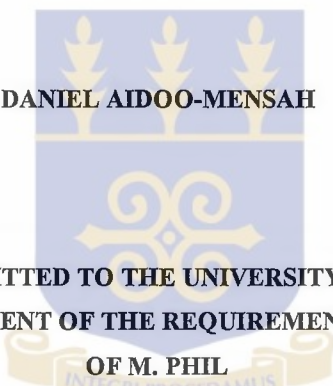


**THE EFFECT OF PARTICIPATION OF NON-GOVERNMENTAL  
ORGANISATIONS IN EXTENSION DELIVERY ON FARMERS'  
ACCESSIBILITY TO INFORMATION**

**BY**

**DANIEL AIDOO-MENSAH**



**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON  
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AUGUST, 2002.**



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**DECLARATION**


**I, DANIEL AIDOO-MENSAH, DO HEREBY DECLARE THAT THIS RESEARCH WORK IS ENTIRELY MY OWN ENDEAVOUR, PRODUCED UNDER SUPERVISION AND THAT NO PART HAS BEEN PRESENTED FOR ANOTHER DEGREE ELSEWHERE.**



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### **DEDICATION**

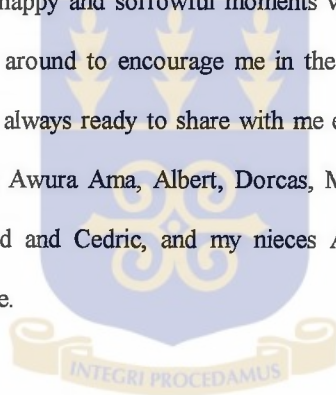
This thesis is dedicated to all those who anticipate the coming back of Christ Jesus, the Saviour of mankind and to my parents and my siblings whose support has brought me this far.



## ACKNOWLEDGEMENT

I am very much grateful to the most high Jehovah God who blessed me with joy and laughter and with His divine word brightened my feet and path when my way was so gloomy that the only solution humanly acceptable was to give up. Like the Psalmist, the most high Jehovah God inclined His ears to my cry and delivered my feet from the miry clay of despair, depression and hopelessness. Thus, to my King of creation, Jehovah God, be all honour, glory, adoration and praise forevermore. Amen.

My sincere thanks go to my father, Mr. Isaac Aidoo who is always ready to sacrifice his all in order to give me the best in this life, to my sister Nana Esi Eduwaah who is ever present to share my happy and sorrowful moments with me, to brother George Paintsil who is constantly around to encourage me in the Lord and to my dear one Faustina Asamoah who is always ready to share with me even her last cedi. I further wish to thank my siblings Awura Ama, Albert, Dorcas, Mark, Fiifi, Charlotte, Jojo, Abeku, my nephews Obed and Cedric, and my nieces Anita, Jennifer, Naana and Gifty for their love and care.



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### ABSTRACT

The dissemination of the relevant information for agricultural production is the institutional duty of all stakeholders committed to the development of agriculture of which the agricultural extension agent and his organisation play a prominent role. As a formal public (government funded) institution, the agricultural extension service has been observed to be undergoing a period of change in respect to the provision of material and financial resources to carry extension activities. As a result, many farmers cannot be reached by the government funded extension services. Data analysis from FAO reports indicate that in Africa, two out of every three farmers have no contact with the public extension services.

For this reason, many attempts have been made to resolve this issue. Such attempts include improving management of available resources (both material and financial), seeking external assistance to support government funded extension activities, use of investment fund to finance extension activities and networking with an NGO. This study therefore looked at the option of networking with NGOs as an attempt of improving upon farmers' accessibility to information.

It is widely recognised that throughout the world particularly in the developing countries NGOs play important roles in agricultural production. These NGOs may be local, national or international. Funding agencies have been observed to see the NGOs in a more favourable light hence their willingness to support activities undertaken by these NGOs.

This study, which was conducted in the Dangme West district of the Greater Accra region purposively, sampled one hundred (100) farmers of which fifty (50) have access to an NGO as well as MOFA activities through their extension agents whilst the remaining fifty (50) had access to only MOFA extension delivery activities. To further allow comparison of opinions and to validate the information obtained from the farmers, AEAs who work with the two categories of farmers were interviewed. The study employed interview schedule and questionnaires to both farmers and AEAs to obtain responses to specific variables to meet the objectives of the study.

Based on the farmers' criteria, accessibility to information was discussed under the following: availability of information to farmers, understanding of information received, usefulness/acceptance of information and timeliness of information. Responses analysed for majority of AEAs and farmers indicated there is a significant difference in farmers' accessibility to information when MOFA is in collaboration with an NGO on one hand and when MOFA is working alone on the other hand.

The findings of the study include the fact that MOFA-NGO network was observed to enhance farmers' accessibility to information in such areas as availability, understanding and timeliness of information disseminated to farmers. It is therefore recommended that there should be the need for more collaboration between financially handicapped government departments and NGOs as a means to help make services offered by such departments more accessible to their clients as well as improving upon the quality of such services.

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**LIST OF ABBREVIATIONS**

AEA	Agricultural Extension Agent
AGDP	Agricultural Gross Domestic Product
FAO	Food and Agricultural Organisation
MOFA	Ministry of Food and Agricultural
MTADP	Medium Term Agricultural Development Programme
NGO	Non-Governmental Organisation
SPSS	Statistical Package for the Social Sciences
GLSS	Ghana Living Standard Survey

***PART ONE: BACKGROUND***

## CHAPTER ONE

### INTRODUCTION AND BACKGROUND

#### 1.0 INTRODUCTION

Agricultural production as bedrock of a nation's development thrives on the effective dissemination of information to farm families and on the availability of such support services as credit facilities, input supply systems and manpower training and development. According to Pickering (1987) most of the information embodied in research results, books, technologies and tools has for years been capable of ironing out some of the glaring differences in agricultural productivity between the developing and the developed world. Such information may be harnessed in the management of renewable natural resources such as soils, water bodies, forests (vegetation) and in the production, processing, storage, protection and marketing of agricultural produce.

According to van den Ban and Hawkins (1988), the tasks of sending and receiving agricultural information through channels which establish common meanings between the source of the information and the receiver and the provision of support services to farmers, are undertaken by stakeholders committed to the development of agricultural production of which the extension worker plays a major role. The primary task of the extension delivery worker and his organisation, in the opinion of Mulhall, Warren and Garforth (1998), is to enable farmers obtain optimum access to relevant information which in turn contributes to the enhancement of their economic and social situations.

However, the long-term nature of extension and its high recurrent costs place a heavy burden on the public sector agricultural budget. Consequently, in a bid to reduce such financial burden, funds for extension activities are increasingly trimmed down by many governments particularly in Africa (Jiggins, 1988). As a result, large numbers of farmers, as observed by Maalouf, Cantado and Adhikarya (1991) cannot be reached by public (government) supported extension services. Moreover, analysis shows that in Africa two out of three farmers have no contacts with public extension service.

Possible ways of solving such a problem have been identified to include collaboration and cooperation with the private sector: NGOs, private voluntary organisations and farmers' organisations. Through such collaboration and cooperation, it is postulated that the number of farmers being reached and benefiting from extension can be increased without necessarily increasing the burden on government expenditure (Maalouf et al, 1991).

It is against this background of helping farmers gain optimum access to agricultural information that many extension delivery organisations, particularly those created by non-governmental organisations (NGOs), have entered the extension landscape to complement the extension delivery activities of the government.

## **1.1 BACKGROUND**

The history of agricultural extension according to Bradfield (1966) shows that it has been born out of the need to develop agriculture and therefore, has been defined variously depending on the underlying objectives of the agricultural development initiative. This has brought in its trail different classifications of extension delivery organisations.

### 1.1.1. Extension Delivery Organisations

Van den Ban and Hawkins (1988) described extension as a form of conscious social influence brought about by the dissemination of information to help people form social opinions and make good decisions with respect to their occupations. Theodorson and Theodorson (1969) defined organisation as a highly structured group having explicit objectives, formally stated rules and regulations, and a system of specifically defined roles, each with clearly written rights and duties. An Extension Delivery Organisation therefore refers to an organised, formal collection of extension workers in the form of an operating unit. This operating unit provides its workers with a regular supply of useful extension messages, technical and administrative supervision and logistic support (Axinn, 1988).

Cleaver (1993) classified extension delivery organisations as either (a) Public or (b) Private. In his view, public extension delivery organisations particularly in Sub-Saharan Africa are mainly units of Ministries of Agriculture or parastatals supervised by the Ministry of Agriculture. Ameer (1994) classified private extension services into two types. The first, is the entirely private type which is directly involved in farming activities through farmer co-operative societies, banks, private agribusiness, agricultural industries, agro-service enterprises, processing industries, marketing firms and multinational enterprises. The second type consists of NGO-operated extension delivery organisations, farmers' associations and self-help organisations. However, the farmers' associations and self-help organisations remain largely dependent on government subsidies.

One of the main concerns of the privately owned extension organisations (particularly those formed by Non-Governmental Organisations) is to find means and strategies to

empower resource-poor farmers. This view is supported by Mulhall et al (1998), who noted that where agricultural information systems are dominated by government research and extension organisations, the resource poor, who are often more in need than others of information on sustainable and low external input technologies, are least likely to gain access to it. Not only that, but also many researchers believe that government and parastatal extension organisations cannot be solely relied upon to promote the interests of the resource-poor farmers, hence the emergence of these private extension initiatives.

In spite of the presence of the many private extension delivery organisations, the government as Al-Hassan, Canacoo and Srofenyoh (1998) observed has been the largest sponsor of extension delivery activities in Ghana. This can be inferred from the long history of extension initiatives undertaken in Ghana.

### **1.1.2. Historical Overview of Extension Delivery in Ghana**

#### **i. Pre-Independence Extension Delivery Activities**

Agricultural Extension Delivery started in Ghana as early as the 19<sup>th</sup> Century by Church missionaries as part of their evangelisation to promote the activities of the Church. The primary objective of agricultural extension during this period was the production of export crops notably oil palm, rubber and cocoa (Korang-Amoakoh, Donkoh and Amoah, 1994; Al-Hassan, Canacoo and Srofenyoh, 1998; Geker, Korang-Amoakoh, Donkor, Tettebo, Haile-Mariam, Hong, 1990). The focus on export crops was the observed worldwide trend of the then Agricultural Extension Delivery Organisations. This observation is confirmed by Axinn (1988) who noted that during the period of colonisation in much of Africa, Asia and Latin America, government agricultural

extension was introduced to many countries in these regions as an instrument to increase production of crops to be exported to the metropolitan centres.

Later, attention was given to raising livestock in addition to the production of cash crops. The livestock production was vested in the Animal Husbandry Division of the then Ministry of Agriculture. This process continued until Ghana attained her independence in 1957.

## ii. Post-Independence Extension Delivery Activities

After independence, Agricultural Extension became part of a government-run United Ghana Farmer Co-operative Council (UGFCC) which was more involved in political campaigns to spread the then government's policy of collectivised agriculture than prepared extension work (Ministry of Agriculture, 1990). After the military take-over in 1966, the Ministry of Agriculture was re-organised. A number of collectivised production organisations were dissolved and various departments were created to carry out extension delivery in group-commodities and services in crops, livestock, veterinary, fisheries, agricultural mechanisation and transport, home economics, plant protection and quarantine, seed multiplication, irrigation and other areas. (Korang-Amoakoh et al 1994; Geker et al, 1990).

However, the change after the military take-over as Geker et al (1990) observed, did not improve the effectiveness of the service since there were no coherent extension delivery activities, properly assembled technological packages, qualified extension staff and material support. To make extension delivery activities more effective, a pilot project of "Focus and Concentrate" was initiated in 1968. It was designed to concentrate advisory

services and distribution of inputs in limited geographical areas identified as having the best potential for increased agricultural production. The process of experimentation and reform with various extension approaches lingered on through the 1970s and 1980s either as independent or not properly co-ordinated programmes which formed part of the wider agricultural and rural development projects (Geker et al 1990).

### iii. Recent Extension Delivery Initiatives

The most recent reform as Al-Hassan et al, (1998), noted has been the unification of the numerous government extension delivery systems. Unification, as they observed has meant delivery of extension services through one department with one agent, the Front Line Staff (FLS) who is empowered to deliver messages on all aspects of agriculture to farmers.

The above Extension Delivery is co-ordinated by the Department of Agricultural Extension (DAES), with six subject matter departments namely: Crop Production, Fisheries, Animal Production, Policy Planning, Monitoring and Evaluation, Plant Protection and Regulatory Service and Women in Agricultural Development. The Department of Agricultural Extension is supposed to cover every aspect of agriculture in Ghana but because of inadequate logistical support they have not been able to do this successfully (Al-Hassan et al, 1998). This, according to Al-Hassan et al (1998) has resulted in the entry into the agricultural extension arena more private extension delivery systems created by Commodity Boards, Commercial organisations and NGOs all in a bid to complement the efforts of government extension activities. These private extension initiatives can be classified as:

(a) Private profit making extension initiatives and

(b) Private non-profit making extension initiatives (Al-Hassan et al, 1998).

The private profit-making extension initiatives include the commodity boards and the commercial extension organisations. The Commodity Boards target specific crops. For example, the Cocoa Board covers six administrative regions (Ashanti, Western, Eastern, Brong Ahafo, Volta and Central) where cocoa and coffee are grown. The commercial extension organisations like the agro-chemical producers and sellers provide information on the products they sell, or support a particular crop in which they have a stake. These commercial extension concerns depend on formal financial institutions for credit facilities at the going market rate. Therefore, in order to recoup the cost of extension provision, they tend to incorporate the cost of service delivery into the price of the products they sell to farmers. Therefore, they are also known as full cost recovery private profit making extension delivery systems. This includes such systems as Juni Agro Cotton Company established in Ghana in 1982 and Reiss and Co., which has been in operation in Ghana since 1952 (Al-Hassan et al, 1998).

The private non-profit extension delivery organisations are basically operated by the non-governmental organisations (NGOs). The services of the NGOs according to Al-Hassan et al (1998) are generally free. These NGOs include Technoserve, which has been operating in Ghana since 1971 and the Adventist Development and Relief Agency (ADRA), which started its activities in 1983.

## 1.2. PROBLEM STATEMENT

The past few years in the history of extension service worldwide have seen the establishment of a number of private extension delivery organisations particularly by non-governmental organisations in a bid to help make information available to farmers. In areas where these private extension organisations operate, their participation in extension delivery has been observed to centre on networking with the existing government-operated extension delivery organisations particularly in the area of information dissemination (Al-Hassan et al, 1998).

Networking with existing government structures in the opinion of Bebbington (1989) is crucial because the development of efficient strategies for extension delivery in most local communities depends on an understanding of the economic and political structures and policies which NGOs are incapable of doing by themselves. Not only that, but also as observed by Maalouf et al (1991), possible collaboration and co-operation with the private sector especially with NGOs, is one way of increasing the number of farmers being reached and benefiting from extension services without necessarily increasing the financial burden on the government. These networkings, as Amanor and Farrington (1991) observed, may not in any way limit the scope of the NGOs concerned.

In this instance of networking between the NGOs and the government-operated extension delivery organisations, a 'scientific community' according to Fernandes, Prager and Gamboa (1991) is developed which aims at rural development. This scientific community according to them would be able to combine their resources and knowledge to bring about social and technological change in more fruitful ways than when only one organisation is involved in rural development. This would involve self-reflection by each organisation

and pooling of resources together to seek rural development alternatives in a more systematic and sustainable way.

Ideally, it may be assumed that most of these non-governmental extension delivery organisations having foreign funding and therefore much endowed with resources may be in a better position to support this networking with the necessary logistics thereby enhancing their combined extension delivery capabilities. This assumption is supported by many researchers who have observed that the participation of these NGOs in extension delivery increases efficiency of reaching the target population with needed information and required support services.

The NGO networks, which lay emphasis on more efficient and effective agricultural extension services has been observed to operate with a number of strategies of extension delivery, all in a bid to reach a large number of farmers with the requisite agricultural information. Typical examples of such strategies aimed at improving extension delivery efficiency with emphasis on information dissemination reported by Al-Hassan et al, (1998) include:

- ❖ Presentations at durbar (local forum) to raise awareness on agro forestry,
- ❖ The use of expert-client training on new technologies,
- ❖ The use of demonstration plots (sometimes farmers' fields) to propagate new technologies and incorporation of functional literacy component to enable farmers to apply what is learnt more efficiently.

The emergence of the new extension service providers has been attributed to the fact that globally, large numbers of farmers cannot be reached by the public (government)

supported extension service due to financial constraints (Maalouf, Contado and Adhikarya, 1991; Moris, 1991). This issue of financial constraints according to LeGouis (1991) has serious budget restrictions for agricultural development especially with reference to national resources earmarked for agriculture, which have been steadily decreasing.

In Ghana, the emergence of NGO activities particularly in the agricultural sector is not anything different from the observed worldwide trend. This has been attributed to the limited capacity of some public departments and services particularly MOFA of reaching farmers with the requisite knowledge and technologies to improve upon their farming activities due to financial constraints. Most of the problems associated with financing agricultural development have been attributed to the dependence on a single funding source (i.e. the government), which makes the Ministry of Food and Agriculture, the main organ responsible for agricultural development, economically fragile during periods of financial crisis. In such instances of financial exigencies, it has been observed that the most affected unit of MOFA tends to be the extension sector. The resultant effect of such financial constraints is that there is a remarkable decline in the quality of extension services offered especially by those extension units without outside support (i.e. NGO collaboration/network). Thus, in most instances, large numbers of farmers operating under such cash strapped extension units may not have enough access to agricultural information as the activities of the extension agents grind to a halt.

The case of the study area (the Dangme West District) is not anything different from the observed nationwide trend of this declining trend of quality extension services received by farmers. Coupled with this, is the fact that the district, which is the largest in the

Greater Accra region, has been observed to have one of the lowest extension agent to farmer ratio (DPCU, 1996). Thus, making the prospects of information accessibility to farmers appear grimmer and grimmer.

It is in the light of reversing the above trend that World Vision, Ghana, an NGO, has joined hands with the Dangme West District Office of MOFA to help make information accessible to farmers. It therefore stands to reason, that farmers in areas where this NGO is participating in extension delivery are more likely to have better access to agricultural information than their counterparts in areas where the NGO is not participating in extension delivery. The study therefore aims at examining how the participation of NGOs in extension delivery influence:

- (1) The extension delivery process and strategies of MOFA
- (2) Farmers' access to information

### **1.3. RESEARCH QUESTIONS**

The study therefore seeks to answer the questions:

- (1) Do the processes and strategies of extension delivery of MOFA differ when networking with an NGO?

#### Sub-questions (Set 1)

- a. Does MOFA-NGO network influence the efficiency of information dissemination?
- b. Does MOFA-NGO network have a different influence on women's activities in agriculture?
- c. Does MOFA-NGO network cater for non-literate farmers differently?
- d. Does MOFA-NGO network make funds and materials more readily available for extension delivery?

(2) Does the participation of NGOs in extension delivery influence farmers' accessibility to information from MOFA differently?

