privatisation of extension necessarily lead to a higher operational cost to farmers?

c. Logistical Challenges

The third factor that came up for discussion was that of logistical challenges. These are all the necessary agro chemicals, tools, equipment, motorcycles and vehicles needed by the service for smooth implementation of the extension service provision. This is closely related to financial commitments of the extension system.

The implementation of the EDF Project saw some challenges which are outlined. The late start of the project meant that the extension agents employed by the Service Providers were not in place at the start of the farming calendar. As a result they could not guide the farmers through land preparation and planting activities. To make up for this shortfall, demonstration plots were established on farmers' farms in order to transfer technology.

d. Changes in attitudes of extension practitioners (Attitude of Extension Staff)

By attitudes issues like work ethics, approach to work, drive to achieve results, conscientious, motivated, courteous, not looking down on farmers is what the thesis is talking about. The study found that the attitudes of extension agents needed to change from that of a supply-driven to a demand-driven form of extension service provision. It appears that private extension agents are more motivated by their personal achievement as set targets than cash incentives. In the words of one of the study's key informant:

> *Private extension agents with their meager resources and limited knowledge and expertise are able to achieve better results with farmers when compared with their MOFA counterparts. The reason is due to self- motivation, an innate desire to achieve success which is not common with MOFA extension agents. It is the same phenomenon one finds happening in our public and private senior high schools and junior schools; even though the public schools are generally better equipped and resourced with better qualified, private schools relying on mostly unqualified teachers and with poorly resourced facilities are able to achieve better results in the national final school certificate examinations using the same national curriculum. Ask yourself why this counter-intuitive results* (Field Notes, 2009).

The above comment probably underpins the call for private involvement in the provision of extension services in the country. It is notable that farmers who

had received extension services from CRAN mentioned that they had increased their productivity tremendously and were therefore expecting further interaction with the CRAN extension agents. They reasoned that the relatively short time of receiving help from the CRAN extension agents had been very beneficial and were wondering why such a good project had to be terminated.

e. Farmers Expectation

Another important factor is the farmer expectations. By farmer expectation, it is referring to all the gains and losses that farmers can derive from the extension system. This must be managed to ensure that farmers do not expect more than they deserve from the process. Most farmers expected that the project would give credit facilities to enable them implement the newly acquired technologies. This was however not part of the project design. This was a knotty issue which had to be addressed by both CRAN and the farmers.

Delays in the release of funds forced CRAN to seek funding from other sources to pre-finance their activities. This created avoidable hold-ups in implementation. The initial 10% of contract sum released to CRAN was therefore inadequate to facilitate a smooth project take-off.

Farmers in most of the project zones preferred operating individually than synergising with others. Group activities thrived only when there was a promise of financial assistance or some other package. Farmers reported that in the past various development agencies had espoused the need for farmers to form groups in order to access inputs and/or credit but these had never materialized. They were therefore skeptical about suggestions on group formation.

Considering the fact that most farmlands averaged half (0.5) of a hectare, farmers were reluctant to release part of their farmland for demonstration purposes. This arose from the ambiguity of beneficiary/ownership of produce from demonstration farms.

Emerging issues

It is been argued by Carney (1998) that the success of extension is unthinkable without the recruitment, training, resourcing and motivation of competent extension staff. Finding from this study shows that the SPs had a six-month period within which they used predetermined criteria to select their field extension staff. Some SPs however already had their own field staff. It is worthy of note that in the case of the SPs who did not have their own field staff, most of the extension staff they had recruited for the pilot study had to be discharged at the end of the pilot phase of the project. Rivera and Alex (2004) suggest that public extension has not often been able to meet their set objectives because the services have been criticised on several grounds such as being supply-driven, technically weak, patronizing only big farmers, insufficient coverage of and contacts with farmers, and practising top-down extension approach.

Some of the criticism is genuine while some has been levied without understanding the underlying causes which are beyond the control of extension workers. Some of these include poor pre-service education, little in-service training, burden of non-extension tasks, low salaries, low status, lack of opportunities for professional career development in comparison with other agricultural services, and needed coverage of a very large number of farmers

scattered over a very large area without having adequate operational budget or transportation facilities. Not surprisingly, the extension services have usually become the first victim of any major economic reform. For example, the number of public extension workers is drastically reduced due to structural adjustment measures as recommended by major donors. In addition, during the process of decentralization, extension services are marginalized and downgraded. Also, the remote areas, which extension agents rarely visit due to lack of transportation facilities, are increasingly being covered by NGOs. The global criticism has called for alternatives such as privatization of extension services, inclusion of other partners in extension delivery, contracting-out of extension work, and farmer-to-farmer extension modality. Rivera and Cary (1997) argue that private extension emanates from a continual reduction in government/donor funding as well as an expectation of a higher quality and delivery of extension services.

Swanson *et. al.* (1990) after reviewing numerous reforms in agricultural extension that have taken place in numerous developing countries caution that care should be exercised in trying to develop an extension system which is both efficient and beneficial to farmers. According to them, most public extension systems in developing countries have proved to be expensive and less efficient than intended during their launching which, in many instances, did more damage than benefit. This was because such extension reform programmes were experimental at best and were not subjected to vigorous and tested reform measures, which would have revealed a more appropriate method of implementation to achieve its stated goals. Rivera and Alex (2004) further

warned that the hasty alternate solutions in certain parts of the world, such as in Latin America, had led to a somewhat bitter realization that many of those extension reforms have indeed failed thereby, leaving farmers with no one to satisfy their knowledge, information, skills and institutional needs.

Ghana is one such country that has undergone considerable reforms in its agricultural extension and mainly sponsored by donor agencies, such as the World Bank, who put considerable pressure on governments to take extension reform measures. This pressure on the governments, without having viable extension alternatives, has further resulted in downgrading of extension services. It is important to note however, that, in view of pervading poverty and the need to plug the food deficit in achieving the Millennium Development Goal of sufficiency in food by the year 2015, the government of Ghana is once again keen to reform the extension system to make it more efficient and cost effective. Chapman and Tripp (2003:1) succinctly observe that:

> *Private extension is not a single entity, but includes a wide range of modalities, from the spontaneous emergence of private markets for certain types of advice and service to carefully guided public support for the development of private extension provision. A key to understanding private extension is the fact that it is possible to separate the provision of funding from the provision of service. Moreover, although a 'privatised' extension service may require significant public support, the most significant change is the development of a new incentive system, in which the quality and content of extension provision is more responsive to farmers' priorities. Therefore if privatised extension is to make a contribution, it will not embody the replacement of a monolithic*

public extension system by a similarly undifferentiated private system; instead, it will allow the development of a range of extension modalities and funding strategies.

The implications of these findings and other complementary results found in chapter four in relation to the development of privatised extension for development of agriculture in the Hohoe District in particular and the rest of Ghana in general are the subject for discussion in the next chapter.

Towards a Possible Model of Privatised Extension in Ghana

The review of examples of privatization from other parts of the globe, especially in Europe and Asia suggest that the privatization of agricultural advisory services is widespread, but it will have different impacts in different scenarios depending on the policy adopted. In most countries, the relative share of national resources earmarked for agriculture has been steadily decreasing (Rivera, 1997). The single most important feature of privatized extension systems is not a change in the source of funds but rather a change in the nature of incentives that drive information provision.