Sub-questions (Set 2)

- a. Does the MOFA-NGO network make information more readily available to farmers?
- b. Does the MOFA-NGO network enhance farmers understanding of information received?
- c. Do farmers see information from MOFA-NGO network more useful?
- d. Is information from MOFA-NGO network more readily accepted by farmers?
- e. Is information from MOFA-NGO network more timely for farmers' activities?

#### **1.4. HYPOTHESES**

Based on the research questions, 2 sets of hypotheses/postulates are derived. These are:

SET 1

- a. MOFA-NGO network improves efficiency of information dissemination.
- b. MOFA-NGO network reaches women in agriculture more than the conventional MOFA system.
- c. MOFA-NGO network reaches non-literate farmers more than the conventional MOFA system.
- d. MOFA-NGO network makes funds and materials available for effective extension delivery more than the conventional MOFA system.

SET 2

- a. MOFA-NGO network makes information more readily available for farmers.
- b. MOFA-NGO network enhances farmers' understanding of information received more than the conventional MOFA system.

- c. Farmers see information from MOFA-NGO network more useful than information from the conventional MOFA system.
- d. Farmers accept information from MOFA-NGO network more readily than from the conventional MOFA system.
- e. Information from MOFA-NGO network is more timely for farmers' activities.

### **1.5. OBJECTIVES**

The main objective of the study is to determine the effect(s) brought about when non-governmental organisations (NGOs) participate in the extension delivery process. The specific objectives are:

1. To identify the NGOs networking with MOFA in the study area,
2. To identify the strategies of the NGO-MOFA network,
3. To determine the characteristics of farmers targeted by the NGO-MOFA network,
4. To determine the methods of extension delivery used by the NGO-MOFA network on one hand and MOFA alone on the other,
5. To determine the problems, which affect the performance of these extension delivery systems (NGO-MOFA network and MOFA alone)
6. To determine the differences in the clients' accessibility to information.

### **1.6. CONCEPTUAL FRAMEWORK**

Extension Delivery Organisations basically aim at stimulating change in the lives of individuals, families and communities through various interventions. Interventions by extension workers are underlined by making information on techniques/technologies, ideas and innovations accessible to the farmer to be used in solving an identified problem.

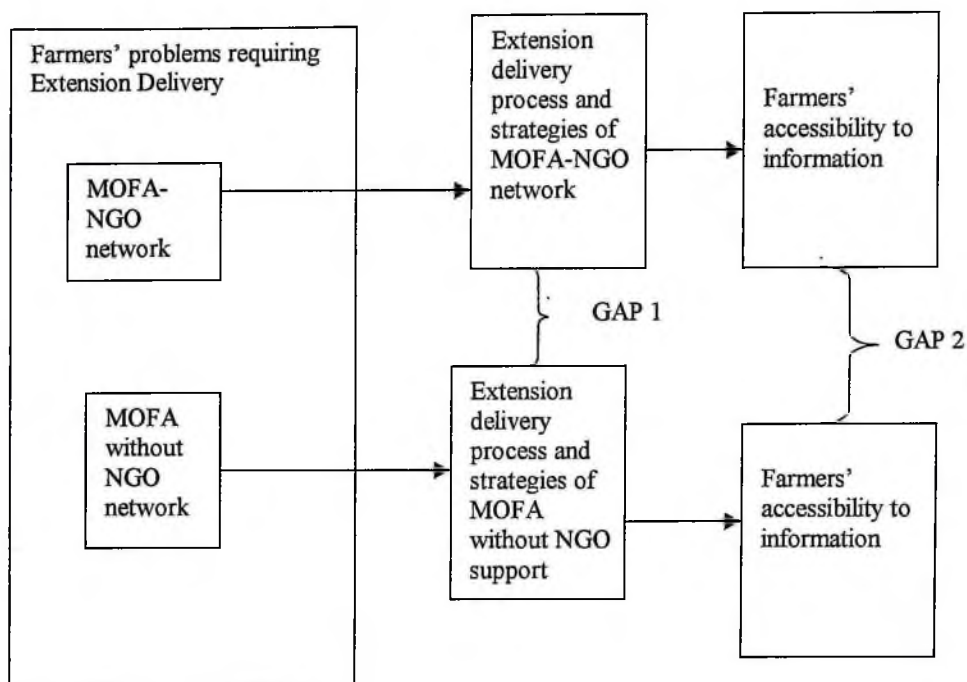
It is assumed that such information, which may be on specific items as agro-chemicals, new varieties of crops and new breeds of animals, can be used by the farmer in order to improve upon his/her production. In order to achieve their objective of making information accessible to the farmer, the extension delivery organisations, according to Adhikarya (1994), employ certain strategies which are demand driven and have problem solving orientation. The use of such strategies in Adhikarya's (1994) view, are necessitated by the fact that most extension delivery organisations, particularly in the developing countries, are bedevilled by numerous problems.

According to Maalouf et al (1991), these problems are capable of hindering the extension delivery process, therefore the need to address them. One such way of addressing these constraints indicated by Maalouf et al (1991) is the participation of NGOs in the extension delivery. The conceptual framework of the study therefore hinges on these elements:

- (1) Process of extension delivery
- (2) Extension delivery strategies used in the extension delivery process
- (3) Problems confronting the extension delivery process
- (4) NGOs' participation in the extension delivery process and
- (5) The accessibility of the information to the receiver.

The model below describes the interplay of these elements:

Figure 1.1. Conceptual Framework



Source: Research Work

#### NOTES

Gap 1: This shows the difference between the process of extension delivery and strategies of MOFA with and without NGO network.

Gap 2: This shows the difference between farmers' accessibility to information from MOFA with and without NGO network.

The key concerns in the conceptual framework are discussed below:

#### **1.6.1. Farmers' problems requiring Extension Delivery**

The economies of most developing countries according to Maunder (1972) are based on agriculture with about 60 to 80% of rural folks engaged in agricultural production,

processing or marketing. In Maunder's (1972) opinion, though there is great potential for development of increased agricultural productivity, very little has been achieved.

The issue of lack of any enviable success story on the agricultural productivity front has been attributed to a number of problems, which farmers have to grapple with. Foremost among these are climate-induced problems such as drought, insect pest attack, fungal, bacterial and viral attack and poor soil fertility. Not only that but also, farmers may lack ready market for most farm produce, they may be confronted with constantly changing agricultural technologies, unavailability of farm machinery and equipment, difficulties with transportation to and from their production centres and lack of incentives in the form of better prices for farm produce.

Being economically rational, farmers are apt to seek advice when necessary as a way of overcoming the many problems that they encounter. According to Maunder (1972), agricultural extension when properly conducted may serve as one of the most important problem-solving conduit for the beleaguered farmers.

### **1.6.2. Process of Extension Delivery**

The extension unit of MOFA, like any other government institution has her own field operating procedure-extension delivery process, which invariably, might have been adopted in order to achieve her set goals and objectives. The main thrust of the delivery process is to communicate agricultural information, basically research findings and recommendations through channels, which establish common meanings between the source of the information and the receiver (van den Ban and Hawkins, 1988; Axinn, 1988). This process seeks to establish a working relationship between the extension agent

and his/her clientele so that both can look forward to a future encounter of sharing information in order to increase their store of knowledge.

Essentially, the extension delivery process of MOFA is centrally directed; but controlled and reviewed monthly at the district level. However, it is assumed that when networking with an NGO, particularly at the district level, the laid down extension delivery process of the participating district unit of MOFA may likely undergo some modifications. GAP 1 shows and explains these modifications or differences between the extension delivery process (and strategies) of MOFA when networking with an NGO and an instance without such a network.

The main elements of the extension delivery process are:

- i. The source of information,
- ii. The information disseminated,
- iii. The receiver of the information
- iv. Interaction between the source and the receiver,
- v. Methods of information dissemination and
- vi. Feedback

i. The source of information

This is where the idea or information comes from and it may refer to a group, organisation or the extension agent who is the immediate person from the extension delivery organisation with whom the clientele comes into contact. The extension agent is seen as a change agent who tries to stimulate a change in rural communities. He/she may

serve an example to his or her farmers in the way he or she helps solve the farmers' problems through mutual discussions, field demonstrations and in some cases field trips.

It is hypothesised that when an NGO enters the extension delivery landscape through networking, the source of information may be well equipped logistically to ensure efficiency in information dissemination to farmers through rigid pattern of visits. Training of extension agents to enable them be abreast with current trends in the agricultural landscape may also be expected as well as improved supervision and evaluation of the activities of the extension agents.

#### ii. The information disseminated

This refers to the materials (ideas, purposes, intentions etc.) from the source, which have been put into a systematic set of symbols or codes in order to facilitate easy transfer (Berlo, 1961). A significant importance of the information to the receiver is that it should be communicated with symbols or codes he/she understands. In the view of Bordenave (1977) the information should function to satisfy some of the needs (if not all) of the receiver.

A likely modification of this element through networking with an NGO might be that information on technologies which may be available but not being disseminated to farmers could be communicated to them thereby improving upon their agricultural activities (Axinn, 1988). However, in this way, there is the likelihood of information being disseminated to farmers increasing in volume. Hence, there is the need to ensure that the volume or amount of information at any particular time should be that which the receiver can easily and readily absorb.

### iii. The receiver of information

The receiver refers to the person or group of persons for whom the information is intended. It is important that the receiver's characteristics (knowledge, attitudes, skills and social system) are taken into consideration when information is being packed for him or her.

It is usually conceived that men play dominant roles in farming activities. It is therefore not surprising that most extension delivery activities target men as the main beneficiaries (Endeley and Tetebo 1995). However, surveys carried out in the agricultural sector suggest that female farmers outnumber their male counterparts. It was estimated that there were 1.7 million men and 1.8 million women with main jobs in agriculture (GLSS 3,1995). Thus, the assertion that males dominate in agricultural production may not be the reality. In the light of this, it may be assumed that an NGO networking with an extension delivery unit of MOFA may take women's role in agriculture into consideration, thereby, targeting women as the main beneficiaries of extension delivery programmes.

Not only that but also, in the view of Wete (1991), theoretical misconceptions underlining many extension programmes tend to favour literate farmers, thereby putting the non-literate ones at a disadvantage. It is therefore hypothesised that the MOFA-NGO networking may pay some form of attention to non-literate farmers.

### iv. Interaction between the source and the receiver

Boone (1985) defined interaction as the reciprocal contact or response between individuals or groups. Information dissemination is an interactive process, which takes into consideration the interaction between the source and the receiver. This interaction

between the source (extension agent) and receiver (farmer) serves as the platform for information exchange between them. Moreover, through the interaction, both parties develop appropriate image of each other especially of the receiver by the source, not as a passive recipient of information but as an active interpreter with vast store of knowledge (indigenous knowledge).

It is hypothesised that with an NGO bringing in additional resources to facilitate extension work through networking, a more enhanced interaction between the source of the information (extension agent) and receivers (farmers) may be achieved. Because of this, more contacts with individual farmers and farmer groups may be expected from extension agents.

#### v. Methods of information dissemination

These refer to the means through which the information is transferred/transmitted from the source to the receiver. These methods ensure that the information generated from the social interaction between the extension agent and his clients' reaches the intended receivers. The methods employed for information dissemination include various forms, which are classified as:

- a. Individuals methods;
- b. Group methods; and
- c. Mass methods of extension delivery.

Much extension work according to van den Ban and Hawkins (1988) is done using home and farm visits (individual and group methods), at meetings (group method) and through articles in farm magazines (mass method). The effectiveness of these methods in their opinion determines the extent to which information is made accessible to farmers.

However, the employment of any one method depends largely on the resources available to the extension delivery organisation.

With the observed trend of declining resource allocation for extension delivery, it may be reasonable to assume that the probability of use of all three methods by any government operated extension unit may be small. This is evidenced by the fact the use of individual methods in particular involves the expenditure of resource in the form of provision of motorbikes and fuel for extension agents especially when farmers stay far from extension agents. However, it is anticipated that networking with NGO may help solve this problem, as NGOs in most cases are resourceful enough to support the provision of transportation facilities for extension agents.

#### vi. Feedback

Feedback refers to the process by means of which the source obtains information as to whether and how his intended receiver has indeed received the message. Such information can help to modify ongoing or future communication behaviour. (Mcquail and Windahl, 1981).

Effective extension according to Axinn (1988) cannot be achieved without the active participation of farmers and their expressed interests being addressed. This, it is assumed can be achieved through effective feedback which brings to the fore, farmers knowledge and needs. An NGO's participation in extension delivery which emphasises beneficiary involvement and which also seeks to empower local communities, is anticipated to rely more on feedback from farmers and incorporate the concerns obtained from the feedback into future extension delivery activities.

### **1.6.3. Extension Delivery Strategies**

Extension Delivery Strategies, according to Adhikarya (1994), refer to the best possible use of available or limited resources (time, funds and staff) to achieve the greatest returns or pay-off in extension delivery. Thus, the underlying assumption of these strategies is that resources needed for effective extension delivery are limited and therefore, there is the need to combine the little which is available in the most economic way possible to achieve maximum results. In this sense, the strategies employed act as a 'bridge' connecting the limited resources at the disposal of the extension delivery organisation on one hand and the intended results on the other hand. The usefulness of such strategies, according to Adhikarya (1994), lies in the fact that they are purposive, problem solving oriented and focuses on a specific issue or recommended technology.

In an event of a collaborative link or networking between an NGO and a district extension unit of MOFA, it is hypothesised that the strategies of the participating unit of MOFA may be modified (GAP1). The modification may either be positive or negative depending on how the resulting strategies influence farmers' access to information.

### **1.6.4. Problems affecting Extension Delivery**

Agricultural extension according to Axinn (1988) is plagued by many constraints, which may in most cases militate against the success of the extension delivery process. These constraints in Axinn's (1988) opinion may be internal (that is, within the organisational set-up of the extension delivery organisation) or external to the extension delivery organisation. According to Nagel (1997), some of these internal constraints may arise from the hierarchical and highly bureaucratic way in which the services are organised.

Some of the external constraints identified by Nagel (1997) are financial in nature and may produce a strong pressure to reduce staff and also hinder smooth supply of resources to execute fieldwork. The resultant effects of these constraints in the view of Nagel (1997) tend to be detrimental to regular extension work, thereby hampering a full realisation of their potential.

#### **1.6.5. MOFA without NGO support**

Agricultural extension delivery particularly in sub-Saharan Africa with Ghana being no exception is mainly in the domain of Ministries of Agriculture or through parastatals. Funds for extension work are provided by the central government and disbursed by the Ministry of Food and Agriculture.

#### **1.6.6. NGO Participation in Extension Delivery**

The participation of NGOs in the extension delivery process is mainly in the area of collaboration and cooperation with the public extension organisations. Through this collaboration and cooperation, the NGOs make available to the public extension organisations funds and materials to enable the public extension organisations to reach more people and work more efficiently.

#### **1.6.7. Accessibility of Information to farmers**

The ultimate aim of any extension delivery organisation is to make its information accessible to its clients. Accessibility to information therefore refers to the creation of enabling environment or opportunity by the source in order to make information available to the receiver. Different sources may provide different opportunities that may create

different enabling environments for the receiver to have access to the information disseminated.

Not only that but also, it is anticipated that the creation of an enabling environment by an extension unit of MOFA may be influenced by the presence of an NGO in the extension delivery arena represented by GAP 2. Thus, it is assumed that a rapid enhancement of the factors underlining information accessibility may be achieved through resources provided by the NGO.

These underlined factors are:

- i. Availability of information from the source to the receiver,
- ii. Understanding of the information received by the receiver,
- iii. Usefulness of the information to the receiver,
- iv. Acceptability of the information to the receiver and
- v. Timeliness of the information to the needs of the receiver.

- i. Availability of information from the source to the receiver

The underlying premise of information availability is that the source must have an idea, purpose, opinions, attitudes, knowledge etc. which is (a) capable of solving an identified problem of the receiver or (b) creating a dialogue between the source and the receiver for present and future interactions.

In the view of Bordenave (1977), availability of information presupposes a handing over of technologies to the receivers so that they can be more productive in their various occupations or awakening the intellectual and decision-making potential of the receivers

(example: rural people) so that they themselves can be in a position to change the structure of their society.

#### ii. Understanding of the information received by the receiver

The underlying assumption is that the information being made available to the receiver is presented in a language and form he/she understands. In this wise, the understanding (meanings the receiver makes out of the information) is not only in the words used by the source but the form the information is packaged. According to van de Ban and Hawkins (1988), technical terms must be explained in short and simple sentences using common words, which have concrete meanings. To this end, they therefore suggested that abstract language and 'jargons' should be avoided.

#### iii. Usefulness of information to the receiver

The performance of an extension organisation depends to a large extent the usefulness of its message to its clients. According to Campbell and Barker (1997), the more useful the information is to the receiver, the better will be extension-client relationship and the more likely the extension programme be appreciated and supported.

#### iv. Acceptability of the information to the receiver

The issue of developing appropriate content of information, which is acceptable to the receiver, is critical to the extension delivery process. The acceptance of the information made available to the receiver, according to Bordenave (1977), hinges on the function of such information. He therefore, outlined two main functions of information as (a) Instrumental, that is, the information may function to help improve the receiver's work (example: agricultural production of farmers).

(b) Consummative, that is, the information may produce pleasure or entertainment.

v. Timeliness of the information to needs of the receiver.

Information as a tool for rural development is only deemed useful when the receiver as a means to achieve an end applies it. In this wise, the usefulness of such information depends very much on what time it is made available to the receiver for him/her to apply it in order to achieve an intended satisfaction. Bottlenecks to prompt availability and subsequent application of the information must therefore be identified and removed.

## CHAPTER TWO

### METHODOLOGY

#### 2.0. INTRODUCTION

This chapter deals with the methodology used in the study. It includes:

- i. Study area
- ii. Study population
- iii. Description of the research design
- iv. Methods of data collection
- v. Sampling techniques employed and
- vi. Development of data collection instruments study concepts, objectives, sources of information and methods of data collection. The chapter also describes the administration of the questionnaire in during the pre-test stage, final questionnaire development, data collection and limitations and precautions taken in the data collection process.

#### 2.1. STUDY AREA

The study was conducted in the Dangme West District of the Greater Accra region. The Dangme West district is situated in the southeastern part of Ghana. It lies between latitudes 5° 45' and 6° 05' south and longitudes 0° 05' and 0° 20' west. It has a total land area of 1,442 square kilometres, thus, making it the largest district in the Greater Accra region. Its land size represents 41.4% of the total land area of the Greater Accra region. The Dangme West district is bordered by the following districts: North Tongu district on the northeast, Yilo Krobo district on the northwest, on the west by the North Akwapim district, on the southwest by the Tema district and on the east by the Dangme East district. Its southern part is occupied by the Gulf of Guinea (DPCU, 1996).

It has an arable land of about 1,296,000 hectares of which 45,600 hectares is under cultivation with an average farm size of about 2.5 hectares (DPCU, 1996). The major crops cultivated are maize, cassava, tomatoes, okra, pepper, watermelon, onions and rice. Rice is mainly cultivated on irrigation projects at Asutuare and Dawhenya and other low-lying areas. Livestock production in particular, cattle, is undertaken by Fulani herdsmen. A recent livestock programme undertaken by the Animal Research Institute has brought in its wake intensive management of small ruminants. Poultry and pig production is mainly on free-range basis.

This district was selected among others because of the activities of the NGO, which are basically aimed at complementing the extension delivery efforts of the Ministry of Food and Agriculture. Once selected, initial visits were made to the staff of the District Agricultural Extension Service (DAES) to introduce and explain the research to them and solicit for the necessary assistance. With the permission granted by the District Development Officer (DDO), scheduled visits were made to Dodowa on weekly basis to acquaint myself with the field officers of MOFA (and the co-operating NGO).

## **2.2. STUDY POPULATION**

The target population for the study comprised:

- a. Farmers who have access to NGOs as well as having access to the public extension services. The accessibility of the farmers to NGO sponsored extension activities is mainly through the extension agents who are assigned to the said farmers' community. The NGO therefore operates through the extension agents in order to reach the farmers.
- b. Farmers who do not have access to NGOs. In this case, farmers who have access only to the public or government operated extension services were considered.

c. The staff members of the public extension service who are at the same time seconded to NGOs were interviewed. This was done to determine how such staff members undertake their activities as far as their parent organization (that is, the state operated extension service, MOFA) and the NGOs are concerned.

### **2.3. RESEARCH DESIGN**

In order to achieve the set objectives of the study, a descriptive research design was used. A descriptive research design according to Sarantakos (1993) aims at social systems, relations, or social events, providing background information about the issue in question as well as stimulating explanations. Data obtained from descriptive research may be expressed qualitatively in verbal terms and quantitatively in mathematical terms. In the case of qualitative methods, the following were taken into consideration:

- a. Description of the respondents
- b. Drawing and verifying conclusions.

The quantitative methods sought to establish the relationship between the variables employed in the study.

### **2.4. METHODS OF DATA COLLECTION**

Surveys were mainly used in the data collection. Surveys are basically used for systematic structured set of data, which may be collected through observations, the use of questionnaires and interview schedules. Observations enable the researcher to get first-hand information on the objects of the study particularly in their natural setting. Questionnaires enable the researcher to gather detailed information from a number of individuals within a specific area. One of the many functions of survey is to help describe the units of analysis. Surveys also help to prevent the creation of variation among the

units of analysis since it makes use of naturally occurring variations already existing among the units. In spite of the good attributes of surveys as an important tool for social science research De Vaus (1990) observed the following flaws about them:

1. Surveys cannot adequately establish cause and effect between variables
2. Surveys look just at particular aspects of people's beliefs and action
3. Surveys seem to assume that human actions are caused by external forces and relegate the role of human consciousness to the background.

## 2.5. DEVELOPMENT OF DATA COLLECTION INSTRUMENTS

The table below shows the data collection instruments. These instruments comprise the study concepts, objectives underlying the study, information required to achieve the objectives, sources of this information and methods of data collection.

**Table 2. 1: Data Collection Instruments**

Study Concepts	Objectives	Information required	Source of Information	Methods of Data Collection
Strategies of extension delivery	To identify the extension delivery organisation and their strategies of extension delivery	The different types of strategies employed in extension delivery by the extension delivery organisations	1. Farmers in the study area 2. Staff in the extension delivery organisation	Interview schedules and questionnaires
Farmers targeted by NGO-MOFA network	To determine the type of farmers targeted by the NGO-MOFA network	Characteristics of farmers targeted by NGO-MOFA network	1. Farmers in the study area 2. Staff in the extension delivery organisation	Interview schedules and questionnaires
Methods of information dissemination	To determine the methods of extension delivery of the organisation	Types of extension delivery methods used for extension delivery		Interview schedules and questionnaires

		organisations		
Problems Confronting extension delivery	To determine the constraints which affect the performance of the extension delivery organisations and the influence of these constraints on the extension delivery process	The constraints the extension delivery organisation in the study are facing	Staff members of the extension delivery organisations	Interview schedules and questionnaires
Accessibility of information	To determine the relationship between the strategies employed by extension delivery organisation and their clients accessibility to information	a. Availability of information b. Acceptance of information c. Understanding of information Relevance/appliability of information Timeliness of information	Farmers in the study area	Interview schedules and questionnaires

## 2.6. SAMPLING TECHNIQUES

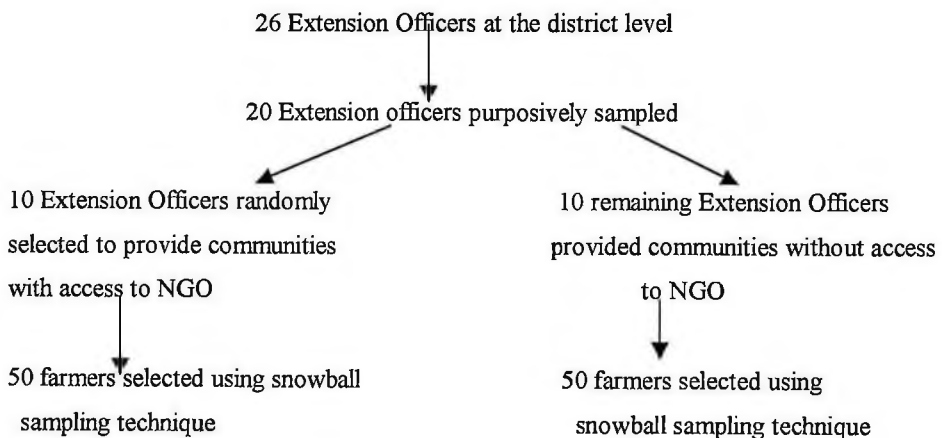
Purposive sampling technique was employed to select twenty (20) extension officers out of a total of twenty-six (26) from the study district. Purposive sampling was employed to select the twenty field staff since not all the twenty-six agents have been on secondment to an NGO. These twenty extension agents are full time workers of the Ministry of Food and Agriculture and at the same time seconded to an NGO, World Vision, Ghana .

In purposive sampling, the researcher uses his/her own judgement about respondents or cases to choose, and picks only those which best meet the purposes of the study (Bailey, 1987). Since all these officers have farmers who are on both sides of the divide, that is, farmers having access to NGOs and those who do not have such access, ten (10) officers

were randomly selected to provide communities with access to NGOs. The remaining ten (10) officers provided communities without access to NGOs.

Within the first 10 communities of which the farmers had access both to an NGO and the public extension services, snowball sampling technique was employed to select 50 farmers who were then interviewed accordingly for the study. Similarly, snowball sampling technique was employed to select 50 farmers from the second 10 communities who did not have access to an NGO but had access to the public extension services. These farmers were also interviewed accordingly. Snowball sampling technique is a non-probability sampling in which persons initially chosen for the sample are used as instruments to locate other persons having the necessary characteristics, thus, making them eligible for the sample.

The flow diagram (Figure 2.1) below summarises the sampling techniques used in the study:



## **2.7. PRE-TESTING**

The questionnaires were pre-tested in order to identify weaknesses, ambiguities and omissions before it was finalised for the actual study. The pre-testing was done at Abokobi in the Ga district. Abokobi was chosen as it has similar characteristics as the study areas in terms of agricultural enterprises and NGO activities.

Pre-testing helped to detect such problems as:

- a. Wrong wording of questions,
- b. Same-answer questions,
- c. Difficult questions
- d. Time required for administering the questions.

## **2.8. FIELD EXPERIENCES**

### **1. Travelling and Transport**

The study area (Dangme West District) is one of the larger districts in the Greater Accra region but with rather poor road network and limited transportation facilities. The poor nature of the road network was worsened by the rains as the study period coincided with the rainy season. Most of the towns/villages the researcher visited were accessible only by motorbikes and in some cases by bicycles. Rivers had to be crossed on motorbikes by the researcher as pillion rider. The status of a pillion rider was necessitated by the fact that the researcher had limited knowledge of the location of the towns and villages and therefore had to depend on the AEAs working in the said district.

### **2. Farmers' Expectations**

Farmers, especially those without NGO assistance, displayed a high level of unwillingness to welcome the researcher particularly when the researcher was seen in the

company of the farmers' local AEA. Thus, the researcher had to spend some time to convince the said farmers of the importance of the study to their agricultural development. Not only that but also, the farmers without NGO assistance anticipated that by the study, they would have the privilege of getting access to NGOs, particularly NGOs with credit/loan assistance to offer. It was therefore not surprising for the farmers to accept the invitation to be interviewed on condition that they would be linked to an NGO.

### **3. Extension Field Agents**

The researcher had to depend on the AEAs working in the district. While most of these AEAs were willing to assist the researcher to get to their operational areas, few of them demanded compensation in the form of fuel before getting the researcher to their operational area.

#### **2.9. LIMITATIONS OF THE STUDY**

Interview schedule was adopted in administering the questionnaires. This was precipitated by the fact that a large number of the respondents could not read and write and do not understand English. The questions were therefore read out and translated to them in Ewe, Twi and Ga-Dangme. It is therefore assumed that the data obtained this way would be subjected to limitations mostly associated with data obtained from interviews. Most of the translations were done by Extension Officers operating in the areas; thus, it is mostly likely that their presence might have had some effects on the responses given by the respondents. This phenomenon called Hawthorne Effect, which Sarantakos (1993) defined as an expectation effect related to the respondents' knowledge of being observed thereby altering their behaviour and their responses. However, another issue of Hawthorne Effect associated with the presence of friends and/or relatives of interviewees

was guarded against. To this end, each respondent was interviewed in the absence of friends and/or relatives. Extraneous factors usually associated with interview schedule such as increase in recording skills with passage of time and boredom were taken care of. This was achieved by not interviewing more than ten people a day.

## **CHAPTER THREE**

### **LITERATURE REVIEW**

#### **3.0 INTRODUCTION**

This chapter deals with the review of literature underlying the concepts and objectives of the study. The concepts considered included:

1. Channels of information to farmers,
2. Process of Extension Delivery,
3. Strategies of Extension Delivery,
4. Factors affecting extension delivery
5. NGOs in extension delivery

#### **3.1. CHANNELS OF INFORMATION TO FARMERS**

Making farmers gain optimum access to information is obviously a major and immediate goal of any extension organisation. According to van den Ban and Hawkins (1988), information accessibility functions to help people particularly farmers form opinions and make decisions about their agricultural activities. Farmers may also need the guidelines of professional leaders possessing the requisite knowledge and skills necessary to help them solve their problems.

These problems according to van den Ban and Hawkins (1988) act as barriers which extension may help the farmers to overcome. Such barriers in the view of van den Ban and Hawkins (1988) may include the fact that farmers lack adequate knowledge and insight to recognise their problem or to think of a possible solution. Their knowledge may

be based on incorrect information because of limited experience, upbringing or cultural factors. The extension agent's objective is to remove the barrier by providing information and insight into the problem.

The farmers may also lack motivation to behave in certain way, perhaps, because the desired change in behaviour conflicts with other motives. Extension can sometimes overcome this problem by helping the farmers to reconsider their motives. For example, they may not pay much attention to milking-shed hygiene because disinfectants are expensive and require extra physical effort to use correctly. The extension agent may motivate them to use the recommended methods by demonstrating how shed hygiene improves milk quality and increases financial returns.

Not only that but also, a farmer may also lack insight into how to obtain the necessary resources for his agricultural activities. The onus then falls on the extension agent to help such a farmer to obtain the required resources (van den Ban and Hawkins, 1988).

Research has shown that there are two main channels through which information accessibility may be achieved. These are through:

1. Indigenous Information channels
2. Established Agricultural Extension channels.

### **3.1.1. Indigenous Information Channels**

Van den Ban and Hawkins (1988) defined indigenous information channels as the traditional communication systems that have been used in a community for the dissemination of information. They have evolved from the traditions, beliefs, customs and norms of a society. This form of information accessibility also referred to as traditional or

horizontal information accessibility according to Axinn and Thorat (1972), is found in every rural social system in the world. In their opinion, through the ages, this form of information accessibility has been vital in the performance of such functions as improving production, marketing of outputs and sale of inputs. Such information accessibility as noted by Mundy and Lloyd-Laney (1992) does not take place through newspapers, radio or extension organisations. In their opinion, it occurs within families, meeting of village organisations, in the market place or at the well.

Much of this form of information accessibility is informal and unorganised, interpersonal, oral rather than written, controlled locally rather than by outsiders and uses no or low levels of technology. Indigenous information accessibility includes the transmission of entertainments, news, persuasion, announcements, and a social exchange of every type and it is the means by which cultures and the indigenous knowledge embedded in societies are preserved, handed down and shared (Maunder, 1972)

The main advantage of this channel of information accessibility is that it offers opportunity for participation of local people in development.

### **3.1.2. Agricultural Extension Channels**

As human beings became more specialised in every sphere of life over the years, learning, vis-à-vis, getting access to information became more institutionalised. This brought about the establishment of formal and non-formal educational systems. When non-formal education is focused on improved agricultural production, supply and marketing, it is termed as agricultural extension. Agricultural extension is therefore seen as the creation and sharing of information between the extension worker and his clients (Axinn, 1988).

The agricultural extension practitioner who is seen as a change agent basically aims at stimulating change in the lives of individuals, families and communities through information dissemination. In the view of van den Ban and Hawkins (1988) a certain form of conscious social interaction results between extension agent and his clients from the extension delivery process.

Boone (1985) defined this social interaction as a reciprocal contact between individuals or groups. The recognition of the interaction formed between the extension agent and clients creates a dynamic link of information interchange between them. This process of interaction between the extension agent and his clients is not an intermittent one but regular, gradual and repetitive. This affords the extension agent the opportunity to visit these clients with the needed information. However, as Axinn (1988) noted, the contributions and potentials of the extension agent in helping his clients gain access to information may be hampered by many constraints. Some of these constraints according to Axinn (1988) are internal to the extension organisation and others are external and relate more to the larger social and economic, administrative, policy and diplomatic system of which agricultural extension is but one small component.

#### i. Internal constraints of Agricultural Extension

Some these constraints of agricultural extension outlined by Axinn (1988) include inappropriate technologies or new technologies which may not fit local situations. In this case, without technologies which fit the needs and interests of local people, extension has very little to contribute to help such people to improve their lot.

In the view of Axinn (1988), the exclusion of farmers from extension programme planning constitutes a serious constraint. This is because, programmes are planned centrally at the national government, thereby, excluding farmers' participation and eventually overshadowing the real felt needs of farmers. Therefore, adapting such extension programmes to different conditions in different locations tends to greatly reduce extension effectiveness.

A third constraint in the view of Axinn (1988) is associated with remuneration of professional field staff of agricultural extension organisations. In Axinn's (1988) opinion, most of these field staffs are underpaid and least motivated to perform their duties.

Another constraint observed by Axinn (1988), is the tendency for the larger and wealthy farmers in any area to dominate the activities of extension personnel, consuming their time and other resources in such a way that little is left for smaller and less privileged but more needy farm families. Co-ordination between agricultural extension and other rural services can also be a major constraint. This according to Axinn (1988) results from bureaucratic channels existing between organisations. Thus, individual units of such organisation tend to compete with each other rather than to co-operate.

Not only the above-mentioned constraints but also one of the commonest constraint identified by Axinn (1988) is the lack of transportation and other basic resources needed by extension field staff. Materials for demonstrations, publications, posters and other necessary ingredients for extension activities may be lacking thereby hindering smooth extension delivery, vis-à-vis, farmers' access to information.

## ii. External constraints of Agricultural Extension

These external constraints in the view of Axinn (1988) are usually beyond the competence of manipulation by extension itself and may set the stage and provide the environment in which agriculture extension may not be able to fulfil its functions, and achieve the objectives, the larger society sets for it.

A major external constraint from the perspective of Axinn(1988), relates to financing of agricultural extension. This according to him requires annual financial commitments, which may be quite large for most governments in the developing world to handle. In such situation governments deem it extremely impossible to devote large amounts of their budgetary allocation to support extension activities.

Another external constraint as Axinn (1988) noted concerns national price policies and export-import strategies. In most countries particularly in the developing world, input prices are so high that it is not profitable for farmers to adopt a technology, which may involve the use of such high priced inputs. Similarly, if internal taxes are so high on an export crop that there is no encouragement for farmers to produce it, extension officers are typically unable to coerce farmers to grow it.

In view of these numerous constraints hampering the smooth execution of extension activities, Adhikarya (1994), suggested that there is the need to devise strategies to counteract these constraints and their debilitating effects.

### **3.2. PROCESS OF EXTENSION DELIVERY**

This involves the process of sending and receiving information through channels, which establish common meanings between the source of the information and the receiver (van den Ban and Hawkins, 1988). The extension delivery process starts from the building of an interactive relationship between the source of the information and the receiver. The underlying premise of this interaction is that the source of the information and receiver are both “knowledgeable”, however, with different levels of knowledge. In this case, they tend to learn from each other and are therefore seen as partners in development.

The extension delivery process also establishes a working relationship between the extension agent and his/her clientele so that both can look forward to a future encounter. Moreover, the extension agent gets the opportunity to assess the effectiveness of the interaction between himself and the clientele particularly in relation to change(s) in the clientele’s knowledge level, vis-à-vis, total change in his/her environment.

The main elements of the extension delivery process are:

1. The source of information,
2. The information disseminated,
3. The receiver of the information
4. Interaction between the source and the receiver,
5. Methods of information dissemination and
6. Feedback

#### **3.2.1. The source of information**

The source refers to the extension agent who is the immediate person from the extension delivery organisation with whom the clientele comes into contact. The extension agent is

seen as a change agent who tries to stimulate a change in rural communities. It is assumed that before the extension agent can effect any positive change, he/she must have some knowledge of not only the clientele's situation, but also the client's socio-cultural environment. This, it is assumed, goes a long way to determine the type of information to be sent to the clientele and how to package the information as well. Moreover, in the view of Lerner (1958), for effective collaboration between the extension agent (source) and the receiver (farmers), there is the need for the extension agent to put himself/herself in the place of the receiver, a concept he termed as "empathy"

An important extension of the concept of empathy, according to Bordenave (1977) is the concept of "co-orientation" which theorises that if two persons (example: an extension agent and his/her clientele) can have similar perceptions and interpretations of the same object, the more efficient will be the flow of information between the persons. In Bordenave's view an intense flow of information may increase co-orientation. It is therefore assumed that the more contacts the extension agent makes with his/her clientele, the greater the probability of increasing the clientele's access to information.

### **3.2.2. The information disseminated**

The information refers to the materials (ideas, purposes, intentions etc.) from the source, which have been put into a systematic set of symbols or codes in order to facilitate easy transfer (Berlo, 1960). According to Wete (1991), there is a clear relationship between information, agricultural and progress. Progress in agriculture, in the view of Wete, is based on the type of information transferred and its relevance to the fulfilment of the agricultural needs of the farmer (receiver). According to Bordenave (1977), the information should function to satisfy some of the needs, if not all of them.

A significant importance of the information to the receiver is that it should be communicated with symbols or codes he/she understands. Moreover, the volume or amount of information at any particular time should be that which the receiver can easily and readily absorb. Conventionally, not only is the information to be considered in extension delivery, but also the form it takes to be disseminated to the receiver. The choice of the appropriate symbols and code would thus, appears to be crucial to the extension delivery process

### **3.2.3. The receiver of information**

The receiver refers to the person or group of persons for whom the information is intended. According to Bordenave (1977), the various concepts enriching the role of extension delivery in rural development reveal an orientation that is essentially vertical, unidirectional and which aims at manipulating and indoctrinating the rural folks (the receivers). However, the result of such concepts as he noted has been an issue of repeated failures, thereby leading to the development of a new notion of extension delivery, which is more centred on the receiver.