There are certainly many instances of dedicated public extension personnel who labour to meet the needs of client farmers. Nevertheless, much public extension is characterised by the mechanical delivery of messages and an almost total lack of feedback mechanisms. The key to privatized extension is to devise modalities through which farmers can express their requirements and evaluate the results. The ideal would be a competitive, private market for agricultural information, affordable to all and responsive to farmers' needs. The realities of agricultural development and the nature of agricultural information make that

ideal difficult to reach. Therefore, privatization represents a much more difficult series of experiments to elicit the most responsive and equitable system possible, under a given set of circumstances suitable for a particular context.

The signs so far indicate that some progress has already been made, but that we have much to learn and many more experiments to carry out and evaluate. Concerns include the skills and incentives available for the providers; the capacities of the farmers to contract for the service; the fact that some types of service are much more amenable to private provision than others; and the importance of assessing the equity implications of any reform in extension policy.

A conclusion of the FAO (2003) discussion on private extension was that considerable time and experimentation were required for the evolution of any comprehensive strategy. There is a crucial need for more experience, evaluation and analysis from the field to help guide that process.

It appears from the discussion of the study findings, literature and current debates that privatization of services should involve the development of new partnerships and associated capacities between government agencies, non-governmental and private sector actors. In previous services reforms in Ghana, government through public sector agencies on one hand retained overall strategic responsibility for services' policy and coordination as part of nationally inclusive processes where all key stakeholders articulate their demands openly and actively to government and service providers.

Private and non-governmental actors on the other hand must agree or contract to provide services for specific farming or client groups either through

public sector funding, through charges or cost-sharing arrangements. This is because, unlike the privatization of enterprises where the transition process can often be driven relatively quickly of up to two years duration, reform processes for extension services have been much more complex and time-consuming arising from the need for fundamental and transformational changes in the roles, responsibilities, and relationships of all actors.

Privatization processes, like the important parallel processes to reform the roles and capacities of the public sector and its agencies, are long-term ventures sometimes spanning a period of up to ten years for all actors and investors. To have reasonable probabilities of success, they have to be conceived and implemented in process and program paradigms, and not in short-term project modes that seek prematurely defined destinations and results before actors have been able to complete their journeys of discovery and capacity building (Rivera & Alex, 2004).

A central lesson from these findings suggest that privatization policies alone, no matter how worthy, cannot be translated into effective practice without well-conceived and designed systemic change processes (recognizing and fostering holism and interdependence among all actors) and contingent programs for local human capacity development.

Privatization processes such as that intended for extension services in Ghana usually involve deep and substantial change for public service ministries, their extension agencies or departments, and other private players. Yet, comprehensive change management programs to prepare actors for the complex

agendas and challenges of such reforms have been too often been ignored or superficially designed and planned. This has often led to disjointed efforts, a slow pace of institutional and inter-institutional learning, and even outright failure in fostering viable partnerships between the public and private sectors in renewing and improving services provision.

Public-private collaborations/partnerships, which was identified as a multi-institutional network of knowledge and information support for rural people in the conceptual framework, appears to be the way forward in facilitating opportunities to provide services to the poor farmers, while linking them to viable market opportunities. This was the case in South Africa, where public support to the South African Sugar Association helped that industry-based private entity to provide improved services to small-scale farmers. This initiative served the interests of the industry and helped the government to meet important social objectives. Pluralistic form of agricultural extension seems to be the way forward in designing an extension system which is sustainable, instead of it being monolithic. Gemo et al., (2005) in studies from Mozambique, illustrate the diversity of sources including many private-sector based from which farmers obtain information services and the need to consider varied approaches to delivery of those services.

To adequately respond to the complex needs of various resource poor farmers, extension service providers would need public sector program managers and field advisers with greatly enhanced competencies to plan and provide services using facilitation and problem-solving approaches with farmers in the

context of wider community needs. These more responsive and accountable approaches foster gradual emergence of stronger, more self-reliant local small-holder farming organizations (Marsh & Pannell, 2002).

There is growing uncertainty about what role extension is supposed to play in the development process. There is now a much-reduced emphasis on uniform messages (such as those provided by the T&V system). The need to involve farmers more in the extension process itself has been recognised for some time and a number of participatory and facilitation approaches have been developed (Röling, 1995; Coldevin, 2000). This study for instance, found that farmers were eager to talk to extension staff about their practical farming issues. They also preferred that the extension staff involved them in their problem identification and the designing of solutions to these problems. In the words of one farmer:

> *We have been farming for many decades, we have built a repertoire of knowledge for which we need guidance to help develop into solutions for our farming problems. Mostly extension staff come in to tell us what we should do. We want to be involved in designing programmes that are targeted towards us. It is our livelihood and we must have a say in it.* (Field Notes, 2009).

In addition, the study discovered that farmers needed extension information on a diverse range of rural development options including information on markets, rural industry and other income opportunities. These participatory and facilitation approaches constitutes a significant shift from the

traditional paradigm of technical expertise required for direct farming practices alone, to the broader competencies needed for effective responses, to the new social challenges faced by extension personnel. The competencies for social extension are principally in (a) the practice of participatory extension approaches and (b) local farmer organization development. Development and provision of extension personnel with those competencies are crucial to helping organize smallholder farmers and helping them to articulate demand for the services they need (Rivera & Alex, 2004).

What emerges from the UK experience in the privatisation of extension services is a clear distinction between demand-driven advisory services that farmers can buy from the private sector, and supply-driven initiatives through which government wishes to influence resource or land and other natural resource management decisions in the interest of its own policies. Where there exists a wide diversity in the scope and range of private services available to farmers, there is the general contention that farmers will have to spend a lot of time trying to source relevant information from a plethora of organizations, some with perhaps overlapping functions and responsibilities. This will necessitate some streamlining of procedures, roles, and responsibilities of such private extension providers by the government. This is one instance in which a government interferes in the private extension conundrum for the public good. Figure 4 depicts the Model of Collaboration for Agricultural Extension Services.

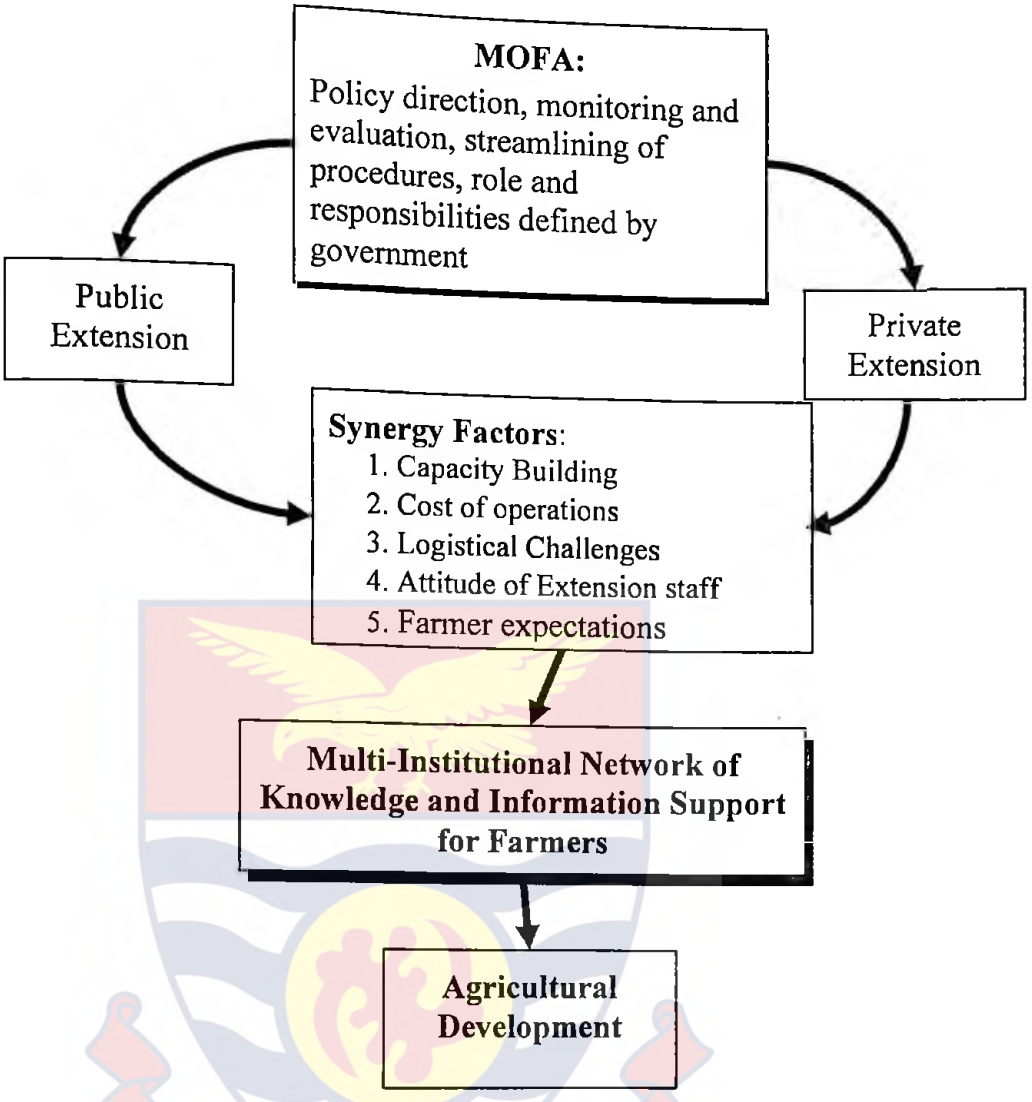

Figure 4: Model of Collaboration for Agricultural Extension Services

Source: Author's Construct, 2009

The Model is a two tier system with public and private extension provision running concurrently. The model gives the MOFA (or government) the role of ensuring policy direction, monitoring and evaluation of the extension system, defining the roles and responsibilities of all players in the extension conundrum.

With the concurrent running of both the public and private extension system, everyone will be taken care off in the 'market place'. The subsistence farmer will largely be taken care of by the public extension system. The policy

must ensure synergy taking into account the factors of Cost, Capacity Building and Attitude of Extension Staff. The hope is that if this is done then it will lead to Multi-Institutional Network of Knowledge and Information Support for Rural people and eventually lead to agricultural development.

Conclusion

This chapter has presented key findings from the primary data obtained from the study. A general picture which emerges from the analysis of results is the conclusion that the potential for agricultural development leading to productivity is great in the Hohoe District. What is evident is that regular MOFA extension is not able to adequately cater for all farmers in the district. It appears that private extension could cover the areas beyond the jurisdiction of regular MOFA extension raising the question of synergy between public and private extension. With dwindling government and donor funding for public extension activities, there will be the need for new private extension practitioners to fill this void.

What will be the acid test for a full blown private extension will be the willingness by farmers to pay for such extension services. A key question which also arises is whether government support for public extension should be curtailed immediately to allow more private extension participation or withdraw in a more phased way.

In the Ghana extension situation, private extension providers do not have the adequate personnel, both in numbers and required competencies to be able to succeed in public extension, at least not in the immediate foreseeable future. The

extension-research linkage also hardly exists for private extension providers. A plausible extension model derived from the findings of the study and ongoing extension reform debates would be a synergy in which the government directorate of agricultural extension services (DAES) collaborates with existing and incoming private extension providers. The government then plays the role of providing resources to train and equip these actors, while ceding some of the core extension services to them in a phased manner.

The expected outcome is that the private extension providers will eventually largely take over the provision of extension services to farmers. There would also be gradual phasing off of government subventions to fund extension programmes with the drive to gradually pass on the cost of extension delivery to farmers. Next, the summary, overall conclusions, and recommendations of the research are presented.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents a summary of the background information, objectives, methodologies and the major findings of the study. The main objective that guided this study was to examine stakeholders' perception of private sector participation in agricultural extension delivery process in the Hohoe District of Ghana.

The specific objectives were to:

1. Identify private sector institutions involved in the provision of agricultural extension services in the Hohoe District.
2. Determine the nature and scope of private participation in agricultural extension.
3. Examine the perception of the stakeholders (farmers, Extension officers and private participants) towards private sector participation and eventual privatization of agricultural extension especially, on willingness of farmers to pay for extension services.
4. Discuss the factors that impede or promote private sector involvement in agricultural extension in Ghana based on lessons learnt from the Pilot EDF project.

5. Develop a model for collaboration between public sector and private sector agricultural extension in Ghana.
6. Provide recommendations for establishing and improving privatized extension system in Ghana.

The following research questions were posed to answer the specific objectives:

1. Which private sector institutions are involved in the provision of agricultural extension service in the Hohoe District?
2. What is the nature and scope of private participation in agricultural extension?
3. What are the perceptions of stakeholders towards private participation and eventual privatization of agricultural extension especially, on willingness to pay for extension services?
4. What are the factors that impede or promote private sector involvement in agricultural extension in Ghana and what lessons do we learn from the Pilot EDF Project?
5. What model of public-private agricultural extension collaboration could be useful and sustainable to the development of agriculture in Ghana?
6. What recommendations were unearthed by the study?

Hohoe District was chosen purposively for the study because of its uniqueness as being one of the least developed districts with only two of its parliamentary constituencies being predominantly urban. The researcher adopted a combination of methods from both qualitative and quantitative research designs. This combination of research methods had been suggested as the best for studying

issues as complex and pluralistic as agricultural extension development and agricultural productivity linkages (Place, Roth, and Hazell, 1994). To this end, the researcher used a combination of both quantitative and qualitative research methods recommended by (Rivera & Alex, 2004; Chambers, 1994). These authors had used these approaches to capture successfully stakeholders perceptions on resource management changes over time, adaptations to change, intra household differences, and the subjective perspectives of individual extension users. Specifically, key informant interviews, focus groups discussions and observation techniques were employed in their studies.

The population for the study included all farmers, private extension providers, agro-input supplier, extension agents and management of DAES of MOFA in the Hohoe District. A multi-stage sampling procedure was followed to draw the final sample for the study. In all, 100 farmers were selected for the study. Fifty farmers were drawn from a MOFA extension provision area, while the remaining fifty were selected from a private extension service provision area (CRAN). The key informants were selected purposively because they had requisite knowledge on the evolution of agricultural extension in Ghana. They included the District, Regional and National Directors of the DAES of MOFA, Extension field agents (MOFA and CRAN) and Agro-input dealers in the Hohoe District. All the farmer respondents were also household heads.

The researcher developed a checklist built around the specific research questions for survey questionnaire items for the farmers and key informant interviews. The questionnaires and interview schedules were then validated

through expert reviews and pilot testing in two contiguous communities. The researcher then made some modifications to improve the final data collection tools and held key informant interviews with a representative each from the sample, and administered questionnaires individually to the farmers to collect primary data between September and December 2009. The data collected was then analysed and a summary made of the findings.