The “building blocks” of this new notion of extension delivery makes use of the fact that the receiver is also knowledgeable and not a mere recipient of information. His/her knowledge can also serve as input of learning for the extension agent. Thus, both the extension agent (source of information) and the clientele (receiver) are both classified as “learners”, each learning from the other (Bordenave, 1977).

### **3.2.4. Interaction between the source and the receiver**

Boone (1985) defined interaction as the reciprocal contact or response between individuals or groups. Information dissemination is an interactive process, which takes into consideration the interaction between the source and the receiver. Through this interaction the source (extension agent) who is seen as a change agent tries to influence the behaviour of his clients in order to stimulate a change in them. According to Bordenave (1977), the frequency of interaction between the source and the receiver can be a measure of the efficiency of the information dissemination process.

### **3.2.5. Methods of information dissemination**

According to Lancaster and Sattar (1984) information in all fields of human endeavours, agriculture being not an exception is proliferating rapidly. However, methods to disseminate this ever-increasing information are inadequate as extension workers according to Evans and Dahl (1984) still express concern about appropriate methods to do so.

In his view, Laird (1972) suggested that none of the methods of extension delivery available to the extension agent is better than others and even pointed out clearly that there is always the likelihood of these methods overlapping. However, this overlap according to him may have positive implications as one method may be used to reinforce the other in the information delivery process.

Nonetheless, the search for efficiency and effectiveness in reaching his target clients according to Sica (1984) means selecting the method of information dissemination best suited to achieve the objectives of the extension agent within the limits of the resources at

his/her disposal. To this end, Kang and Song (1984) suggested that the stakeholders in the information dissemination process should choose the method of extension delivery that best suits the situation at hand. The fundamental extension delivery methods are:

- i. Individual methods
- ii. Group methods
- iii. Mass methods

#### i. Individual Methods

This is a one-to-one situation, which affords the extension worker the opportunity to interact with the farmers or farm families on individual basis. This method enables the extension agent to look at each farmer's or farm family's progress.

Although this approach is time consuming, its importance cannot be over emphasised, because it is through working individually with the clientele that the extension worker learns about the people of the area, how they think, what their needs are, and how they carry on with their work. Equally important is the opportunity individual contact provides for the local citizen to get to know the extension worker so that the personal bond between the extension worker and the community can be established. It is through the use of this method that the extension worker's credibility and integrity can be nurtured. These methods are widely used and have been found to be highly effective when dealing with illiterate farmers working on smallholdings who are not normally exposed to other methods of information dissemination (Kang and Song, 1984).

Extension in the opinion of van den Ban and Hawkins (1988) requires a high standard of performance by an extension agent and a positive attitude towards his farmers, especially

in the personal relationship of mutual discussion. Hence, this method in their view is most suited to situations where problems have socio-emotional as well as technical aspects. Thus, a personal contact may be useful in dealing with the farmer's emotional needs.

Examples of this method include:

### **Farm and Home visits**

This method affords the farmer the opportunity to communicate personally and freely with the extension agent. It enables the extension agent to make follow-up visits to observe the results of the previous recommended practices and give new recommendations.

### **Office Calls**

It involves visits by the farmers to the extension office to seek information or request help to solve a problem. Van den Ban and Hawkins (1988) argued that farmers making office calls are often convinced that the extension agent can help with their problems. To this end, they suggested that the extension office should be sited at a convenient place to make it easy to locate. Moreover, the extension agent should keep regular office hours so that farmers can be sure of when to meet him/her.

### **Informal Contacts**

The method relies on unplanned and unscheduled meetings. It gives the extension agent the opportunity to meet farmers in informal situations. Example: on the street or in the market place.

**Personal Letters**

It involves sending letters to farmers who request for specific information. The letters can serve as follow-up after home visits or office calls.

**Telephone Call**

Under this system, there is no personal contact between the extension agent and the farmer. Communication is by telephone and can be initiated by the farmer or by the extension agent.

**ii. Group Methods**

The group methods of information dissemination according to Kang and Song (1984) are more frequently used in extension work than the individual methods. This in their view is not surprising because, extension workers can reach more people than is possible by following individual methods alone. This is an important factor when time and staff are limited. Group methods are especially effective in persuading the extension worker's clientele to try a new idea or practice (Kang and Song, 1984). For effective interaction, it is recommended that group size should be between 15 and 25 people.

Examples of this method include:

Informal Group Discussion- this involves farmers getting together in a certain place at a particular time to discuss issues with resources persons.

Role-playing- this is simulation in which a simple, open-ended scenario is described and participants are assigned roles to act out the situation or problem. There is no script to follow and participants play the roles as they see fit, drawing on their own experiences.

The purpose of using this method is to involve participants in real life situations, to stimulate thought and learning and to encourage discussion about factors involved in the drama (Kang and Song, 1984).

### iii. Mass Methods

These methods are very effective means of making a large number of people aware of new ideas, products, inputs and approved practices. They are also used to alert people of the outbreak of diseases and pests and how to control or prevent such outbreaks. The information provided stimulates farmers to seek more information from extension workers and neighbours.

Mass methods or media according to van den Ban and Hawkins (1988) may be used to change patterns of behaviour, especially where these changes are small and relatively unique or where they help people to fulfil an existing wish. Farmers' information needs therefore, van den Ban and Hawkins, suggested must be assessed before planning mass media message.

Examples of mass methods include:

#### **Radio**

It is also termed as audio medium. It is a very useful means of communicating to a large number of people and the programmes can be changed to meet new conditions. It can be used in every corner of a country. Where FM stations are available, local agricultural programmes are broadcast to suit the needs of the local farmers.

**Television**

This medium is also called audio-visual medium. Though, it is very effective in transmitting agricultural programmes, its uses depend on the availability of electricity. The use of TV enables the extension worker to demonstrate everything that he talks about to farmers and show pictures on results of some recommended practices.

**Posters**

It is a sheet of paper with illustrations and few words to emphasis a fact or an idea. The illustrations can be in the form of cartoons, pictures or tables. If posters are properly designed and posted at vantage points, they catch the attention of people passing by and stimulate their interest in the ideas the posters are carrying across. The message should be clear and simple. It must be straight to the point so that readers do not waste time unnecessarily before getting the idea. Printing must be bold and clear to attract people from some distance.

**Newspapers**

These are daily or weekly publications. Information on some recommended practices; new ideas and innovations are published in these newspapers for farmers, extension workers and researchers. The information can be in the form of articles, cartoons with descriptions or footnotes.

**3.2.6. Feedback**

Feedback refers to the process by means of which the source obtains information as to whether and how his intended receiver has indeed received the message. Such information can help to modify ongoing or future communication behaviour (Mcquail and

Windahl, 1981). Moreover, the feedback helps to determine either the source or receiver's reaction to the information between them. The extension delivery process can be said to be complete only when there is a response from the receiver, or an effect or change is seen in the receiver.

### **3.3. STRATEGIES OF EXTENSION DELIVERY**

Extension delivery consists of a continuous series of processes, which employ different strategies in order to make information available to farmers. Adhikarya (1994) operationally defined extension strategy as the best possible use of available and/or limited resources (time, funds and staff) to achieve the greatest returns or pay-off on information dissemination.

The effectiveness of an extension delivery programme according to Adhikarya (1994) depends very much on its strategies. The strategies he postulated should be specific, systematic, well planned and above all acceptable to the beneficiaries of the extension activities. To this end, Adhikarya (1994) suggested that a good extension delivery programme or campaign should have strategies which reflect beneficiaries' identified problems or needs and the way information, education and communication will be used in solving such problems or meeting the needs. The extension delivery strategies among other things should serve to make information on agricultural technologies available in the form, which farmers can easily understand and appreciate. These extension delivery strategies may include:

1. The use of farmer groups
2. The use of demonstrations
3. The use of field visits

#### 4. Farmer participation

##### **3.3.1. The use of farmer groups as extension delivery strategy**

Extension delivery as Maunder (1972) observed is concerned with changing the knowledge, attitudes and practices of large numbers of rural people. To do this effectively, it must take into account not only the wants, desires and wishes of individuals but also how they act and react as a group.

Each person chooses whether to adopt or reject a new idea or farming practice, but this choice is the result of interplay of many forces both within and outside the individual. His experience, education, traditions, mental capability and many other internal influences affect his decisions and choices. But there are many goals he cannot attain alone. Education for his children, medical services, improved roads, better markets; flood control and irrigation projects being some examples of such goals, which the individual farmer cannot achieve on his own. These require group action. The individual is also influenced in his decisions by the attitudes of others in his group or community, and he in turn influences them. In traditional societies this influence is so strong that few will act in opposition to the socially accepted standards of the group (Maunder, 1972).

A central feature of a group is interplay of its basic parts, which enable individuals within the group to move in the same direction. The basic parts of the group outlined by Maunder are:

- i. The Group itself
- ii. The Group goals
- iii. The Group techniques

i. The group as a ingredient of group dynamics

The group is made up of individual members each quite different from the other. Each has his/her special interests, drives, motivations, expectations and hopes. Moreover, each member has definite values, attitudes, feelings, habits and beliefs. Each person also brings to the group certain negative forces such as his premonitions, fears and frustrations.

Furthermore, every member has an ulterior motive such as personal gain or desire to be achieved and which might have served as the motivating factor to join the group. The interplay of these individual characteristics goes a long way to make or unmake the group. It is therefore suggested that for the group to achieve its set objectives or goals, there is always the need for a midpoint of compromise among all these diverse characteristics of its individual members (Maunder, 1972).

ii. The group goals as ingredient of group dynamics

Every group has goals, purposes or objectives. These goals, purposes or objectives serve as the focal point for the formation of the group as well as ensuring its existence, otherwise, it will cease to exist. Sometimes the goals may be vague and only implied. However, for a group to be productive it must have specific goals adopted and understood by the group members. In a democratic situation, the members may choose group goals. In certain instances however, the group leader may choose these goals, purposes or objectives or a committee appointed by the group may be tasked to outline such goals, purposes or objectives.

iii. The group techniques as ingredient of group dynamics

The group technique as defined by Maunder (1972) is a pre-designed pattern for human interaction within the group as compared to random behaviour. An effective technique motivates and activates the dynamics of the group so that the group is better focused, integrated and directed towards achieving its goals. Some better-known techniques are discussions, forums, role-play, dialogues, interviews and committee hearings (Maunder, 1972).

The use of farmer-groups as an extension strategy enables the extension agent to reach a relatively large numbers of farmers of farm families at a time. It is also advantageous where time, staff and resources are limited. Not only that but also members of the same group learn from the extension agent as well as from each other. For effective interaction, it is recommended the group size should be 15 and 25 people.

### **3.3.2. The use of demonstrations as extension delivery strategy**

Demonstrations, according to Maunder (1972) is showing someone how to do a new job or showing someone how to do an old job better. In his opinion, the strength of demonstration lies in its obviousness, that is, its ability to appeal to logic and reason. It also offers a first hand feel to learners in order to observe and/or participate in performing a specific agricultural task.

Not only that but also, demonstrations may stimulate farmers to try out innovations themselves, or may even speed up the process of adoption of innovation by the farmer. They can show causes of problems and possible solutions without complicated technical details, especially where the demonstration is of “results” of certain actions. For example,

farmers can be shown the results of applying fertilisers at different times to overcome soil deficiencies without them having to understand the biological process behind these effects (van den Ban and Hawkins, 1988).

In extension delivery two main types of demonstrations are employed:

- i. Method
- ii. Result

#### i. Method Demonstration

This describes the process when the extension agent shows a group of farmers how to perform an agricultural operation. This, according to Maunder (1972) is the oldest form of teaching. In Maunder's opinion, men taught their children how to cultivate and how to survive, through various forms of method demonstrations long before language itself developed.

In method demonstration, the extension agent teaches his/her clients the step by step performance of a task like building a latrine, treating seed, planting seed in lines or using a mechanical duster to control insects. Maunder (1972) outlined some of the steps involved in method demonstration as follows:

The extension officer should set out the objectives of what he wants to accomplish with the demonstration. The objectives must be based on the availability and supply of equipments needed for the demonstration.

The extension officer conducts a background survey in order to gather enough information on the practice on which he is conducting the demonstration.

He should seek the approval of the farmers by discussing with them the whole programme and the things needed.

All the materials needed for the demonstration must be assembled with the help of the farmers. Most of the materials it is recommended must include local ones, which the farmers can easily afford when they want to carry the practice on their farms.

The stepwise presentation of the demonstration must be rehearsed so as to be conversant with what is to be done and said at each step.

Each step must be explained to the farmers and they must also be involved in the demonstration by being asked to perform different aspects of it.

At the end of the demonstration, a brief summary of the steps and the importance of the demonstration should be given as well as where materials and equipment can be purchased. Time should also be allowed for questions and clarifications to be made.

#### ii. Result Demonstration

This is meant to show the farmers the result of a recommended practice. It shows after a period of what happens when a recommended practice is used. For the results to show, it is best to carry out alongside the usual traditional practice, to enable the farmers see and compare the differences under the two systems. This helps to convince the farmers of the superiority of the recommended practice over the traditional one.

As an example, they can show that a farmer can increase his yields by applying the right levels of fertilizer or by using high-yielding crop varieties in combination with careful land preparation, fertilizer and pest control. Results demonstrations are rather similar to experimental plots, but they often compare only two practices without any replication. The fields or demonstration plots have to be rather large to convince farmers. Results demonstrations are very important for making people aware of innovations in countries where the mass media play a limited role because of illiteracy or limited access to media outlets (van den Ban and Hawkins, 1988).

### **3.3.3. The use of field trips as an extension delivery strategy**

It involves the travelling of a group to another place e.g. a research institute, a successful farmer's farm or a diseased-prone farm. For the group to have a successful trip the extension worker in consultation with the planning committee should ensure the following:

- (i) He must clearly define the aims of the trip and explain the trip to the group.
- (ii) He must brief the host on the objectives of the trip, how many people he should expect, what they want to see, when they would make the trip and the duration of the trip to enable the host to prepare adequately.
- (iii) Draw a schedule of the trip so that time is not wasted unnecessarily.
- (iv) The extension officer must endeavour sustain the interested of the group during the trip through discussions.

Farmers on field trips are shown farms and sometimes-experimental fields outside their own area. According to van den Ban and Hawkins (1988), field trips provide opportunities to demonstrate for farmers to observe the effects of different farm practices

and to discuss these practices with other experienced farmers. Moreover, they asserted that field trips provide an excellent opportunity to show farmers farm organisations, which are not yet available in their home village or district. However, the principal function of field trips is to make farmers aware of innovations away from their immediate home district, which may be useful to them.

#### **3.3.4. The use of farmer participation as an extension delivery strategy**

According to Rivera and Gustafson (1991), one important consideration in analysing the role and structure of extension organisations, within the context of any national agricultural policy is the degree of farmer involvement, and influence generally termed as farmer-participation. The underlying assumption of farmer-participation in extension delivery in the view of Lionberger and Chang (1981) is that farming people have much wisdom regarding production of food from the land, but their level of production could be improved by learning more of what is outside their indigenous knowledge systems.

This indigenous knowledge is different from the scientific knowledge system and farmers can gain much by the interaction of the two. Moreover, effective extension delivery cannot be achieved without the active participation of farmers themselves. Farmer-participation, according to Lionberger and Chang (1981), has been shown to increase commitment to the extension programmes.

Other extension delivery strategies may include farmers' field days and presentations at durbars and forums (Al-Hassan et al 1998).

### **3.4 CONSTRAINTS AFFECTING EXTENSION DELIVERY**

A problem solving extension delivery system cannot be achieved without discounting constraints, which may militate against its smooth operation. It is thus imperative that for any extension delivery organisation to achieve its main objective of making information accessible to its clients, it must identify and deal with any such constraints in a realistic way to achieve its set objectives.

Among others, the identified constraints, which may affect an extension delivery organisation, include:

1. Inadequate personnel training and staff development
2. Lack of reports on extension activities
3. Unavailability of materials for extension delivery
4. Lack of staff Motivation

(Adhikarya, 1994; Howell, 1989; Kaimowitz, 1991; Maunder, 1972)

#### **3.4.1. Training and Development of Personnel**

Jucious (1963) defined training as the process of acquiring specific or special skills to perform a job. According to Maunder (1972), the nature of extension delivery like any profession calls for special knowledge, skills, understanding and attitudes. All extension workers require all or at least some of these character traits in order to effectively do the work they are employed to do. These traits in most cases are acquired through training. Adhikarya (1994) therefore envisaged that, without a core-group of extension personnel who are well trained to acquire these traits in addition to planning, implementing and managing extension delivery, it would be very difficult to achieve the aims and the objectives of the extension organisation.

In the same vein, Leagans (1961) surmised that economic and social growth particularly among rural dwellers depend on the ability to build adequate staff that are properly trained to manage the rural development enterprises. Hence, shortages of adequately trained personnel according to Maunder (1972) may limit the effectiveness of extension delivery services.

From the viewpoint of many researchers, two main types personnel training and development stand out as most important and desirable. These are:

i. Induction Training

ii. In-service Training

i. Induction Training

Maunder (1972) classified induction training as the training given to new extension personnel after they have been employed and before they are assigned to work in a particular area. In his opinion, when extension service is first established in a country, the entire staff from the director and deputy director, administrators and national level specialists, down through the area supervisors to the local level personnel, all need special training to prepare them for their particular jobs and to give them understanding of what agricultural extension is about including its principles, objectives and philosophy, and methods of reaching farm people with improved practices recommended by the extension organisation.

Maunder (1972) envisaged therefore that induction training should help develop an attitude of personal dedication to the service of rural people as the training is to

supplement whatever pre-service training the new personnel might have had. The process of induction training as outlined by Maunder should include:

- ❖ Helping the new worker to know the history, objectives, scope and philosophy of his country's extension service.
- ❖ Acquainting him with the extension organisation he has just joined, its policies and procedures.
- ❖ Helping him to understand what his responsibilities are to the extension organisation and the advantages of extension as a profession.
- ❖ Helping him to appreciate well, the kind of moral conduct and behaviour that is expected of him.
- ❖ Helping him to understand the rules and regulations that apply to his job.
- ❖ Helping him to know the job he is expected to do and how he should do it. He should also be trained in extension delivery methods and subject matter that applies to his work.
- ❖ Training the worker in practical agricultural skills required in his work, which might have not been provided through previous training and experience.
- ❖ Helping him to know and understand the problems of the people in his operational area.

Induction training is usually divided into three parts:

**Classroom instruction** regarding the organisational structure of his organisation, operational procedures and how reports are done, subject matter regarding farm production and home economics, and the various extension methods appropriate for teaching different kinds of subject and related skills.

**Observation** of work in progress at government research stations and farms, the activities carried on by successful local farmers and home advisors, demonstrations and field days.

**Supervised field training** in which each trainee is assigned for apprentice work with a successful advisor to work for six months to a year to learn the various extension activities and teaching methods (Maunder, 1972).