Summary of Findings

The first research question addressed was, "Which private sector institutions are involved in the provision of agricultural extension service in the Hohoe District?" The study found that numerous NGOs and parastatals are involved in extension activities in the Hohoe District of Ghana. Notable among these is CRAN which is involved in micro-finance and agro-business promotion. There is however, little or no synergy among these private extension agencies or with government/public sponsored extension. A typology of extension service provision was also elucidated. Training, credit, input dealership and provision of specialized services were found as elements of the typology of extension service provision.

Secondly, the study found that even though private extension service providers operate to some scale in the study area they do so by covering the farming areas beyond the operational reach of DAES of MOFA. The study further found that private extension practitioners do not largely have permanent field extension agents. Even where such agents are on permanent employment, they are poorly trained in extension methodologies and often lack the requisite skills.

The study also found that internal structures and mode of function of both public and privates extension service providers in the district remain predominantly monolithic with each player executing and promoting its own agenda. Subsequently, there is overlap of or redundancy of information dissemination to farmers. Additionally, the study found that private extension agents are self-motivated and driven by an inherent will to achieve positive outcomes from extension programmes in spite of their lack of expertise. This self-motivation is often lacking among the public extension field agents.

The second research question posed was, "What is the nature and scope of private participation in agricultural extension?" The study found that the private sector is involved in agro-input dealership. This entails the stocking, repackaging and retailing of agrochemicals, (fertilizers, pesticides, weedicides, rodenticides) agro-implements, seeds and to a very little extent training in the use of agrochemicals.

The private sector was also found to be involved in microfinance schemes that engaged in small-holder credit schemes. They employed inventory credit schemes to encourage the small-holder farmer to access agricultural credit. The private sector was also found to be involved in the area of training. The array of training topics and issues among others included, group formation and dynamics, entrepreneurial skills, marketing strategies, HIV/AIDS, environmental and conservation issues, gender roles and family life. These were geared towards improving the livelihood of the farming clientele. The private sector was involved

in the area of marketing and distribution of agricultural produce which they had completely monopolized.

The third question asked was, "What are the perceptions of stakeholders towards private participation and eventual privatization of agricultural extension especially, on willingness to pay for extension services?" The study found that, the stakeholders (agricultural extension personnel and farmers) have similar views towards private participation in agricultural extension services delivery. They have considered that private participation of agricultural extension is hindered in the Hohoe District due to highly variable agro-climatic imbalances, highly variable socioeconomic imbalances, big population of small and marginal framers and a big majority of resource poor farmers. The majority of the farmers agreed that private participation is not desirable in the interest of the resource-poor farmers. This they argued, would lead to socio-economic inequality, the negligence of the resource-poor farmers and eventually, may lead to crucial socio-economic problems. The resource-poor farmers might leave farming and thus increase rural-urban migration.

The study also found that farmers and extension personnel all agreed that private participation would only enhance profit oriented extension services and would not deal effectively with resource-poor farmers. Resource poor or small-scale farmers would be neglected by these private extension services and would be automatically eliminated from the system.

In terms of food crop production, extension service could be delivered by either public or private extension service, but cost should be totally borne by the

government, in this case, the MOFA. Government (MOFA) could contract it to a private company, NGO or farmer company.

Private participation in extension is possible for the crops that are either mainly export oriented (cocoa, coffee, pineapples, mangoes or commercial type vegetables) and for medium and big farmers. Their perception was that respective authorities should implement the private participation concept on a selective basis only.

With regard to agro-input dealers, there was no question about the fact that it is a wholly private sector business. The dealers themselves were happy about the policy change and they opined that since 1985 it had created other job opportunities for them. They were indeed grateful to government for this policy. However, the agricultural extension personnel, and farmers were of the opinion that the agro-input dealers needed training on the storage, sale and safe use of these chemicals so they could offer after sales support. They also lamented about the lack of price controls and the flooding of the markets with fake agrochemicals. They expressed strong misgivings about the apparent lack of any monitoring system in place to check the activities of the agro input dealers.

The perception and attitudes of stakeholders are not favourable to full privatisation. The preferred approaches are mainly public cost recovering approach, pluralism and contracting. Historical evidence has shown that full privatization is not the sole solution for thousands of problems in the agricultural sector.

Finally, private participation of agricultural extension is a process that should be seriously considered by the policy makers before implementing it. However, there should be a public sector free-of-charge agricultural extension service along with other types of commercial extension services at least for another decade.

With respect to the fourth research question which was, "What factors impede or promote private sector involvement in agricultural extension in Ghana based on lessons learnt from the Pilot EDF Project?" The findings of the study showed that the factors that could impede or promote private sector involvement in agricultural extension included capacity building of private extension, cost of extension services operations, logistical challenges, attitude of extension staff or practitioners and farmer expectations.

Finally, the study considered the issue of a model of public-private agricultural extension service system. In addressing this issue, the study posed this question that: "What model of public-private agricultural extension collaboration could be useful and sustainable to the development of agriculture in Ghana?" One of the most important findings from this study on this research question is the amount of time required to implement a transition from conventional public sector extension to a more differentiated extension system that takes advantage of private service providers. Even in the European examples in which public services were privatized in an environment of highly commercial agriculture, adequate time had to be allowed for the transition. In the case of Chile, the developing country with the longest and most extensive experience at implementing private extension

modalities, the system is still evolving after 25 years. The findings of the study suggest that any policy aimed at introducing private extension needs to plan (and budget) for considerable experimentation and flexibility.

The experience of many experiments in privatized extension indicates that human resource development may be one of the most important bottlenecks. No extension system, public or private, can function without adequately trained and motivated personnel. The findings of the study suggest that any plans for the establishment of a privatized extension service in Ghana cannot neglect attention to the public role in agricultural education. In addition, extension agents working in the private sector will require business and management skills that are not currently found in most agricultural curricula.

A privatized extension system in Ghana would only function if farmers are capable of articulating their needs, managing and enforcing contracts with private extension providers, and evaluating the results. The findings of the study, subsequently reveals that farmers would need a platform to be managed by some type of farmer group or association (unless farmers have very large holdings or are willing to pay for individually tailored advice).

The findings of the study further reveals that, in order to ease the transition to the delivery of private extension that is more responsive to farmer needs, and also represent the development of more responsive local government that can deliver public (agricultural and other) services, is to channel some of the contracting and evaluation of private extension through decentralised government structures.

Within the context of this study however, a multi-institutional network of knowledge and information support for farmers is proposed. This is a synergistic relationship that incorporates the good tenets of both public and private mode of agricultural extension service delivery. It is also a situation where stakeholders' ability to see and do their farming and agricultural development work differently. Challenged by the learning process to construct, test and restructure knowledge with regard to their vocations, stakeholders are able to form or develop a mental framework that will enable them to take some new but deliberate actions, to improve their practices to solve their own problems. The improvement in the capacity of stakeholders to take informed decisions and actions appear to be consistent with dee Zeeuw's (1992) concept of improvement in "collective competence" or improved understanding and decision-making through learning.

Figure 5 show the relationship between enhanced knowledge generated (provision of extension services either by public or private), improved understanding got, improvement in decision-making ability and actions taken by stakeholders.