## ii. In-service Training

This form of training, according to Maunder (1972) includes all forms of training for professional extension personnel during their period of employment by the extension organisation. It may involve both on-the-job training and training while away from the job on educational leave. Three most important forms of in-service training are recommended. These are:

### Local Area Training Sessions

This covers any kind of training of local level personnel, lasting from half day to a week and is conducted within an area where the particular subject matter is applicable. Half-day training sessions may be held in a livestock producing area when a new government regulation is to go into effect regarding testing milk cattle for contagious abortion. The agricultural extension workers in the territory around a central market town to which travel for them is convenient are called to a meeting in that town. The government veterinary officer may be called to explain the regulation, what is to be done, why it has to be done, how the regulation will be carried out, and the educational role to be played by the local extension personnel.

### Short Courses

The period extends through one or two weeks. Generally, short courses are given on the campus of an educational institution, such as an agricultural college, or an extension-training centre. The distinguishing feature of a short course is that it concentrates intensively on one subject area and important supporting topics. It may deal with milk production and housing, breeding, feeding, controlling common diseases, and the management of animals and the dairy enterprise in general.

### Refresher Courses

Refresher courses usually extend for four to six weeks and cover the supporting subjects as well as the main theme as broiler production, or a broader subject such as extension education methods (Maunder, 1972)

### **3.4.2. Reporting on extension delivery activities**

In the view of Maunder (1972), whatever the stage of development of an extension programme in any given country, some system of reporting by the workers is essential, if that programme is to operate effectively. Adequate and accurate reports, according to him, form the major means of communication between the various governmental departments and the local participants upon whose combined support, the programme depends.

Extension reporting systems, like the extension programmes vary from country to country. Some programmes have complete reporting systems already in operation and others may have none. Considerable diversity in reporting systems is not only expected, however, it is to be desired as well. No reporting system, regardless of how well it may

seem to serve the purpose in the country in which it was developed, can be lifted bodily and set into effective operation in another country. In each country, reporting system must be tailored to meet the special needs of the existing situation (Maunder, 1972).

#### i. Importance of Extension Reports

Some of the more significant values and uses for extension reports as outlined by Maunder (1972) are as follows:

##### Self-Appraisal and Planning

The over-all objective of extension programmes is to help farmers to develop and to increase their ability and desire to help themselves. If this objective is to be reached, extension programmes must be based on these farmers, where they are, their present facilities, resources and conditions. Their conditions must be monitored for significant changes. As these changes come about, the agent will need to revise his programmes to fit the new situation. However, if these changes do not come about as fast as it is expected, the extension agent will need to revise his procedure and methods in order make them more effective.

The very act of preparing reports require the extension agent to review his past activities and resulting accomplishments in terms of changes in his farmers and their situations. A study of past reports helps the agent to evaluate the effectiveness of his work. A review of these reports may uncover areas of weaknesses and strengths in past operations. With this knowledge the extension agent can more intelligently plan for future programmes and execute them more successfully.

### Job Advancement

Advancement within the ranks is one of the incentives motivating workers to do their best. The future success of an extension agent advanced to a more responsible position depends often on how accurately his supervisor has appraised his ability and past operations. Among the several source of information available to the supervisor in his appraisal of a worker's effectiveness, are the reports previously prepared by the worker.

### Planning the Supervisory Programmes

It is usually recommended that the extension supervisory officer must plan his supervisory programmes such that, he can spend the major part of his time with the agents needing most help and minimum amount of time with the more successful agents. Accurate reports from the agents will furnish the basic information that will help the supervisor in his/her planning.

### Director's Guidance of the Over-all Programme and Organisation

The director is responsible for guiding the over-all programme. He must also direct the organisation and interpret administrative directives, rules and regulations applying to his particular region. To carry out these directives and make his subordinates comply with these rules and regulations, he must prepare and put into effect various plans and instructions. To fulfil these duties, the director must make use of up-to-date information on what is happening in his/her region. This is achieved by making use of reports from field workers and their supervisors.

### Background for New Workers and Supervisors

From time to time workers and supervisors may be transferred to where extension work has been carried out by another person. In such case, the new person must become familiar with the local situation. This becomes possible and easier if he is to base his programme on the clients' present situation. As background material for making a rapid and accurate assessment of the situation, a complete set of reports left by the former worker or supervisor will prove extremely valuable.

### Justifying Public Expenditure and Supporting Budget Requests

In nearly all countries where extension has developed to any appreciable extent, it depends on public funds for its support. As with any organisation depending on public funds, it has two important obligations:

- a. To justify past expenditures and
- b. To support requests for budgets with valid evidence of its worth in national development.

High government officials and those responsible for budgetary allocations and appropriations must determine the uses to which public funds will be put. They therefore look to extension administrators to furnish them with information justifying and supporting budget requests. Without adequate reports from the field, administrators would be unable to perform these obligations.

### Securing Public Support and Interest

For its ultimate success, extension needs public support and interest. It needs the support and interest not only of the local people in the operational area but of the nation as a

whole. Wherever extension is chalking success, stories of its activities and resultant accomplishments and agricultural improvements go a long way in securing such public interest and support.

Extension officials or publicity departments, who must present these stories to the general public in an interesting fashion, look to reports as the best source of ready information for these stories. The extension agent, depending on how he relies on public support and interest has an obligation to include in his reports, facts and information of interest to the public (Maunder, 1972: 231 - 232).

## ii. Types of Extension Reports

To operate an effective reporting system two main types of reports according to Maunder (1972), will usually be required of the extension worker. These are:

- i. Short-term reports
- ii. Long-term reports

### Short-term reports

These refer to reports submitted either semi-monthly or monthly. These are primarily operational reports, that is, most of the information, which they contain, derives from work performed by the field staff and supporting parties.

### Long-term reports

These are submitted either quarterly or annually. They primarily record accomplishment, progress made and point out desirable changes, which have resulted from the activities of the extension organisation (Maunder, 1972).

### iii. Frequency of Reporting

A first principle of a good reporting system as Maunder (1972) noted is that only truly essential reports should be required. This is because time spent in preparing reports may take away a considerable and essential part of the time needed by the extension agent on the field.

Where the extension service is new and relatively undeveloped, the agent may need to submit a short-term report to the supervisor every 15 days. The director on his part may be required to make a quarterly report to the administrative officer. When these frequent reports are available, supervisors and administrators can keep more closely in the touch with current operations. At the same time, the field reports, being frequent, should be brief and relatively easy to prepare.

As an organisation develops, fewer reports will be required. It is assumed that within this period, field operational patterns will become established. Supervisors and directors will become more familiar with the work of the individual agents. The field workers themselves will become more proficient in preparing their reports. At this time, short-term reports should be made to cover a longer period and can be somewhat more comprehensive (Maunder, 1972).

### **3.4.3 Availability of Materials for Extension Delivery**

The primarily objective of provision of materials such as stationary for organising communication aimed at reaching a large number of people; inputs such as seeds and agrochemicals for conducting demonstrations; or fuel and associated logistics is to enable the extension agent to execute the tasks for which he was employed.

As also surmised by van den Ban and Hawkins (1988), the extension agent needs to observe what his clients are doing and talk to them and show them how to go about certain jobs. These activities require the expenditure of resources in the form of fuel for motorbikes, which should also be in good condition. Timely supply of these resources and the right amount will go a long way to improve the efficiency and effectiveness with which the extension agent offers services to his clients. A budget to provide these resources has to be approved before funds may be allocated, a process, which involves comprehensive bureaucratic steps. Moreover, funds to meet the supply of these needed materials in most developing countries, according to Maalouf et al, (1991), is insufficient to provide adequate coverage of all groups of farmers, especially those who are resource-poor and at the subsistence level. Amanor and Farrington (1991) have reported that during times of budgetary stringency, many extension activities come to a standstill because of delays in receiving funds.

Maunder (1972), has also observed that when extension is in the hands of the national government, budgeting and disbursing of the fund for procurement of resources for extension activities are done by the administration in conformity with state policies and procedures. In this direction, the responsibility of the extension administration is to prepare and submit to the appropriate body, its budget for the fiscal year, including all proposed expenditures for salaries, allowances, transportation, office rent, equipment and supplies as well as any other expenditure for operating the extension programme.

In the face of such elaborate bureaucratic procedure, it becomes increasingly difficult for the extension agent to obtain the necessary materials to execute his information delivery activities. This assertion is confirmed by Maunder (1972) who noted that bureaucratic

formalities may make it practically impossible for extension workers to have materials and supplies they need in time for their use in carrying out their activities. He therefore suggested that this problem may be overcome by decentralising as much as possible the financing of the extension programme by allocating the funds for all categories of expenditures to regional offices and then authorising them to disburse and spend the funds in accordance with the provisions of the national budget.

In the case where financing is decentralised, and procedures are established on the regional level for disbursing funds, the central finance office of the extension service may put the necessary funds at the disposal of each regional office at the beginning of each trimester in proportion to the funds allocated for the fiscal year and require an account of expenses incurred during the previous trimester. In this case, the finance office can closely follow the execution of the budget in response to funds allocated to regional offices and ensure the financing of the programme without any serious delay (Maunder, 1972).

#### **3.4.4. Staff Motivation**

The study of motivation according to van den Ban and Hawkins (1988) looks at the factors that energise and direct people's behaviour. In the opinion of Vijayaragavan and Singh (1997), issues on motivation are important because extension organisation particularly in developing countries face major problems of lack of motivation among their employees. Feldman (1996) suggested two main forms, which are:

- i. Intrinsic motivation
- ii. Extrinsic motivation

Intrinsic motivation in Feldman's opinion causes people to participate in an activity for their own enjoyment and not for any tangible reward that it will bring. In contrast, extrinsic motivation causes people to do something for a tangible reward.

Van den Ban and Hawkins (1988) outlined some of the factors for intrinsic motivation as achievement, recognition, responsibilities, advancement and the work one does. In their opinion, all these determine job satisfaction. On the other hand, they claimed organisational policies, supervision, salary and working conditions can cause job satisfaction.

The first of these factors according to van den Ban (1988), leads to growth while improvement in the second set merely reduces discontentment. Hence, managers/supervisors/directors should provide employees with opportunities for job advancement and recognition, while at the same time minimising causes of dissatisfaction such as lack of clear-cut organisational policies, poor supervision, low salaries and insufficient operating expenses and bad working conditions. Low salaries and insufficient operating expenses in particular, according to Kaimowitz (1991) are major disincentive to extension work.

To this end, to motivate extension workers Kotter (1990) suggested that managers or organisational heads in extension delivery organisations should involve their field officers in deciding how to achieve their organisation's visions and goals, particularly, those most relevant to the field officers. Another important motivational technique in his opinion is to support the field officers to realise these visions and goals by providing direction, feedback and role modelling, thereby helping the field officers to grow professionally and

enhancing their self-esteem. Finally, he suggested that managers should duly recognise and reward successful field officers, which he thinks, will not only give them a sense of accomplishment but also make them feel like they belong to an organisation that cares about them.

### **3.5. NON-GOVERNMENTAL ORGANISATIONS AND EXTENSION DELIVERY**

In recent years agricultural extension worldwide has been observed to be suffering from declining resource allocation which has brought in its trail intensification of the problems farmers face particularly the resource-poor ones in relation to their access to agricultural information (Amanor and Farrington, 1991; Wilson, 1991, Maalouf et al 1991). The issue of declining resource allocation has been attributed to the sole dependence of agricultural extension on one source of funding which in most cases tends to be the central government. Thus, in situations of national budgetary stringency, agricultural extension has been observed to be one of the most resource-starved departments.

#### **3.5.1. Attempts to solve resource problem**

Many attempts, according to Maalouf et al (1991) have been embarked on by various governments as a way of helping to solve this problem. Among these are:

- i. Increase in national extension budgets
- ii. Improving management of available resources
- iii. Use of investment funds for extension
- iv. External assistance

#### i. Increase in national extension budgets

The consensus of the FAO Global Consultation on Agricultural Extension according to Maalouf et al (1991) was that current funding for extension in most developing countries was insufficient to provide adequate coverage of all groups of farmers, especially those who are resource-poor and at the subsistence level. Thus, the need to increase the overall budget allocation for extension activities. However, the responses of governments particularly in Africa and the Near East to increase budget allocations to agricultural extension tend to be associated with the priority given to the agricultural sector, the percentage of the labour force employed in agriculture and national policies on farmers' participation and contribution to food and agricultural production in the economy (Maalouf et al 1991). As a result, the much-awaited increase in budget allocations to agricultural extension never becomes a reality and a decline is rather being observed.

#### ii. Improving management of available resources

Aside from being subjected to inadequate and unstable resources, agricultural extension systems in developing countries in particular, have been observed to be plagued by poor management practices. A number of initiatives have therefore been tried as a panacea to improving the management of existing extension resources (personnel, funds, facilities) with the hope of increasing efficiency and coverage. One of such, indicated by Maalouf et al (1991), is directed towards removing non-extension functions of extension agents, which in their opinion is capable of increasing extension coverage by at least 25 percent.

#### iii. Use of investment funds for extension

In accepting the resource limitation of governments to establish or strengthen effective extension services, and finding favourable economic returns from extension, an

increasing number of governments observed by Maalouf et al (1991) have used loans to support extension activities. Most of these loans have come from the World Bank and regional development banks. Despite this bold attempt to revamp extension, resource allocation through investment has been observed to be insufficient.

#### iv. External assistance

Reaching countries in the form of bilateral and multilateral technical assistance, external resources have been utilised for extension programme development or to support food production programmes. Such resources help increase extension coverage but in many instances the level of coverage is not maintained after the assistance project is completed (Maalouf et al, 1991).

For these reasons many NGOs have recognised the need to enter the extension arena with the objective of increasing resource allocation for extension activities, thereby increasing extension coverage.

### **3.5.2. Nature of NGO activity in extension**

In areas where these private extension organisations operate, their participation in extension delivery has been observed to centre on networking with the existing government-operated extension delivery organisations particularly in the area of information dissemination (Al-Hassan et al, 1998). Networking with existing government structures in the opinion of Bebbington (1989) is crucial, because the development of efficient strategies for extension delivery in most local communities depends on an understanding of the economic and political structures and policies which NGOs are incapable of doing by themselves.

Through these networking with government agencies, resources are pooled together and technical expertise and services as well as transport facilities are shared all in a bid to facilitate the coverage of wider spectrum of farmers. NGOs also play important roles in war-torn areas where government services can no longer operate or carry little legitimacy among the people (Amanor and Farrington, 1991).

### **3.5.3. Constraints to NGO activity in extension**

Major constraints to NGO activity in agricultural extension according to Amanor and Farrington (ibid) may arise from authoritarian, paternalistic political systems in which forms of popular democracy are discouraged. They argued that under these conditions NGOs might find their agendas to network with government agencies severely curtailed.

Furthermore, Amanor and Farrington (1991) surmise that a potential problem may arise from continued adherence to a centralised or bureaucratic system of managing agricultural extension, which does not incorporate into itself the potential contributions of NGOs.

***PART TWO: PRESENTATION AND DISCUSSION OF FINDINGS***

## CHAPTER FOUR

### EXTENSION DELIVERY PROCESS AND STRATEGIES

#### 4.0 INTRODUCTION

This chapter seeks to answer the first of the research questions-Does the extension delivery process and strategies of MOFA differ when networking with an NGO?

To achieve this, the following objectives of the study were analysed.

##### Objectives

1. To identify the NGOs networking with MOFA in the study area,
2. To identify the strategies of the NGO-MOFA network,
3. To determine the characteristics of farmers targeted by the NGO-MOFA network,
4. To determine the methods of extension delivery used by the NGO-MOFA network on one hand and MOFA alone on the other,
5. To determine the problems, which affect the performance of these extension delivery systems (NGO-MOFA network and MOFA alone)
6. To determine the differences in the clients' accessibility to information.

Based on the farmers' and extension agents' assessments obtained on the above, the analysis took the form of a comparison between the MOFA-NGO network on one hand and MOFA alone on the other. The chapter also deals with discussion of the findings of the analysed results. The chapter is presented in the following order:

- ◆ NGO(s) networking with MOFA in the study area.
- ◆ Characteristics of farmers targeted by extension delivery systems.
- ◆ The methods of extension delivery and how farmers obtain information.

- ◆ Strategies of extension delivery
- ◆ Factors affecting extension delivery
- ◆ Gap 1: Difference between the process of extension delivery and strategies of MOFA with and without NGO network

#### 4.1 NGOs NETWORKING WITH MOFA

The NGO networking with MOFA in the study area was the World Vision, Ghana. On the average, the extension agents of MOFA networking with this NGO indicated that they had worked with the NGO for 2 years. The highest period of extension agent working with the NGO was found to be 3 years and the lowest was 1 year.

#### 4.2. CHARACTERISTICS OF TARGET FARMERS

##### 1. Gender Status of Respondents

On the NGO assisted farmers' side, 33 (66%) of the respondents were women and 17 (34%) were men. This is in contrast to 22 (44%) women and 28 (56%) men without NGO support.

**Table 4.1: Distribution of gender status of respondents**

Gender status of respondents	NGO assisted farmers		Non-NGO assisted farmers	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Women	33	66.0	22	44.0
Men	17	34.0	28	56.0
Total	50	100.0	50	100.0

SOURCE: FIELD SURVEY

## 2. Educational Status of Respondents

From Table 4.2, 46 (92%) respondents from the NGO-MOFA network indicated that they did not have any formal education and 4 (8%) indicated that they passed through SSS.

For farmers without NGO assistance, 45 (90%) indicated that they had no formal education, 3 (6%) indicated that they ended their formal education at the SSS level, 1 (2%) had some form of formal education to the JSS level and 1 (2%) had diploma.

**Table 4.2: Distribution of educational status of farmers**

Educational status of respondents	NGO assisted farmers		Non-NGO assisted farmers	
	Frequency	(%)	Frequency	(%)
No formal education	46	92.0	45	90.0
JSS	0	0	1	2.0
SSS	4	8.0	3	6.0
Diploma	0	0	1	2.0
Total	50	100.0	50	100.0

SOURCE: FIELD SURVEY

## 4.3 METHODS OF EXTENSION DELIVERY

All the 50(100.0%) respondents who have access to NGOs indicated that their extension agents use a combination of individual and group methods to reach them with information. On the contrary, 41(82.0%) respondents with no access to NGOs indicated the extension agents reach them with information on individual basis whilst 9(18.0%)

indicated they receive their information through a combined group and individual methods. Table 4.3 presents this.

**Table 4. 3. Distribution of methods of information dissemination used to reach farmers with information**

Method	NGO assisted farmers		Non-NGO assisted farmers	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Individuals methods only	0	0	41	82.0
Combined individual and group methods	50	100.0	9	18.0
Total	50	100.0	50	100.0

SOURCE: FIELD SURVEY

The NGO-MOFA network approach harnesses the advantages of both individual and group methods of extension delivery more than the MOFA alone. According to Laird (1972), much is achieved when one method of extension delivery is used to reinforce the other(s).

### **1. Methods of information accessibility used by farmers**

Concerning how farmers access information from the extension delivery organisations, 38 (76.0%) of farmers having access to NGOs indicated that their extension agents come to them with the information they need, while the remaining 12 (24.0%) indicated that they go to the extension agents for their information. On the other hand, 25 (50.0%) of those having no access to NGOs indicated that their extension officers come to them with

information and 25(50.0%) indicated that they go to their extension agents before they could have access to information. This is presents in Table 4.4.

**Table 4.4: Distribution of methods of information accessibility used by farmers**

Channel	NGO assisted farmers		Non-NGO assisted farmers	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Extension agents go to farmers	38	76.0	25	50.0
Farmers go to extension agents	12	24.0	25	50.0
Total	50	100.0	50	100.0

SOURCE: FIELD SURVEY

Extension service providers, according to Anthony, Johnston, Jones and Uchendu (1979) are intended to inform farmers and encourage them to adopt and/or adapt new methods and inputs that are more likely to increase net productivity. This, in the view of Maunder (1972), can be achieved by a number of regular and sustained visits and follow-up visits by the extension agents to know the problems and the capabilities of their clients to solve these problems as well as gaining their confidence. Therefore the number of times the extension agents visit their clients provides a rough measure of how best the intended objectives of an extension delivery organisation of reaching its clients with information can be achieved by its workers.

## 2. Extension agents' concern for farmers' activities

From Table 4.5 all 50 (100%) NGO assisted farmers indicated that their extension agents show concern for their activities, whilst 25 (50.0%) of those without NGO links indicated

that their extension agents show concern for their activities and the other 25 (50.0%) indicated that their extension agents do not show concern for their activities. Chi-square analysis showed a statistically significant difference between the categories, that is, NGO assisted farmers and non-NGO assisted farmers with regard to concern for farmers activities shown by extension agents ( $p < 0.05$ ).

**Table 4.5: Distribution of extension agents' concern for farmers' activities**

	Number of farmers who gave responses by category			
	NGO assisted farmers		Non-NGO assisted farmers	
Does extension agent show concern for your (farmers') activities?	n	%	n	%
Yes	50	100	25	50
No	0	0	25	50
Total	50	100	50	100

$\chi^2 = 33.333$  df = 1 p < 0.05 significant

SOURCE: FIELD SURVEY

On why the respondents think the extension agents show concern for their (farmers) activities, they indicated that the extension agents go all out to help them in situations when they (farmers) are failing in their agricultural endeavours. On the other hand, farmers who said that their extension agents do not show concern indicated when they as farmers fail in their activities, the extension agents still receive their salaries. However, the farmers were of the view that once they fail in their agricultural activities, their extension agents who were suppose to direct them (farmers) to achieve success, should be made to forgo their salaries.

Apart from clearly defined job descriptions and specifications which Vijayaragavan and Singh (1997) postulated as being essential to ensure regular visits by the extension agents to his/her clients, studies have shown that farmers are more willing to encourage such visits from the extension agents depending on the working relationship struck between them and their extension agents. The underlying factor of the relationships existing between the local extension worker and his/her clients, most researchers believe, is the concern the extension worker expresses for the welfare of his/her clients. Thus, farmers are more willing to work with extension agents who show concern for their activities.

#### **4.4. STRATEGIES OF EXTENSION DELIVERY**

The strategies identified to be used by the extension delivery organisations are:

1. Field trips
2. Demonstrations
3. Farmer groups
4. Farmer participation

##### **1. The use of field trips as extension delivery strategy**

Out of the 50 farmers who have working relationship with NGOs, 26 (52.0%) said their extension agents take them on field trips and the remaining 24 representing 48.0% said their extension agents do not take them on field trips. However, of the 50 respondents having no access to NGOs, 16 of them representing 32.0% said their extension agents take them on field trips whilst 34 of them representing 68.0% said their extension agents do not take them on field trips.

**Table 4.6: Distribution of field trips organised for farmers**

	Number of farmers who gave responses by category			
	NGO assisted farmers		Non-NGO assisted farmers	
Does extension agent organise field trips for you (farmers)?	n	%	n	%
Yes	26	52.0	16	32.0
No	24	48.0	34	68.0
Total	50	100.0	50	100.0

Yates corrected  $\chi^2 = 3.33$  df = 1 p = 0.0682 not significant SOURCE: FIELD SURVEY

One of the many advantages of field trips as outlined by Maunder (1972), is that, farmers on field trips have the advantage of being exposed to innovations, which previously they might have not known. It therefore stands to reason that farmers with access to NGOs are more likely to gain access to agricultural information than their counterparts who do not have access to NGOs. Exposures gained from field trips, according to Maunder (1972) may be permanently recorded in the mind, thereby broadening the horizon of such farmers who have the opportunity to go on field trips.

As to the benefits of such field trips, the respondents indicated that they get exposed to better methods of fish processing, learnt new technologies of gari processing and how to propagate mango on commercial basis. Moreover, the respondents indicated that for the first time, some of them got into contact with sunflower production, learnt different ways of preparing seedbeds and the use of neem tree extract to prevent insect attack on vegetables.

However, analysis using chi-square indicated no statistically significant difference between farmers having access to NGO assistance and those without such assistance with regard to field trips organised for farmers ( $p>0.05$ )

## 2. The use of demonstrations as extension delivery strategy

All the 50 (100%) farmers having access to NGOs also have the opportunity of their extension agents mounting demonstrations on agricultural practices for them as indicated by the Table 4.7.

**Table 4.7: Distribution of demonstrations organised for farmers**

Does extension agent mount demonstrations for you (farmers)?	Number of farmers who gave responses by category			
	NGO assisted farmers		Non-NGO assisted farmers	
	N	%	n	%
Yes	50	100.0	35	70.0
No	0	0	15	30.0
Total	50	100.0	50	100.0

Yates corrected  $\chi^2 = 15.37$   $df=1$   $p<0.001$  significant SOURCE: FIELD SURVEY

However, of those without access to NGOs, 35 of them representing 70.0% indicated that their extension agents conduct demonstrations for them and 15(30.0%) indicated that their extension agents do not mount demonstrations for them. Analysis using chi-square indicated that there was a statistically significant difference between farmers having access to NGO assistance and those without such assistance with regard to demonstrations being used as an extension strategy to reach farmers with information ( $p<0.001$ ).

Demonstrations in the opinion of Maunder (1972), among other things, furnish local proof of the desirability of adopting a recommended practice, enhances farmers' understanding of information sent to them as well as establishing confidence in the extension worker and in his/her extension activities. It may therefore be inferred that farmers with NGO links are more likely to understand and adopt an innovation than their counterparts with no such links to NGOs.

### **3. Supply of materials for demonstrations**

Out of the 50(100.0%) respondents who have access to NGOs and whose extension agents conduct demonstrations for them, 49(98.0%) indicated that the materials for demonstrations are wholly supplied by the MOFA-NGO network they work with whilst 1(2.0%) indicated he/she contributes to the supply of the materials. However, of the 35 farmers who do not have access to NGOs but whose extension agents mount demonstrations for them, 34 (97.1%) of them indicated they contribute to the supply of materials needed to mount demonstrations, whilst 1(2.9%) indicated the materials for demonstrations are supplied by the organisation of the extension agent.

Given the fact that agricultural demonstrations require the use of such inputs like agrochemicals and seeds, the public supported extension service providers find it difficult to conduct demonstrations. This is because, according to Maalouf et al, (1991), there is a general trend of declining resource allocation for public extension activities. On the NGO side however, Cernea (1988) reported that international funding agencies view NGOs in a favourable light and therefore make available to them (NGOs) a wide range of funding arrangements. This is more likely to put the NGOs on a better pedestal to be in a position

to supply materials needed to mount demonstrations for their clients than it is for the non-NGO assisted public extension delivery organisation.

To buttress the fact that NGOs view demonstrations as an important extension delivery strategy, all the 10(100.0%) extension officers on the MOFA-NGO network side indicated that they organise demonstrations for their clients, whilst 7(70.0%) on MOFA side indicated that they organise demonstrations for their clients as shown on Table 4.9.

**Table 4.8: Distribution of extension agents who organise demonstrations for their farmers**

	Number of extension agents who gave responses by category			
	MOFA-NGO network		MOFA	
Do you mount demonstrations for your farmers?	n	%	n	%
Yes	10	100.0	7	70.0
No	0	0	3	30.0
Total	10	100.0	10	100.0

SOURCE: FIELD SURVEY

As to why on the NGO side they organise demonstrations for their clients the extension agents indicated that materials for demonstrations are readily supplied when the need arises. However, on the MOFA side, the extension agents indicated that in most cases farmers have to contribute to the supply of materials for demonstrations, thereby making it difficult for them to organise such demonstrations for the farmers.

#### 4. The use of farmer-group as extension delivery strategy

All the 50(100.0%) respondents with access to NGOs reported that they belong to farmer-groups. This is in contrast to 9(18.0%) out of the 50 respondents having no access to NGOs, who indicated that they belong to farmer-groups, whilst the remaining 41(82.0%) do not belong to any farmer-groups as indicated by Table 4.10

**Table 4.9: Distribution of organisation of farmers into groups**

Do you belong to farmer group?	Number of farmers who gave responses by category			
	MOFA-NGO network		MOFA	
	n	%	n	%
Yes	50	100.0	9	18.0
No	0	0	41	82.0
Total	50	100.0	50	100.0

SOURCE: FIELD SURVEY

It can be inferred that NGOs view local problems from an integrated community perspective and are therefore committed to solving these problems using a community (group) initiative. As well as reducing cost in terms of time and staff efforts, reaching farmers in groups as an extension delivery strategy according to Bradfield (1966), is important because group decisions usually carry more weight in a community than the decision of an individual. An individual according to Bradfield, may not be willing to put into practice recommended practice on his/her own because he/she fears the adverse opinion of others. However, if that individual is part of a group of people who have agreed to try the new practice, he/she is much more likely to act on it. This therefore confirms the assertion made by Schram (1964) that social change is much easier achieved through groups as the individuals who must change live in groups, work and play in

groups and enjoy many experiences in groups. Moreover, many of the beliefs and values they hold most strongly are group norms.

### 5. The use of farmer-participation as an extension delivery strategy

All the 50 (100%) respondents having access to NGOs also reported that their extension agents involve them in generating information in order to solve an identified problem. This is in contrast to 34 (68.0%) of the 50 non-NGO assisted respondents who indicated that their extension agents involve them in information generation and the remaining 16 (32.0%) respondents said their extension agents do not involve them in generating information for their agricultural activities.

**Table 4.10: Distribution of farmers' involvement in information generation**

	Number of farmers who gave responses by category			
	NGO assisted farmers		Non-NGO assisted farmers	
Does your extension agent involve you in information generation?	n	%	n	%
Yes	50	100.0	34	68.0
No	0	0	16	32.0
Total	50	100.0	50	100.0

SOURCE: FIELD SURVEY

The Participatory Technology Development concept developed by NGOs assumes that farmers are and remain the main actors in the process of technology development and that outsiders can best play a supportive role (Haverkort and de Zeeuw, 1991). Moreover, it is hoped that farmers' involvement even in such relatively less important issues as deciding on place of farmers' meetings and date of such meetings give them a sense of recognition

of their input in the extension delivery process, thereby ensuring local sustainability of programmes even when outside involvement is withdrawn.

As to the importance of their involvement in the various aspects of the extension delivery process, all the farmers indicated that their involvement results in getting appropriate solutions to their agricultural problems and also put them in a better position to solve similar problems in the future. The respondents' reason for these assertions is that they are also knowledgeable and together with their extension agents they pull their knowledge together in solving an identified problem.

#### **4.5. FACTORS AFFECTING EXTENSION DELIVERY**

Extension delivery is influenced by many factors which in most cases determine the success or otherwise of the extension delivery process. Some of the factors identified by the study are:

1. Personnel training
2. Reporting on extension delivery activities
3. Availability of materials for extension delivery activities
4. Availability of means of transport extension delivery activities

##### **1. Personnel Training**

On the MOFA-NGO network side, 4 (40%) indicated that their most recent training was about a month ago from the period when this study was carried out whilst 6 (60%) indicated that their most recent training was about 2 to 6 months ago. However, on the MOFA side, 7(70%) indicated that their most recent training was about a year ago and the remaining 3(30%) indicated that training is not conducted these days.

**Table 4.11: Distribution of most recent training**

	Number of extension agents who gave response by category			
	MOFA-NGO network		MOFA	
Time of most recent training	n	%	n	%
About 1 month ago	4	40.0	0	0.0
About 2 to 4 months ago	6	60.0	0	0.0
About 1 year ago	0	0.0	7	70.0
It does not come on these days	0	0.0	3	30.0
Total	10	100.0	10	100.0

SOURCE: FIELD SURVEY

Frequency of training of extension agents is an essential integral part of their preparedness to cope with clients' situations as well as technologies needed to improve such situations. The underlying reason according to most researchers is the ever-changing nature of farmers' situations, technologies and performance requirements from both farmers and extension agents, which calls for new initiatives on the part of extension workers as well as development of suitable technologies by researchers to solve farmers, problems. Thus, a regular and sustained communication between extension agents and their clients on one hand and extension agents and researchers on the other hand becomes necessary. According to Maunder (1972), extension-client communication gives the extension agents first hand knowledge and understanding of the clients' ever-changing situations. In the opinion of Rivera (1991), effective diagnostic skills of extension agents in this direction can be achieved by means of in-service training on a regular basis especially when the extension agents' pre-service experience has been limited. Extension-research communication on the other hand, affords the extension agent the opportunity to

come into contact with latest research findings and technologies, which may be utilised to help improve farmers' situations. All these according to Maunder (1972) can be achieved by regular training. Thus, the need for a regular and sustained training schedules for extension workers.

## 2. Reporting on Extension Delivery Activities

The observed trend of reporting on Table 4.13 shows that on the MOFA-NGO side, all the 10 (100.0%) report their activities on fortnightly basis. On the MOFA side however, all the 10(100%) respondents indicated that they report on monthly basis.

**Table 4.12: Distribution of frequency of reporting on extension delivery activities**

Frequency of reporting	Number of extension agents who gave response by category			
	MOFA-NGO network		MOFA	
	n	%	n	%
Fortnightly	100	100.0	0	0.0
Monthly	0	0	10	100.0
Total	10	100.0	10	100.0

SOURCE: FIELD SURVEY

According to Maunder (1972) when extension work has been carried on for some time in a given area, the changes in both people and situation will usually follow certain definite trends. These trends, he said would be revealed when reports covering the period are analysed. Knowledge of such trends in Maunder's opinion is an important guide in planning future programmes.

### 3. Availability of materials for extension delivery

On the MOFA-NGO side all 10 (100%) respondents indicated that they use teaching aids for their extension delivery activities. On the other hand, 6(60%) respondents on MOFA side indicated they employ teaching aids in their work as indicated by Table 4.14.

**Table 4.13: Distribution of usage of teaching aids for extension delivery**

	Number of extension agents who gave response by category			
	MOFA-NGO network		MOFA	
Do you make use of teaching aids for your extension activities?	n	%	n	%
Yes	10	100.0	6	60.0
No	0	0	4	40.0
Total	10	100.0	10	100.0

SOURCE: FIELD SURVEY

Developing countries have a much higher percentage of their population employed in the agricultural sector with a large number being small-scale farmers, which the agricultural service providers are responsible for servicing (Amanor and Farrington, 1991). Servicing of these large number of small-scale farmers particularly by agricultural extension organisations require much financial input, which in most cases pose a heavy burden to governments. It is therefore not uncommon for extension officers to indicate they do not use such materials as teaching aids for their extension delivery activities.

On the issue of who supplies materials for trainings, all the 10(100.0%) extension agents on the MOFA-NGO side indicated that the training materials are supplied by the NGO

and also all 6(60.0%) respondents using teaching aids on the MOFA also indicated that the teaching aids are supplied by MOFA.

#### 4. Timely supply of teaching aids

On the issue of timely supply of teaching aids to enable extension officers do their work, all the 10(100%) on the MOFA-NGO side indicated that the teaching aids are supplied on time, whilst all 6 (100%) on the side of MOFA who indicated that they use teaching aids said the supply of teaching aids for their work is not timely as indicated on Table 4.15.

**Table 4.14: Distribution of timely supply of teaching aids for extension delivery**

	Number of extension agents who gave responses by category			
	MOFA-NGO network		MOFA	
Is the supply of teaching aids for your extension activities timely?	n	%	N	%
Yes	10	100.0	0	0.0
No	0	0	6	100.0
Total	10	100.0	6	100.0

SOURCE: FIELD SURVEY

Even in circumstances where funds are made available, Kaimowitz (1991) noted existing tendencies towards bureaucratic and centralised administration procedures make it more difficult for timely procurement and supply of the needed materials for extension delivery by many state operated extension delivery organisations.

### 5. Supply of teaching aids in right quantities

Seven (7), that is 70% on the MOFA-NGO side reported that the teaching aids needed for their work are supplied in the right amount, whilst 5(83.3%) out of the 6 respondents on the MOFA who indicated that they use teaching aids side said the teaching aids needed for their extension delivery activities are not supplied in the right amount.

**Table 4.15: Distribution of supply of teaching aids in right quantity for extension delivery**

	Number of extension agents who gave responses by category			
	MOFA-NGO network		MOFA	
Are the teaching aids supplied in the right quantity for your extension activities?	n	%	N	%
Yes	7	70.0	1	16.7
No	3	30.0	5	83.3
Total	10	100.0	6	100.0

SOURCE: FIELD SURVEY

According to Howell (1989), even in instances where materials are supplied for extension delivery, budgetary constraints may affect the quantity of such materials supplied. On the relevance of the teaching aids to their work, the respondents indicated that the teaching aids help them to teach their farmers practically as well as making their work easy. Moreover, by means of teaching aids, the respondents indicated that their farmers tend to appreciate their extension work.

## 6. Means of transport

On the MOFA-NGO side, 8(80%) extension agents indicated that they have no problem with means of transport as compared to only 1(10%) on the side of MOFA who indicated that he has no problem with means of transport. However, the remaining 9 (90%) on the side of MOFA indicated that they have problems with means of transport. The main identified problems associated with means of transport were lack of maintenance allowance and unavailability of the means itself.

**Table 4.16: Distribution of problems associated with means of transport**

	Number of extension agents who gave responses by category			
	MOFA-NGO network		MOFA	
Do you have problems with means of transport?	n	%	n	%
Yes	2	20.0	9	90.0
No	8	80.0	1	10.0
Total	10	100.0	10	100.0

Yates corrected  $\chi^2 = 7.27$  df = 1 p < 0.05 significant SOURCE: FIELD SURVEY

The availability of means of transport for extension workers is a fundamental indicator of their level of contact with their clients. This is because extension workers interact with a number of farmers and farm families scattered over a wide area.

Analysis using chi-square indicated that there was a statistically significant difference between extension agents working with the MOFA-NGO network and those on the MOFA (alone) side with regard to problems associated with means of transport (p < 0.05).

### 7. Staff Motivation-Operating Expenses

On the MOFA-NGO network side, 9(90%) extension agents reported that their operating expenses were given to them on regular basis, whilst 1(10%) indicated that operating expenses were not forthcoming at the time this study was conducted. However, only 2 (20%) on the MOFA side indicated that the operating expenses were being given to them on regular basis and the remaining 8(80%) indicated that the operating expenses were not forthcoming within the same period of the study.