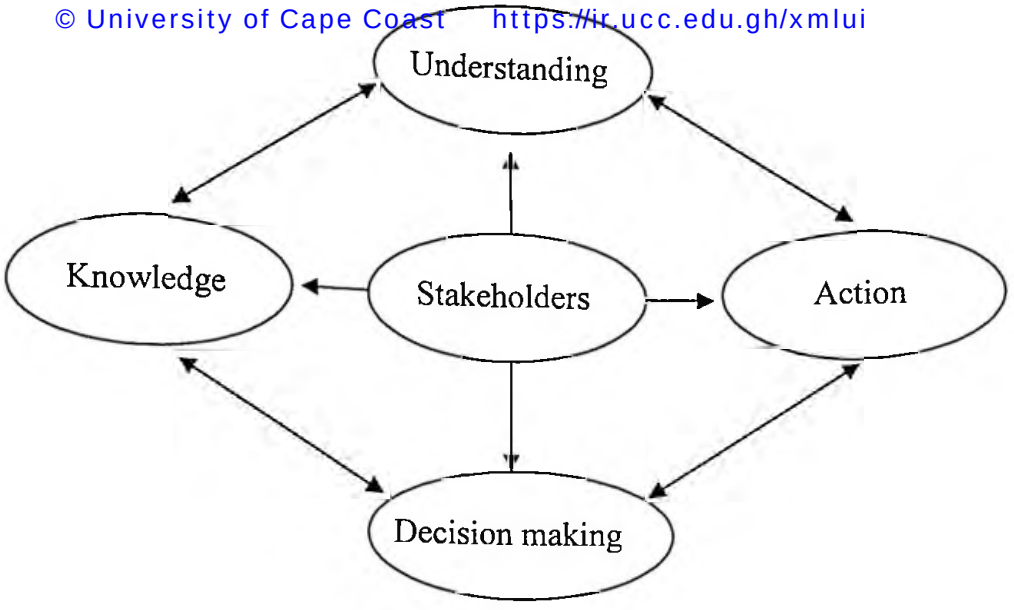

Figure 5: Relationship between Knowledge, Understanding, Decision-Making and Action

Source: Author's Construct, 2009, (After dee Zeeuw, 1992)

Implications for Theory

The main field of study that this research has aimed at contributing to is the knowledge gap in the quest for an alternative to the public-funded extension system existing in African countries such as Ghana in the face of dwindling donor funds. A gap which still needs to be filled with cogent evidence through systematic empirical investigations. The contributions of the summary of evidence found in the study to theory building are presented thematically in these sections.

Towards developing an alternative extension system

The general literature on extension development suggests that properly trained and resourced frontline extension staff are motivated enough do their job well and strive for success at all costs. Evidence from this study suggests that

regular public extension staff were not that self-motivated. The study however, showed that in spite of their meagre resources, it was rather the private extension frontline agents who were hungry to achieve positive results at any cost. This extends the knowledge in the development of extension literature. This calls for synergy between the private and public extension providers to collaborate in this endeavour to develop an extension system that is sustainable, harnessing the comparative strengths of each party.

Findings from the study also confirm the fact that a national extension service which is built on a monolithic structure is not sustainable. A more pluralistic form is what will be robust in a typical developing country setting where various sources of information and inputs supplies have to be brought together in a bid to increase productivity to meet the needs of a rapidly expanding population. This finding in particular also supports the general view that developing economies are rather slow in implementing decentralized reforms.

Implications for Policy and Practice

This study is the very first of its kind to focus exclusively on exploring ways to develop agricultural extension in Ghana, especially in the development of an alternative extension system. There has been no such single study in the District and no prior study on the question of privatized extension anywhere else in Ghana. Evidence from the study shows public extension to be a well-grounded source of providing timely solutions to farmers on their farming practices. What is lacking is farmers' active participation in the cost sharing components of extension costs. This finding from the study could be used by MOFA to invite other extension

providers and other stakeholders to discussions on how to synergise for an effective and sustainable national extension system. This could go a long way to help with the implementation of the central government's poverty alleviation programmes through increasing agricultural productivity. In fact, findings from the study could be used as a possible leverage to broach the question as to whether it is not about time that the existing national extension system got a review in a bid to reducing pervasive inefficiencies and mediocrity in the system.

Conclusions

From the findings of the study it can be concluded that the current form of public agricultural extension services where farmers obtain extension services free-of- charge is not sustainable in the face of dwindling funds from government and donors. The study has shown that privatised agricultural extension in Hohoe District was feasible but must address concerns raised by resource poor farmers.

This is borne out by the fact that there are several operators in the extension system and synergy can be provided to ensure an effective extension system with private participation. The system should address the concerns of resource-poor farmers, ensure minimal payment for services, introduce capacity building in technical and agro-business management skills, ensure farmer based organizations are functioning and be underlined by a demand-driven philosophy. Extension services need to be more proactive and demand-driven in order to fulfill its mandate in a sustainable way. In order to do this, there should be synergy among government and the various stakeholders involved in the delivery of extension

programmes to farmers to formulate and implement the best processes for cost sharing/effectiveness.

Recommendations

It is not easy to make a single recommendation as a solution to a problem as complex as privatisation of extension services. As noted by Mbiba (2002) in the case of Urban Agricultural Extension Services in Zimbabwe, it is problematic to establish a single system that would provide a panacea for the development of a privatized extension system in the Hohoe District in particular, and in Ghana in general. These recommendations are based on findings from the study:

1. Policymakers should draw links to other areas that have traditionally been public responsibilities (such as agro-input dealership, telecommunication services and revenue collection) in considering strategies to make better use of privatized extension modalities. Public agricultural research is undergoing significant changes of its own, and these need to be examined in the context of the possibilities for private extension delivery.
2. The means of communicating extension information are diversifying rapidly, and ICTs offer possibilities for improving the efficiency of public media as well as opening new horizons for private information delivery. Policies that support the development of a comprehensive ICT policy can make a big difference to the performance of private extension options.
3. A shift towards privatized extension services in Hohoe District can only be justified if it improves the efficiency of service and meets the needs of the majority of the farming population. Therefore, a privatized extension

system in Hohoe District would have to be structured so that the majority of resource-poor farmers receive better service than they do under the public extension system.

4. Farming areas and themes that are not amenable to certain type of privatised extension approaches should remain as public responsibilities. It is likely that it will take a longer time for any privatized extension system to reach more remote areas, for instance.

5. As well, public agricultural policies that focus on themes such as resource conservation will require more time to find a place in privatized extension delivery. Finally, at least until the emergence of a truly diverse and competitive market of private extension providers, there will be the need for a public role in regulating the provision of private extension.

6. Extension services need to be tailored towards farmers need and aspirations. The ground-up development of extension programmes should become the mantra if privatised extension is to succeed. This submission is based on the fact that farmers' propensity to pay for extension services is underpinned by the relevance and perceived needs of the farmer. There should also be a significant shift in the attitudes of extension agents towards self-motivation to produce quality and positive results as is being pursued by private extension agents who often lack requisite skills, expertise and resources.

7. Farmers need to be informed and educated by the MOFA through an information, education and communication (IEC) programme on the need

to pay for extension services against the background of changing global trends which make public extension untenable and unsustainable. The District/Municipal/Metropolitan Assemblies of the Local Government System should play a lead role in this IEC. The MOFA should also initiate and implement policy to this end. Farmers on the other hand have to be encouraged to approach their farming activities with business-like mind sets even if the land holdings are minimal.

8. Synergy should be sought for all the players in extension both private and public in developing and resourcing a national extension system which moves away from a monolithic setup towards a more pluralistic extension system. The MOFA should play a lead role in initiating and implementing policy to achieve this synergy. The MOFA, FBOs, Input Dealers and all the identified stakeholders should create a platform for effective collaboration and cooperation. The FBOs should act as governor of the platform.