**Table 4.17: Distribution of availability of operating expenses for extension delivery**

	Number of extension agents who gave responses by category			
	MOFA-NGO network		MOFA	
Are the operating expenses made available to you on regular basis?	n	%	n	%
Yes	9	90.0	2	20.0
No	1	10.0	8	80.0
Total	10	100.0	10	100.0

Yates corrected  $\chi^2 = 7.27$  df = 1 p < 0.05 significant

SOURCE: FIELD SURVEY

Besides materials such as teaching aids, which the extension officer needs for his work, he also needs fuel where motorbikes are used as means of transport to reach clients. Moreover, wear and tear has to be taken care of. All these activities demand the expenditure of funds termed operating expenses by Kaimowitz (1991). In instances where operating expenses are not made available, extension activities virtually grind to halt. It can therefore be inferred that there is a greater possibility for farmers having links with NGOs to also have greater accessibility to information, as their extension agents tend to be more mobile than their counterparts having no such links.

Analysis using chi-square indicated that there was a statistically significant difference between extension agents working with the MOFA-NGO network and those on the MOFA (alone) side with regard to availability of operating expenses for extension delivery ( $p < 0.05$ ).

#### **4.6 GAP 1: Differences between the extension delivery process and strategies of MOFA with and without NGO support**

The extension unit of MOFA has its own extension delivery process and strategies aimed at achieving its objectives of reaching farmers with the requisite information. The extension delivery process and strategies usually involve the combination and coordination of human, material and financial resources available to any extension unit within MOFA. However, financial and material constraints according to Nagel (1997) may produce a strong pressure on staff, thereby hindering smooth execution of fieldwork.

Gap 1 hypothesises that MOFA networking with an NGO is likely to ameliorate the constraints thereby easing the pressure on staff performance. Thus, Gap 1 takes the form of comparing the extension delivery process and strategies of MOFA with and without NGO network.

Sixty-six percent (66%) of the farmers on the MOFA-NGO network were women as compared to 44% women on the MOFA without NGO side. It is generally assumed that most agricultural activities are undertaken by men and therefore they tend to benefit more from extension service providers. However, studies have shown that in most communities, economic activities revolve round the women. They produce not only the food needed by members of their communities but also engage in such activities as soap

making, pottery, adding value to agricultural products and marketing. As a way of increasing the effectiveness of women in executing their tasks, many agencies particularly, NGOs have realised the importance of extending extension services to women.

Ninety two percent (92%) of the respondents from the MOFA-NGO network were non-literate as compared to 90% on the side of MOFA without NGO network. Assistance to rural folks all over the world has largely been devoid of any conscious efforts to understand the so-called non-literate and to target them in particular for any development assistance. It is in the light of this marginalisation of the non-literate that most NGO activities are geared towards such people with the hope of meeting some, if not all of their needs.

On the issue of methods of extension delivery, 100% of respondents on the MOFA-NGO network indicated that their extension agents use a combination of individual and group methods to reach them (respondents) with information as compared to 18% on the MOFA side who indicated similarly. The use of a combination of different methods of extension delivery, according to Laird (1972) enables the extension agent to harness the advantages of the different methods. In this vein, it is assumed that much coverage in terms of reaching farmers with the requisite information can be achieved.

Seventy-six percent (76%) of MOFA-NGO network farmers indicated their extension agents come to them with information as compared to 50% on the side of the non-NGO assisted farmers.

Hundred percent (100%) of MOFA-NGO network farmers indicated that their extension agents show concern for their (farmers) activities whilst 50% of those without NGO assistance indicated similarly.

Fifty-two percent (52%) of the NGO assisted farmers, that is, farmers on the MOFA-NGO network indicated their extension agents organise field trips for them as compared to 32% of those farmers without any NGO assistance who also indicated that their extension agents organise field trips for them.

Hundred percent (100%) of respondents on the MOFA-NGO network indicated that their extension agents mount demonstrations for them in contrast to 70% of the respondents on the MOFA alone side. Moreover, 98% of the MOFA-NGO farmers indicated that materials for demonstrations are supplied by the MOFA-NGO network whilst 2.9% of MOFA alone farmers indicated that materials for demonstrations are supplied by MOFA.

Hundred percent (100%) of farmers with access to NGO reported that they belong to farmer-groups. This is in contrast to 18% of the respondents having no access to and NGO who also indicated that belong to farmer-groups.

Hundred percent (100%) of respondents on the MOFA-NGO network reported that their extension agents involve them in generating information in order to solve an identified problem as compared to 68% of the non-NGO assisted respondents who indicated similarly. The principle of democratic operation, according to Wilson and Brunner (1945) demands extension agents recognise the input of their clients. This is because local people tend to know more about things in their environment, more about the reasons for some problems than any worker from the outside. Moreover, local knowledge sought after and

received, not only facilitates the total extension programmes, it also furnishes important research agenda, the results of which can be fed back through extension to the local people to further improve their agricultural activities (Wilson and Brunner, 1945).

On the MOFA-NGO network side, 40% of the extension agents indicated that their most recent training was about a month ago from the period when this study was carried out. This is in contrast to 30% on the MOFA alone side who reported that their most recent training was about a year ago from the period when the study was undertaken.

The observed trend of reporting on extension activities showed that 100% of extension agents on the MOFA-NGO network reported on their activities on fortnightly basis, whilst 100% of extension agents on the MOFA alone side indicated that they report on their extension activities on monthly basis. The effectiveness of reporting on extension activities lies in the frequency with which these reports are made. This is because the success of any extension programme depends very much on addressing recognised issues contained in reports. The earlier these recognised issues, which may be affecting the extension agent or his clients, are solved, the better. It is therefore assumed that once these reports are made within the shortest possible time, prompt action may then be taken.

On the issue of teaching aids for extension delivery, 100% of the extension agents on the MOFA-NGO network indicated that such aids are given to them for their extension work. This is in contrast to 60% respondents on the MOFA side who indicated similarly. Moreover, 100% of the extension agents on the MOFA-NGO network indicated that the teaching aids are supplied on time, whilst 100% on the side of MOFA indicated that the supply of teaching aids for their work is not timely.

Furthermore, 70% of extension agents on the MOFA-NGO network reported that the teaching aids are supplied in the right amount as compared to 16.7% on the MOFA side who indicated similarly.

On the MOFA-NGO side, 80% of extension agents indicated they have no problem with means of transport as compared to 10% on the side of MOFA who indicated they have no problem with means of transport.

With respect to the payment of operating expenses to enable extension agents execute their field duties, 90% of the extension agents on the MOFA-NGO network reported that their operating expenses were given to them on regular basis. This is in contrast to 20% on the MOFA side who indicated that the operating expenses were given to them on regular basis.

Considering the above categories under which the comparisons were made between MOFA-NGO network and MOFA without NGO network, it can be inferred that in quantitative terms, Gap 1 is 100% skewed in favour of the MOFA-NGO network. Hence, it can be concluded that the extension delivery process and strategies of MOFA may be influenced when networking with an NGO.

Table 4.18 gives a summary of the chi-square tests of GAP 1.

**Table 4.18: Chi-square test summary of GAP 1**

COMPARISON PARAMETERS	MOFA-NGO NETWORK/MOFA ALONE	REMARKS
Concern for farmers' activities	$\chi^2=33.333$ df = 1 p<0.05	Significant*
Field trips organised for farmers	Yates corrected $\chi^2=3.33$ df =1 p=0.0682	Not significant
Field demonstrations organised for farmers	Yates corrected $\chi^2=15.37$ df=1 p<0.001	Significant*
Problems associated with means of transport	Yates corrected $\chi^2=7.27$ df = 1 p<0.05	Significant*
Regular payment of operating expenses	Yates corrected $\chi^2=7.27$ df = 1 p<0.05	Significant*

\*As a way of ensuring effective extension delivery, attention must be given to concern for farmers' activities as farmers have been observed to be more co-operative with extension officers who show concern for their (farmers) activities. Moreover, field demonstrations, which give practical meaning to extension messages, should be seen as an important part of extension delivery. Not only that but also, provision of effective means of transport for extension workers and regular payment of their operating expenses should be given the needed attention to ensure effective extension delivery.

## CHAPTER FIVE

### FARMERS' ACCESSIBILITY TO INFORMATION

#### 5.0 INTRODUCTION

The creation of an extension system with an enabling environment necessary to make information accessible to its clients underscores NGOs' participation in extension delivery activities. This chapter therefore seeks to answer the second research question- Does the participation of NGOs in extension delivery influence farmers' accessibility to information?

Between the enabling environment and farmers' accessibility to information are the factors underlining accessibility. In answering the research question, results obtained from the following sub-questions underlining the factors of accessibility were analysed:

#### Sub-questions

- ❖ Does the MOFA-NGO network make information more readily available to farmers?
- ❖ Does the MOFA-NGO network enhance farmers understanding of information received?
- ❖ Do farmers see information from MOFA-NGO network more useful?
- ❖ Is information from MOFA-NGO network readily accepted by farmers?
- ❖ Is information from MOFA-NGO network timely for farmers' activities?

#### 5.1. AVAILABILITY OF INFORMATION TO FARMERS

Fifteen 15 (30.0%) of the respondents having access to NGOs indicated that their extension agents **always** make information available to them when they are in need of it. Thirty-five 35 (70.0%) indicated their extension agents **sometimes** make information

available to them. However, of the respondents without access to NGOs, 8(16.0%) of them indicated that their extension agents **always** make information available to them and 42(84.0%) indicated that their extension agents **sometimes** make information available to them.

**Table 5.1: Distribution of availability of information to farmers**

Frequency of availability of information	NGO assisted farmers		Non-NGO assisted farmers	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Always	15	30.0	8	16.0
Sometimes	35	70.0	42	84.0
Total	50	100.0	50	100.0

Yates corrected  $\chi^2 = 2.03$   $df = 1$   $p = 0.1539$  not significant SOURCE: FIELD SURVEY

Farmers are in constant need of help to solve their numerous agricultural problems. This help may come in the form of information on new innovations and technically better inputs. The availability of technological innovations adapted to the needs of farmers in the opinion of Anthony et al (1979) underlines the historical establishment of such institutions concerned with the development of the needed innovations. The fact, thus, remains that the availability of agricultural information to farmers to enable them improve upon their production levels is pivotal to any agricultural development programme as well as ensuring the continual existence of extension delivery organisations which are suppose to make the information avail to farmers (Rivera, 1991).

However, analysis using chi-square indicated no statistically significant difference between farmers having access to NGO assistance and those without such assistance with regard to availability of information to farmers ( $p > 0.05$ )

## 5.2. UNDERSTANDING OF INFORMATION RECEIVED BY FARMERS

The farmers were asked to rate their understanding on the following scale:

i. Always understood and

ii. Sometimes understood

On the NGO-assisted side, 27(54.0%) of the respondents indicated that they **always understood** the information and 23(46.0%) indicated that they **sometimes understood** the information communicated to them. This is in contrast to the non-NGO assisted farmers of which 17 (34.0%) indicated they **always understood** and 33(66.0%) indicated they **sometimes understood**.

**Table 5.2: Distribution of respondents' regularity of understanding of information made available to them**

Frequency of information	NGO assisted farmers		Non-NGO assisted farmers	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Always understood	27	54.0	17	34.0
Sometimes understood	23	46.0	33	66.0
Total	50	100.0	50	100.0

Yates corrected  $\chi^2 = 3.39$  df=1 p=0.0698 not significant SOURCE: FIELD SURVEY

Understanding of information communicated to farmers is an important prerequisite for them to take appropriate decisions about innovations. Moreover, the understanding gained puts farmers in a better position to apply the knowledge to solve future problems.

Chi-square analysis indicated that there was no statistically significant difference between farmers having access to NGO assistance and those without such assistance with regard to regularity of understanding of information made available to them ( $p>0.05$ ).

### 5.3. USEFULNESS/ACCEPTANCE OF INFORMATION TO FARMERS

Forty-seven 47 respondents representing 94.0% on the NGO side indicated that the information delivered has been useful to them, whilst 3 (6.0%) indicated that the information made available to them has not been useful to their agricultural activities. However, all the 50 (100.0%) on the side of those without NGO assistance indicated that the information made available to them has been useful to their agricultural activities. Chi-square analysis of the results indicated no statistically significant difference between the usefulness of information made available to NGO assisted farmers on one hand and non-NGO assisted farmers on the other ( $p>0.05$ ).

**Table 5.3: Distribution of usefulness of information made available to farmers**

	Number of farmers who gave responses by category			
	NGO assisted farmers		Non-NGO assisted farmers	
Is the information communicated to you useful for your agricultural activities?	n	%	n	%
Yes	47	94.0	50	100.0
No	3	6.0	0	0.0
Total	50	100.0	50	100.0

Fisher's exact  $\chi^2$  df=1 p=0.1212 Not significant

SOURCE: FIELD SURVEY

It can therefore be inferred that in spite of the many shortfalls of the public extension services even without NGOs coming to their aid, their clients still see their information as useful to meet the demands of their (clients') agricultural activities. Studies have shown that farmers weigh the advantages and disadvantages of accepting or refusing information on innovations, which are conveyed to them. The acceptance of such information by farmers according to Blum (1991) depends on how its utilisation would be crucial to the success of their ventures.

#### 5.4. TIMELINESS OF INFORMATION TO FARMERS

Fifty (50), that is, 100% of the farmers having access to NGOs indicated that they receive their information timely enough for their activities. However, on the side of those without NGO assistance, 24(48.0%) indicated they receive their information on time whilst 26 (52.0%) indicated that they do not receive their information on time. Analysis using chi-square indicated that there was a statistically significant difference between farmers having access to NGO assistance and those without such assistance with regards to timely dissemination of information ( $p < 0.05$ ).

**Table 5.4: Distribution of timely dissemination of information to farmers**

	Number of farmers who gave responses by category			
	NGO assisted farmers		Non-NGO assisted farmers	
34. Is the information communicated to you on time for your agricultural activities?	n	%	n	%
Yes	50	100.0	24	48.0
No	0	0.0	26	52.0
Total	50	100.0	50	100.0

Yates corrected  $\chi^2 = 32.48$  df=1  $p < 0.05$  significant SOURCE: FIELD SURVEY

Timeliness of information availability on agricultural activities is very important for their success. This is because agricultural production remains largely tied to the agro-ecology particularly, rainfall. However, the ever-changing nature of the rainfall pattern demands that farmers take decisions in advance of what they want to do in any particular farming season. Information on better agricultural technologies and superior inputs tends to play a crucial role in the farmer's decision-making. Hence, the need for farmers to have timely access to such information.

It can therefore be inferred that NGOs technical information networks and mobility of personnel encourage rapid and timely dissemination of technical information (Wright, 1986).

#### **5.5 GAP 2: Differences in information accessibility from MOFA with and without NGO support**

Gap 2 shows the difference between farmers' accessibility to information from MOFA with and without NGO support. The end product of any extension activity is to make information accessible to farm families so that they can apply scientific knowledge to the day-by-day routine of farming, homemaking and other aspects of rural living (Ensminger and Sanders, 1945).

Accessibility to information, according to the study is underlined by the following factors:

- i. Availability of information from the source to the receiver,
- ii. Understanding of the information received by the receiver,
- iii. Usefulness of the information to the receiver,

- iv. Acceptability of the information to the receiver and
- v. Timeliness of the information to needs of the receiver.

Gap 2 therefore takes the form of making comparisons between farmers' accessibility to information in reference to two scenarios, that is, MOFA with and without NGO network.

Thirty percent (30%) of the respondents having access to an NGO indicated that their extension agents **always** make information available to them as compared to 16% of those without access to an NGO.

Fifty-four percent (54%) of farmers on the MOFA-NGO network indicated that they **always** understood the information communicated to by their extension agents, whilst 17% of the respondents on the MOFA side indicated similarly. Whilst in the midst of new era of scientific development, most farmers of the world, according to Ensminger and Sanders (1945), still farm and live by tradition and in most cases are non-literate. Therefore, their understanding of scientific information, which may lead to their subsequent usage of such information, should be paramount to any extension activity.

Ninety-four percent (94%) of the respondents on the MOFA-NGO side indicated the information communicated to them has been useful to their agricultural activities, whilst 100% on the side of those without NGO assistance indicated similarly.

Hundred percent (100%) of the MOFA-NGO farmers reported that they receive their information on time for their agricultural activities. However, on the side of MOFA without NGO network, 48% indicated that they receive their information on time.

**Table 5.5: Chi-square test summary of GAP 2**

COMPARISON PARAMETERS	MOFA-NGO NETWORK/MOFA ALONE	REMARKS
Availability of information to farmers	Yates corrected $\chi^2=2.03$ df=1 p=0.1539	Not significant
Regularity of understanding information made available to farmers	Yates corrected $\chi^2=3.39$ df=1 p=0.0698	Not significant
Usefulness of information made available to farmers	Fisher's exact $\chi^2$ df=1 p=0.1212	Not significant
Timely dissemination of information to farmers	Yates corrected $\chi^2=32.48$ df=1 p<0.05	Significant*

\*Timely access to agricultural information goes a long way to ensure successful application of such information. This is largely due to the fact that agricultural production in Africa with Ghana being no exception depends to a great extent on rainfall. Therefore, the timely availability of information particularly on weather patterns enables the farmer to take informed decision on what to do within any production season.

## CHAPTER SIX

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 6.0 INTRODUCTION

This non-experimental survey research was conducted with the main aim of determining the effect of participation of NGOs in extension delivery. According to literature, NGOs, which are engaged in extension delivery, do not do so in isolation but in collaboration with existing public operated extension delivery organisations. Thus, the study focused on two main scenarios:

- ❖ When farmers do not have access to NGOs.
- ❖ When farmers have access to NGOs.

#### 6.1 SUMMARY

The study was organised into six main chapters. In the first chapter of the study, the role of information to agricultural production was discussed. Attention was given to the various forms of extension delivery organisations, which are the main actors in the areas of information dissemination to farmers. Moreover, the study delved into the history of extension delivery in Ghana and brought to the fore:

- ❖ Pre-independence extension delivery activities
- ❖ Post-independence extension delivery activities and
- ❖ Recent extension delivery initiatives.

The reasons underlying the participation of NGOs in extension delivery activities were discussed. This chapter also included the problem statement, research questions, objectives of the study and the conceptual framework underlying the study. In the problem statement, the importance of NGOs' networking with the existing government-operated extension delivery organisations particularly in the area of information dissemination was emphasised. In this networking, a 'scientific community' according to Fernandes et al (1991) is developed which primarily aims at rural development. The advantages of this networking to the beneficiary farmers were discussed. Consequently two research questions were asked. These are:

1. Does the extension delivery process and strategies of MOFA differ when networking with an NGO?
2. Does the participation of NGOs in extension delivery influence farmers' access to information from MOFA?

Following these 2 main research questions, sub-questions and the main and specific objectives were developed. Based on the objectives, a conceptual framework, indicating the relationship between the various concepts of the study, was developed.

Chapter two highlighted the methodology employed in the study. This included a discussion of the study area with its basic geographical characteristics and agricultural systems, the study population, the research design and sampling techniques employed in the selection of the study population. In addition, this chapter paid attention to the methods of data collection and the development of data collection instruments.