9. There should be a gradual rollout of privatised extension for the Hohoe District, which should be phased in order to determine the most appropriate form of such extension system which would meet the needs of farmers. Various forms of cost sharing/cost effective methods under privatised extension should be further explored to determine suitability and appropriateness.

Evaluation of the Research Methodology

In this section the research methodology is reflected upon to evaluate its appropriateness, the challenges it presented and what aspects of it can be improved in addressing a similar research problem. The combine quantitative and qualitative research approach was found to be useful for understanding stakeholder perception on private sector participation in extension delivery in Ghana. The research approach allowed the researcher to examine a complex multi-faceted phenomenon, although, from a narrow empirical perspective. The selection of one out of the one hundred and seventy districts in Ghana for the study design however, limits the external validity (generalization) of the research findings, although, it is expected that cases (districts) with similar extension delivery context can learn from it. Notwithstanding, the use of a relatively 'new district' presents a new dimension of ideas that can influence how a new privatized extension can successfully be designed, implemented and evaluated.

A multiple case study design with wider scope including both crop and livestock farmers, may have enabled the study to compare and test conceptual ideas regarding extension privatisation for more depth and detail, but given the limitations posed by time and resources, a single case district and crop farmers were used. To improve the quality of the findings however, the study adopted a multiple data collection technique (triangulation), involving the use of questionnaires, key informant interviews, and documentary analysis to validate the data collected. This provided adequate information to answer the key research

questions with reasonable confidence and detail on the research problem. It is within this background that the following suggestions for future research are made.

Suggested Future Research in Privatised Extension System in Hohoe District

The conclusions as well as the limitations of this study provide insightful avenues that could be examined further by future research. Since the topic under study has focused on the development of privatized extension system in Hohoe district, the scope of future research on the issue should be widened to include factors such as marketing, distribution, and other sources of income. It would also be interesting to see the result of a study when other farmers apart from those cultivating crops are included, and also if the issue is examined in other Ghanaian districts devoid of the unique characteristics of Hohoe. This would help to better understand the practice of private extension, its prospects and challenges in order to better inform policy and generate pragmatic views and strategies required to harness the benefits of privatized extension for Ghana.

There is clearly the need for pragmatic policies and realistic practices to be adopted by the central government of Ghana (MOFA) and indeed local authorities to develop private extension in the face of certain threat from dwindling central funding. It is hoped that with the evidence unearthed in this study, and the suggested recommendations in place, Ghana might be able to attain food sufficiency and ensure sustainable livelihoods for Ghanaians in the coming future.

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APPENDICES

APPENDIX A

INTERVIEW SCHEDULE

(a) What form does private extension take in Hohoe?

(b) Who are the private extension service providers in Hohoe District?

(c) Who are their clients?

(d) Are the clients different from that of regular extension?

(e) How different are the modes of practice of private extension as compared to that of regular extension?

(f) Are their success rate better/lower?

(g) What are the attitudes and preferences of Extension Officers (stakeholders) towards successful privatization of agricultural extension in Ghana? (ie. do Extension Officers (stakeholders) overwhelmingly support the notion of privatized extension or do they differ in their opinions?

(h) If majority of Extension Officers (stakeholders) support the notion, how do they want private extension supported/implemented to achieve sustainable results

(i) What are their recommended success factors?

(j) If majority of Extension Officers (stakeholders) do not support private extension, what viable alternative do they propose in the face of dwindling central government resources/support for regular extension visa vis the government's call for private involvement in the service as is the practice globally?

APPENDIX B

QUESTIONNAIRE FOR FARMERS

Kindly read through the following statements and provide answers which best describe your situation. All information provided is treated as confidential.

Demographic Characteristics of Farmer

1. Name of village……..

2. Gender 1) Male [ ] 2) Female [ ]

3. Age as at last birthday:……years.

4. Highest educational level attained. Please tick

1) No formal education [ ] 2) Primary education [ ]

3) Middle/JSS education [ ] 4) Secondary/SSS/Technical [ ]

5) Diploma [ ] 6) Degree [ ] 7) Others (specify)

5. Name four (4) major staple crops (eg cassava, maize, plantain, sweet potato, cowpea etc) that you grow?

6. Name any minor staple crops that you grow?

7. What cash crops do you cultivate? (eg cocoa, oil palm, citrus etc)

8. Please list all vegetables (eg pepper, okra, garden-eggs, tomato, alefu etc) that you grow for commercial purpose only?

9. Please tick as many of these animals that you keep:

1) Cattle [ ] 2) Sheep [ ] 3) Goats [ ] 4) Pigs [ ]

5) Guinea pigs [ ] 6) Rabbits [ ] 7) Fowls [ ] 8) Guinea Fowls [ ]

9) Ducks [ ] 10) Snails [ ] 11) Bees [ ] 12) Fish [ ]

13) Others (specify)

10. What is the size of your family including dependents?

11. What is your residential status? 1) Native [ ] 2) Migrant [ ]

12. How did you acquire your farmland?

1) By inheritance [ ] 2) Purchased [ ] 3) Hired [ ] 4) Abunu [ ] 5) Abusa [ ] 6) Abusa + Fees [ ] 7) Abunu + Fees [ ]

Others (specify)

13. How many acres of farmland are you cultivating now?.....(could be in poles)

14. How many years have you been farming? .....

15. From which of these additional sources do you also receive agricultural information?

1) Radio (FM) [ ] 2) farmer friends [ ] 3) TV [ ] 4) Newspapers [ ]

5) Agricultural Science Teacher in the community [ ] 6) Textbooks [ ]

7) Internet [ ]

Nature & Scope

16. What type of extension services do you access?

17. Do you find these services useful? Yes [ ] No [ ]

18. How often do you access such services?

Service	Frequency			
	Rarely	Often	Very Often	Always

19. Which inputs do you require most in order of frequency?

20. Which inputs do you have difficulty in getting?

21 How can extension activities be improved in your area?

22. Indicate which of the following services you access and show the extent to which you find useful? Tick as it applies to you.

Service	Yes	No	NU	U	VU
Seeds					
Agro chemicals					
Agro implements					
Information to go with use of inputs					
Credit (inputs)					
Fishing gear					
Training					
Veterinary Drugs					

Legend

NU - Not Useful

U - Useful

VU - Very Useful

23. How often do you access these services? Tick as it applies to you.

Frequency of Service	1.Never	2.On demand	3.Often	4. Always
Seeds				
Agro chemicals				
Agro implements				
Information to go with use of inputs				
Credit (inputs)				
Fishing gear				
Training				
Veterinary Drugs				

24. If you were under the piloted phase of private extension please answer this question.

Service	2006					2007 to present				
Frequency of AEA visit	Nil	Wkly	BiWk	M	O D	Nil	Wkly	BiWk	M	O D

Service	2006			2007 to present		
Availability of Inputs	Not avail	Scarce	Avail	Not avail	Scarce	Avail

Service	2006		2007 to present	
Cost of inputs	Within Means	Beyond	Within Means	Beyond

Service	2006		2007 to present	
Quality of inputs	Bad	Good	Bad	Good

Factors

25. Are you aware that the government has ceded the supply of agro inputs to the private sector? Yes [ ] No [ ]

26. The following factors contributed to the change in policy of allowing the private sector to take over agricultural inputs sales and distribution. Read through and indicate how you feel on the given scale.

Factors	Strongly Disagree	Disagree	Agree	Strongly Agree	Indifferent
General design to establish and support market-led growth in agriculture					
Trade and foreign exchange liberalization					
Interest rates and commodity prices deregulation					
Removal of subsidies					
Privatization of input procurement, distribution and marketing					
Decentralization of the public administration system					

Perceptions

27. What merits do you find in private participation in agro inputs? List.

28. What do you have against government allowing private participation in agro inputs?

29. How will you rate private sector participation in agro input supply under the following:

Service	1. poor	2. fair	3. good	4. V good	5.excellent
Cost					
Timeliness					

Availability					
Quantity available					
Support information					
Credit supply					

Fee for Service

30. If next season you are asked to pay for extension advice will you be willing to pay? Yes [ ] No [ ]

31. If yes, which areas will you be prepared to pay for? Please tick.

1. Application of pesticides [ ]
2. Application of fertilizers [ ]
3. Row planting [ ]
4. Veterinary Information, etc [ ]
5. Other (specify)

32. At what level of charge will you be willing to pay?

33. If no to Q32 why?

34. How will you make payment? Eg. AEA charges on information on how to use a product.

35. If you are going to pay for the information what do you expect from your service provider? Please tick as it applies to you.

1) General information about products. [ ]

2) Specific information that will solve your problem/suit a specific need [ ]

Model

36. What in your opinion can your service provider do to improve services?

Thank you for your precious time

APPENDIX C

QUESTIONNAIRE FOR AGRICULTURAL EXTENSION AGENTS (AEA)

Kindly read through the following statements and provide answers which best describe your situation. All information provided is treated as confidential.

Demographic Characteristics of AEA

1. Name of Operational Area.....

2. How many communities are in your operational area?

3. What is the average number of contact farmers per community in your operational area?

4. Gender 1) Male [ ] 2) Female [ ]

5. Age as at last birthday .....

6. Highest educational level attained

   1) Agric College Certificate [ ] 2) Diploma [ ] 3) Degree [ ]

   4) Others (specify)

7. How many years have you worked as an AEA?

Nature & Score

8. Which of these core areas of agricultural extension is the private sector involved in your municipality? a) Input supply [ ]

   b) General training [ ] c) Training is tied to use of agro inputs [ ] d) Input credit [ ] e) Any other [ ]

9. In your operational area, how many communities have agro input shops?

10. How many agro input shops are located in your municipality capital?

11. Do these agro input shops have veterinary supplies, fishing and irrigation equipment? Yes [ ] No [ ]

12. Are you involved in the sale or distribution of these agro inputs? If yes, state the type of inputs involved? eg. Agro chemicals, agro equipment, fishing gear etc.

Perception

13. What is your understanding of private sector participation in agricultural extension services?

14. Are you aware government has ceded the agro input supplies to the private sector?

15. In your opinion, do you see private participation as a step towards privatization of agricultural extension services in Ghana?

16. Are the agro input outlets independent or they are outlets for specific major input companies?

17. Is there the presence of a major agro input dealer such as AGRIMAT, WIENCO, DIZENGORFF, SIDALCO etc. in your municipality?

18. After purchasing agro inputs (pesticides etc), do the farmers still approach you for information on their usage?

19. Do you trust information given to farmers especially on pesticides by agro input dealers? Yes [ ] No [ ]

20. If no to Q19 why?

21. In your opinion, is the current arrangement where the public sector has ceded the agro input supplies to the private sector a good decision?

Yes [ ] No [ ]

22. If yes to Q21, why?

23. If no to Q21, why?

Fee for Service

24. Do you see any possibility of the public sector completely ceding the entire agricultural extension sector to the private sector? If yes, give reasons and if no, give reasons.

25. What category of farmers in your operational area will be willing to pay for extension information? 1) Subsistence farming [ ] (2) Vegetable farmers Others [ ]

Factors for Private Participation

26. The following factors contributed to the change in policy of allowing the private sector to take over agricultural inputs sales and distribution. Read through and indicate how you feel on the given scale.

Factors	Strongly Disagree	Disagree	Agree	Strongly Agree	Indifferent
General design to establish and support market-led growth in agriculture					
Trade and foreign exchange liberalization					
Interest rates and commodity prices deregulation					
Removal of subsidies					
Privatization of input procurement, distribution and marketing					
Decentralization of the public administration system					

Model

27. Do you have any working relationship with those involved in agro input supply? Yes [ ] No [ ]

28. What do you do with them or for them?

29. How will you rate your relationship with the agro input dealers?

a) poor [ ] b)fair [ ] c) good [ ] d) very good [ ] e) excellent [ ]

Thank you.

APPENDIX D

INPUT DEALERS IN THE HOHOE DISTRICT

Nature & Scope

1. Which of these categories of inputs do you deal in: Please tick.

1) Seeds [ ] 2) fertilizers [ ] 3) pesticides [ ]

4) farm equipment [ ] 5) fishing gear [ ] 6) veterinary supplies

[ ] Other (specify)

2. What additional services do you provide for your clients? Please tick

1) Training [ ]2) Credit [ ] 3) Information to back input purchased [ ]

4) marketing [ ]

3. Who are your main clientele? Please tick.

1. Farmers [ ]
2. AEAs [ ]
3. Worker [ ]
4. Others specify

4. How do you secure your inputs? Please tick.

1. Supply from a major agro input dealer [ ]
2. Direct importation from abroad [ ]

5. Do you provide usage information at the point of sale? Yes [ ]

or on demand [ ]

6. Do you repackage inputs (fertilizer, pesticides) to suit the needs of your clientele? Please tick. Yes [ ] No [ ]

7. Do you provide credit facilities to your clientele where they are not in the position to pay outright? Yes [ ] No [ ]

8. If yes to Q7, on what basis do you provide inputs on credit? Please Tick as may apply to you.

   a. Long standing relationship with client [ ]

   b. On recommendation by AEA [ ]

   c. On collateral [ ]

   d. On recommendation by another farmer [ ]

   e. Others specify.

9. If no to Q7, why?

10. How difficult or easy are you able to recover the credit given out?

    1. Difficult [ ] 2. Fairly Difficult [ ] 3. Easy [ ]

    4. Very easy [ ]

Perception

11. Are you aware that the government has ceded the provision of agro inputs to the private sector? Yes [ ] No [ ]

12. The following factors contributed to the change in policy of allowing the private sector to take over agricultural inputs sales and distribution. Read through and indicate how you feel on the given scale.

Factors	Strongly Disagree	Disagree	Agree	Strongly Agree	Indifferent
General design to establish and support market-led growth in agriculture					
Trade and foreign exchange liberalization					
Interest rates and commodity prices					

deregulation					
Removal of subsidies					
Privatization of input procurement, distribution and marketing					
Decentralization of the public administration system					

13. What is your view of the change in policy? 1. Very Bad [ ] 2. Bad [ ]

3. Good [ ] 4. Very good [ ] 5. Excellent [ ]

14. Give reasons for your answer to Q13 above?

Fee for Service

15. Do your clients pay for information relating to the use of your products?

16. Do you factor the cost of information support in the cost of the inputs?

17. What major problems do you encounter as an input dealer?

18. What suggestions do you have to resolve these problems?

Model

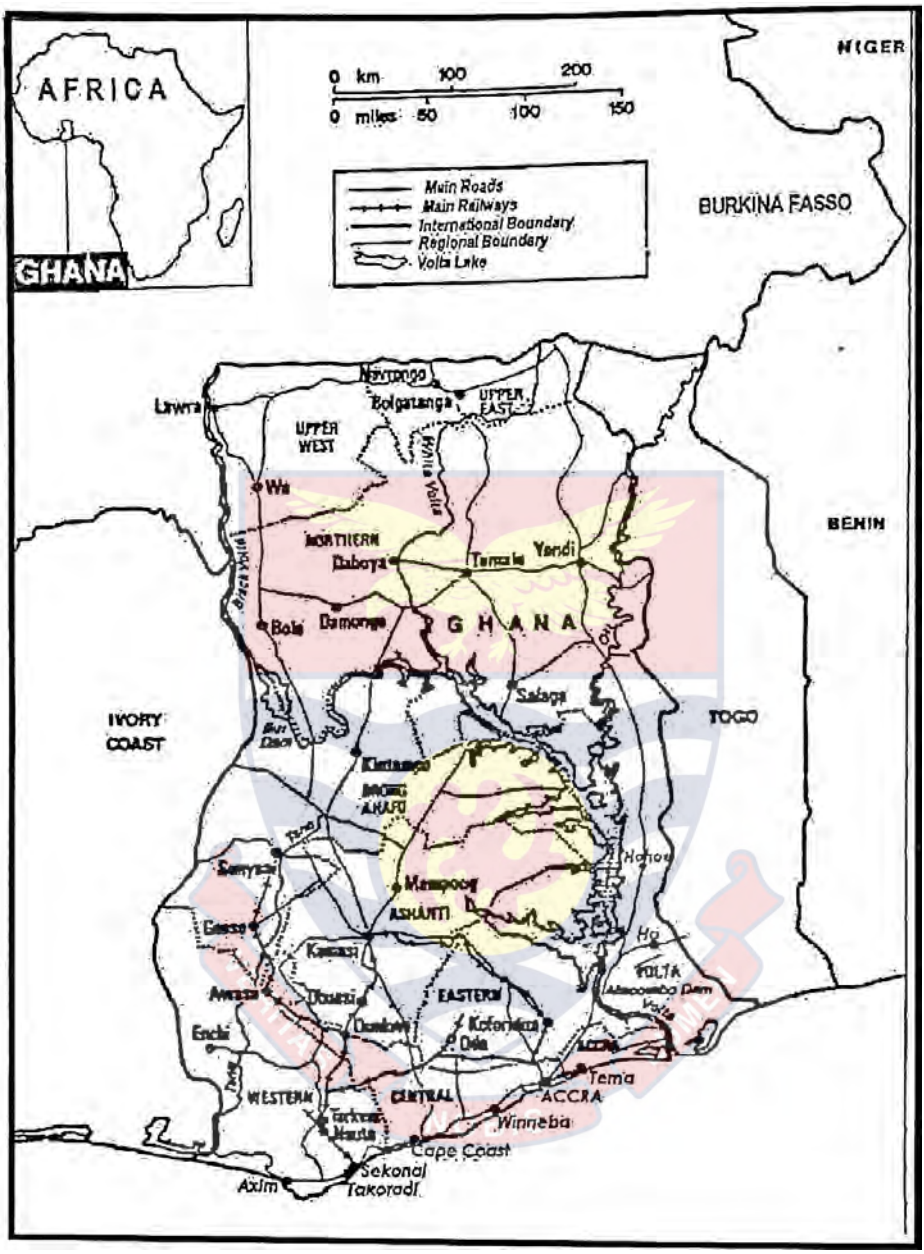
19. Do you relate with the MOFA staff in your municipality? Yes [ ] No [ ]

20. If yes to Q19, what exactly do you do with MOFA staff?

21. If no to Q19, why?

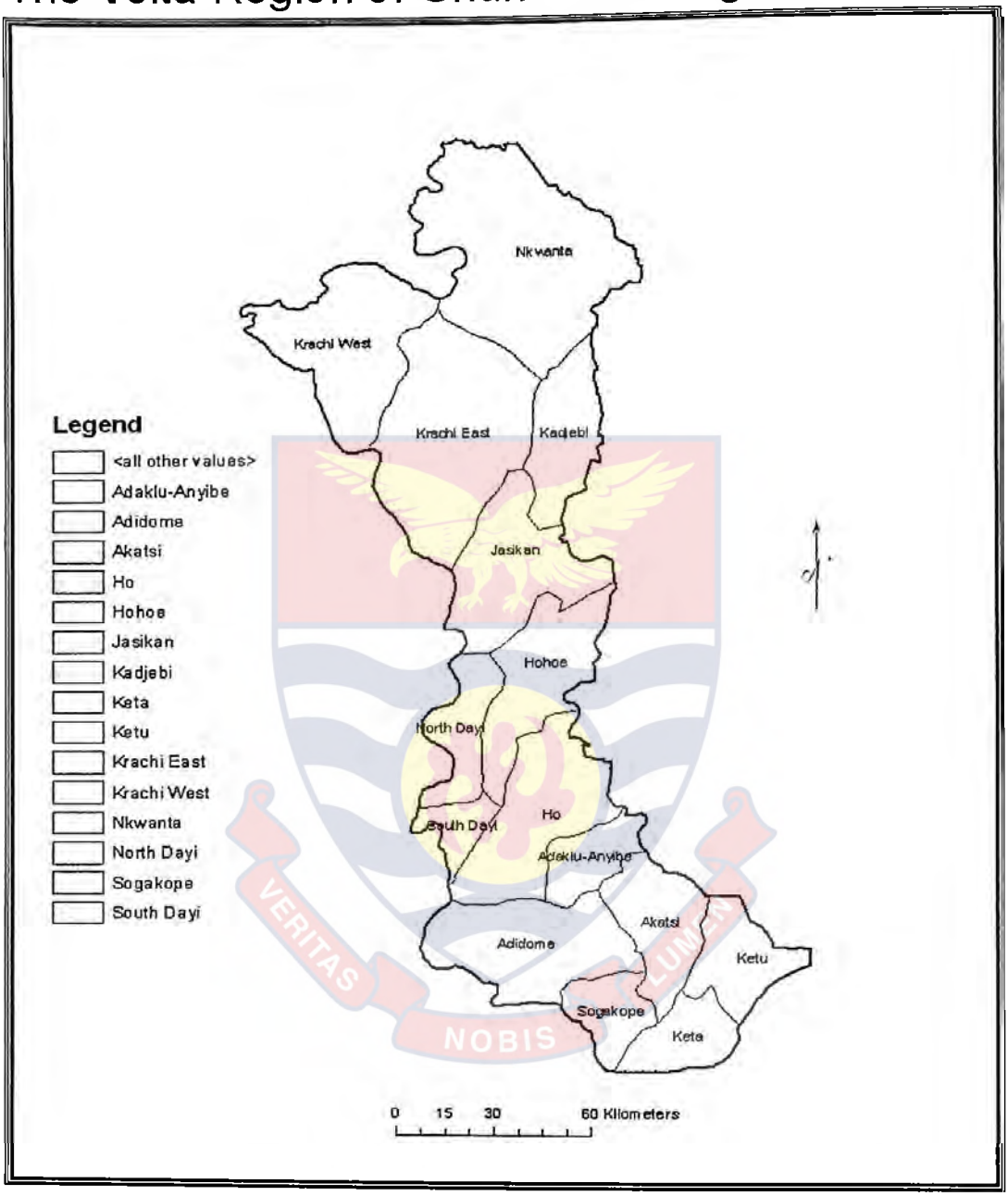
Thank you.

APPENDIX E
GHANA: ADMINISTRATIVE REGIONS,



APPENDIX F

The Volta Region of Ghana Showing all Districts



APPENDIX G

District Map Of Hohoe Showing Towns