Chapter Three reviewed the literature and documentary expositions underlying the various concepts employed in the study. In this wise, channels of farmers' access to information, strategies and methods employed in extension delivery were discussed in detail. Constraints affecting extension delivery and NGOs in extension delivery were also discussed in detail. In-depth documentary elaborations by authorities in various fields with reference to these concepts were carefully considered.

Taking cognisance of the objectives and the research questions of the study as well as the conceptual framework and literature review, the analysis of the data obtained from the field centred on:

- ❖ NGO(s) networking with MOFA in the study area,
- ❖ Characteristics of farmers targeted by extension delivery systems,
- ❖ Methods of extension delivery and how farmers obtain information,
- ❖ Strategies of extension delivery,
- ❖ Factors affecting extension delivery and
- ❖ Farmers' accessibility to information.

The resulting analysis and subsequent discussions termed results and discussions formed the basis of chapters four and five. Quantitative analytical methods were employed in the analysis. Cross tabulation of the obtained frequencies was done. To determine whether there was any statistically significant differences between the various categories given out by the cross tabulation, chi-square analysis was employed.

Based on the objective of the study, the results of the study were discussed under the headings- extension delivery process and strategies, and farmers' accessibility to information, which also constituted Chapters Four and Five of the study respectively. This was done in order to answer the research questions.

## **6.2 CONCLUSION**

Responses analysed for farmers on the opposite of the divide, that is, farmers on the MOFA-NGO network and farmers on the MOFA alone side indicated there are differences in the extension delivery process and strategies of MOFA when networking with an NGO in the following areas:

1. Characteristics of target farmers
2. Methods of extension delivery
3. Strategies of extension delivery
4. Farmers accessibility to information

One of the characteristics of the NGO-MOFA network is the participation of farmers in some aspects of information generation. This in the opinion of the farmers helps to develop appropriate solutions to their agricultural problems since their knowledge systems are also harnessed. Exposure to field trips, according to the farmers, offer them the opportunity to learn new technologies.

Another important feature of the NGO-MOFA network is the reported enhancement of farmers' accessibility to information. This was reflected in such areas as availability, understanding and timeliness of information disseminated to farmers.

Responses analysed for AEAs also indicated that there is a significant difference in the extension delivery process of MOFA when in collaboration with an NGO in the following areas:

- ❖ Personal training
- ❖ Reporting on extension delivery activities
- ❖ Availability of materials for extension delivery activities and
- ❖ Availability of means of transport extension delivery activities.

Timely supply of teaching aids and in the right amount by the NGO collaborating with MOFA, in the view of the extension agents, enable them to mount demonstrations for their clients as well as helping them (extension agents) to teach their farmers practically and also making their work easy.

AEAs from MOFA seconded to the NGO operating in the study area indicated that the major problems associated with extension delivery, such as the unavailability of means of transport and materials, tend to be minimal and in some cases absent when in partnership with an NGO. This has been attributed to the resourcefulness of the NGOs, which reflects in their support to such networking with government departments.

### **6.3 RECOMMENDATIONS**

The benefits outlined above from NGO participation in extension delivery activities calls for more collaboration between handicapped government departments and NGOs. In this regard, the following recommendations are being suggested:

### FOR RESEARCH AND EXTENSION

In line with the objectives of extension, which put emphasis on farmer-group formation, it was observed that most of the farmers, especially those without access to NGOs were found not belonging to farmer-groups. It is therefore suggested that much attention should be paid to achieving this objective rather than preaching it without it being practised. There is also the need for proper monitoring mechanisms to ensure that AEAs activities of helping farmers to form groups are effectively monitored.

Furthermore, it is important that farmers' rich sources of information are tapped by involving them in the generation of information to help solve identified problems.

While admitting that this research work is not exhaustive on the effects of NGOs' participation in extension delivery, it is recommended that a more elaborate study be carried out to determine constraints affecting NGOs participation in extension delivery.

### POLICY MAKERS

NGO participation in extension delivery suggests that agricultural and rural development activities could benefit from increased collaboration between government agencies/departments and NGOs. This means that a wide range of collaborative efforts can be achieved between government organisations (GOs) and NGOs in a bid to bring development in agricultural and related activities closer to the rural dwellers. In this regard, the following recommendations are being suggested:

There is the need to determine bottlenecks limiting efforts of NGOs-GOs to collaborate and work towards eliminating such bottlenecks. To this end, inherent bottlenecks

characteristic of both GOs and NGOs in relation to achieving collaborative goals must be identified and analysed. Efforts then must be channelled to limiting these bottlenecks.

Moreover, there is the need for more collaboration between financially handicapped GOs and NGOs as a means of helping make services offered by such GOs more accessible to their clients as well as improving upon the quality of such services.

Furthermore, it is recommended that conditions under which collaborations could achieve desired objectives be created. In other words, formal and informal contacts necessary to build up mutual trust as a precursor of collaboration must not be impeded by bureaucracy.

**LIST OF REFERENCES**

- Adhikarya, R. (1994): *Strategic extension campaign- a participatory-oriented method of agricultural extension*. FAO, Rome, Italy.
- Al-Hassan, R., Canacoo, V. & Srofenyoh, F. (1998): Equity implications of reforms in the financing and delivery of extension services in Ghana. In: Mulhall, A., Warren, K. and Garforth, C. (Eds) *Reforms in the financing and delivery of agricultural extension services; Case studies from Africa, Asia and Latin America*. AERDD working paper 98/3. Reading; AERDD. The University of Reading.
- Amanor, K. & Farrington, J. (1991). Non-governmental organisations in research/extension In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Ameur, C. (1994): *Agricultural Extension – A step beyond the next step*. The World Bank, Washington,DC.
- Anthony, K. R. M., Johnston, B. F., Jones, W. O. & Uchendu, V. C. (1979): *Agricultural changes in tropical Africa*. Cornell University Press, New York.
- Axinn, G. H. (1988): *Guide on alternative extension approaches*. FAO, Rome, Italy.
- Axinn, G. H. & Thorat, S. (1972): *Modernising world agriculture: A comparative study of agricultural extension education systems*. Praeger Publishers, New York.
- Bailey, K. D. (1989): *Methods of social research*. The Free Press, New York.
- Bebbington, A. (1989): Institutional options and multiple sources of agricultural innovation: Evidence from an Ecuadorian case study. (*Agricultural Administration and Extension Network Paper No. 11*). Overseas Development Institute, London.
- Berlo, D.K. (1961): *The process of communication*. Rinehart Press, San Francisco.
- Blum, A. (1991). An improved agricultural knowledge system: The Israeli experience with regional research and development authorities. In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.

- Boone, E. J. (1985): *Developing programmes in adult education*. Prentice-Hall, Inc., New York.
- Bordenave, J. E. D. (1977): *Communication and rural development*. UNESCO.
- Bradfield, D. J. (1966): *Guide to extension training*. Food and Agriculture Organisation, Rome, Italy.
- Campbell, D. A. & Barker, S. C. (1997): Selecting appropriate content and methods in programme delivery. In: Swanson, Bertz and Sofranko (Eds.) *Improving agricultural extension*. FAO, Rome.
- Cernea, M. (1988): Non-governmental organisations and local development (*Discussion Paper No. 40*). World Bank, Washington, DC.
- Cleaver, K. M. (1993): *A strategy to developing agriculture in the Sub-Saharan Africa and a focus for the World Bank*. The World Bank, Washington DC.
- De vaus, D. A. (1990): *Surveys in Social Research*. Academic Division of Unwin, Englewood Cliffs, New Jersey.
- District Planning Coordinating Unit, (1996): Dangme West District Assembly, 5-Year Medium Term Development Plan (1996-2000). *The District Planning Coordinating Unit*.
- Endeley, J. & Tetebo R. (1995): Gender consideration in designing agricultural extension programmes. *Proceedings of the workshop on developing African agriculture: Achieving greater impact from research investments in Addis Ababa, September 26-30, 1995*.
- Ensminger, D. & Sanders, I. T. (1945): What extension is. In: Brunner, E. des., Sanders, I. T. and Ensminger, D. (Eds.) *Farmers of the world- the development of agricultural extension*. Columbia University Press, New York.
- Evans, J. F. & Dahl, D. T. (1984): Organising extension for communications. In: Swanson (Ed.) *Agricultural extension*. FAO, Rome.
- Feldman, S. R. (1996): *Understanding Psychology*. McGraw Hill, New York.
- Fernandes, M. I., Pager, M. & Gamboa, C. I. (1991): Non-governmental organisations and the improvement of peasant agriculture: Methods and organisational aspects. In: Haverkort, van de Kamp and Waters-Bayer. (Eds.) *Joining farmers' experiments*. Intermediate Technology Publications, London.

- Geker, J. K., Korang-Amoako, S., Donkor, F., Tettebo, R., Haile-Mariam, T & Hong, C. (1990): *Proposed Agricultural Extension Strategy under the Medium Term under the Agricultural Development Plan*. Ministry of Food and Agriculture.
- GLSS, 1995. *Ghana Living Standard Survey 3, 1991-1992*.
- Haverkort, B. & de Zeeuw, H. (1991): Development of technologies towards sustainable agriculture: Institutional implications in Amsterdam. In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Howell, J. (1989): Public investment in Africa extension services. In: Roberts (Ed.) *Agricultural extension in Africa*. World Bank, Washington, DC.
- Jiggins, J. (1988): Seminar Proceedings: Part 1, *International Seminar on rural extension policies*. International Center, Washington, DC.
- Jucious, M. J. (1963): *Personnel management*. Richard D. Irwin, Homewood, IL.
- Kaimotwiz, D. (1991): The evolution of links between extension and research in developing countries. In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Kang, J. T. & Song, H. K. (1984): Individual and group extension teaching methods. In: Swanson (Ed.) *Agricultural extension*. FAO, Rome.
- Korang-Amoakoh, S., Donkor, F. & Amoah, K. (1994): Ghana. Strengthening national extension services in Sub-Saharan Africa: *Proceedings of a seminar for extension practitioners*.
- Kotter, J. (1990): *How leadership differs from management*. Free Press, New York.
- Laird, D. H. (1972): *Training methods for skills acquisition*. American Society for the Training and Development, Washington, DC.
- Lancaster, F. W. & Sattar, A. (1984): Information sources to strengthen agricultural extension and training. In: Swanson (Ed.) *Agricultural extension*. FAO, Rome.
- Leagens, J. P. (1961): *Some principles and concepts of extension programme building*. Cornell University, Ithaca, New York.

- LeGouis, M. (1991): Alternative financing of agricultural extension: Recent trends and implications for the future. In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Lerner, D. (1958): *The passing of traditional society*. Free Press Glencoe, Ill.
- Lionberger, H. F. & Chang, H. C. (1981): Development and delivery of scientific farm information: The Taiwan system as an organisational alternative to land grant university. In: Crouch and Chamala (Eds.) *Extension education and rural development, volume 1, International experience in communication and innovation*. John Wiley and Sons, New York.
- Maalouf, W. D., Cantaado, T. E. & Adhikarya, R. (1991): Extension coverage and resource problems: The need for public-private co-operation. In: Rivera, W. M. and Gustafson, D. J. (Eds) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Maunder, A.H. (1972): *Agricultural Extension*. Food Agricultural Organisation of the United Nations, Rome.
- Mcquail, D. & Windahl, S. (1981): *Communication models for the study of mass communication*. Longmann, Inc. New York.
- Ministry of Food and Agriculture (MOFA), (1990): *Medium-term agricultural development strategy*. Ministry of Food and Agriculture. Accra.
- Moris, J. (1991): *Extension alternatives in tropical Africa*. Overseas Development Institute. London.
- Mulhall, A., Warren, K. & Garforth, C. (1998): Reforms in the financing and delivery of agricultural extension services from Africa, Asia and Latin America. *AERDD Working Paper, 98/3*. Reading: AERDD, the University of Reading, UK.
- Mundy, P. & Lloyd-Laney, M. (1992): Indigenous communication. In: *Appropriate technology*. IT Publications, London.
- Nagel, U. J. (1997): Alternative approaches to organising extension. In: Swanson, Bertz and Sofranko (Eds.). *Improving agricultural extension*. FAO, Rome.
- Pickering, M. (1987): An overview of agricultural extension; its linkages with farm research and the farmer-The World Bank experience. *Journal of agricultural systems* 3(1): 4-12.

- Rivera, W. M. (1991): New roles and responsibilities for public sector agricultural extension. In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Rivera, W. M. & Gustafson, D. J. (1991): Sustainable agriculture: a unifying concept for agricultural and a central strategy for extension. In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Sarantakos, S. (1993): *Social research*. Macmillan, London.
- Schram, W. L. (1964): The context of instructional television: *Summary report of research findings, the Denver-Stanford project*: Stanford University Institute for communication research, Stanford, CA.
- Sica, I. (1982): *Communication in extension work in training for agricultural and rural development*. Food Agricultural Organisation of the United Nations, Rome.
- Theodorson, G. A. & Theodorson, A. A. (1969): *A modern dictionary of sociology*. Crowell, New York.
- Van den Ban, A.W. & Hawkins, H. S. (1988): *Agricultural Extension*. Longman Scientific and Technical, New York.
- Vijayaragavan, K. & Singh, Y.P. (1997): Managing human resources within extension. In: Swanson, Bertz and Sofranko (Eds.) *Improving agricultural extension*. FAO, Rome.
- Wete, F. N. (1991): New technology for transferring agricultural information. In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Wilson, M. (1991): Reducing the costs of public extension services: Initiatives in Latin America. In: Rivera, W. M. and Gustafson, D. J. (Eds.) *Agricultural extension: Worldwide institutional evolution and forces for change*. Elsevier, Amsterdam.
- Wilson, M. L. & Brunner, E. deS. (1945): The role of extension in world reconstruction. In: Brunner, E. deS., Sanders, I. T. and Ensminger, D. (Eds.) *Farmers of the world- the development of agricultural extension*. Columbia University Press, New York.
- Wright, P. C. (1986): Water and soil conservation by farmers. In: Ohm and Nagy (Eds.) *Appropriate technologies for farmers in Semi-arid West Africa*. West Lafayette, Purdue University.

**LIST OF APPENDICES****APPENDIX 1****QUESTIONNAIRE TO EXTENSION AGENTS****A. Social Background**

1. Questionnaire No..... 2. Community.....
3. Region..... 4. Sex...
5. Age in years of extension officer.....
6. Language(s) spoken
- 1. English [ ]
  - 2. Akan [ ]
  - 4. Ga [ ]
  - 8. Krobo [ ]
  - 16. Ga-Dagme [ ]
  - 32. Ewe [ ]
  - 64. Others (specify).....
7. Highest education level attained:
- 1. Secondary School [ ]
  - 2. Agric College [ ]
  - 4. Diploma [ ]
  - 8. B.Sc. degree [ ]
  - 16. Masters degree [ ]
  - 32. Others (specify).....
8. Rank or grade of Extension Officer.....

**B. SIZE OF OPERATIONAL AREA**

9. What is the size of your operational area? (Square km.)

MOFA-NGO network	MOFA

10. How many town or villages are you working with in your operational areas?

MOFA-NGO network	MOFA

11. How many farmers are you working with?

MOFA-NGO network	MOFA

12. In general, what percentage of your farmers are you able to cover effectively?

MOFA-NGO network	MOFA

13. What are your reasons for effective coverage?

MOFA-NGO network	MOFA

14. What are reasons for NOT being able to cover all your farmers?

MOFA-NGO network	MOFA

**C. EXTENSION OFFICER AND HIS ORGANISATION/NGO**

- 15. What is the name of the NGO you are working with?.....
- 16. How long have you been working with the NGO? .....
- 17. How long have you been working with your parent organisation?.....
- 18. Do you need to attend in-service training in order to upgrade your skills in extension delivery?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

Why? (MOFA-NGO network).....  
 .....  
 .....

Why? (MOFA).....  
 .....

19. If yes, how frequent should the trainings be?

MOFA-NGO network	MOFA
1. Very often [ ]	1. Very often [ ]
2. Often (once in 2 to 4 months)	2. Often (once in 2 to 4 months)
3. Once in a year	3. Once in a year
4. Others (specify).....	4. Others (specify).....

20. Give reasons for the frequency with which you desire to have training?

MOFA-NGO network	MOFA

21. What was the content of the most recent training you had?

MOFA-NGO network	MOFA

22. What are your comments on the training provided?

MOFA-NGO network	MOFA

23. When was the most recent training?

MOFA-NGO network	MOFA

24. Are your in-service trainings adequate to enable you discharge your duties effectively?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

Why? (MOFA-NGO network).....  
 .....  
 .....

Why? (MOFA).....  
 .....  
 .....

25. Were you given induction training when first employed?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

26. Were you given induction training when first employed?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

27. If Yes what were the contents of the induction training?

MOFA-NGO network	MOFA

28. If NO, do you think it would have been necessary to have had such training?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

Why? (MOFA-NGO network).....  
 .....  
 .....

Why? (MOFA).....  
 .....  
 .....

29. How do you plan your extension delivery activities?

MOFA-NGO network	MOFA

30. How often does your organisational/NGO head meet your farmers?

MOFA-NGO network	MOFA
1. Weekly [ ]	1. Weekly [ ]
2. Fortnightly [ ]	2. Fortnightly [ ]
3. Monthly [ ]	3. Monthly [ ]
4. Others (specify)	4. Others (specify)

31. What do you identify as problem(s) in your working relationship with your organisation/NGO?

MOFA-NGO network	MOFA

32. What makes you continue to work with your organisation/NGO?

MOFA-NGO network	MOFA

**D. AVAILABILITY OF LEARNING MATERIALS AND TEACHING AIDS TO EXTENSION OFFICER**

33. Does the NGO/organisation provide you with any materials for extension delivery activities?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

34. If your answer to question 32 is YES, what are the materials you are provided with?

MOFA-NGO network	MOFA

35. If your answer to question 32 is NO, how does that affect your work?

MOFA-NGO network	MOFA

36. Do you make use of teaching aids for your extension delivery activities?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

37. If YES, who supplies them for your use?

MOFA-NGO network	MOFA

38. Please name any teaching aids you are provided with?

MOFA-NGO network	MOFA

39. Please comment on the how relevant these teaching aids are to your work

MOFA-NGO network	MOFA

40. Are the teaching aids always in the right amount to do your work effectively?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

41. Are the teaching aids always provided at the right time to enable you do work effectively?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

42. What problems do encounter in the use of teaching aids?

MOFA-NGO network	MOFA

43. Do you mount demonstrations for your farmers?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

44. If YES, who provides the materials for the demonstrations?

MOFA-NGO network	MOFA

45. Where do you site such demonstrations?

MOFA-NGO network	MOFA

**E. Extension Officer-Farmer Interaction**

46. How often do you meet your farmers? (Please, tick to indicate your answer)

**MOFA-NGO network**

FREQUENCY	INDIVIDUALLY ONLY	GROUPS ONLY	INDIVIDU ALLY AND GROUPS
Weekly			
Fortnightly			
Monthly			
Others (specify).....			

**MOFA**

FREQUENCY	INDIVIDUALLY ONLY	GROUPS ONLY	INDIVIDU ALLY AND GROUPS
Weekly			
Fortnightly			
Monthly			
Others (specify).....			

47. Are the meeting dates indicated above?

a. Fixed with the consent of the farmers?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

b. Known in advance to farmers?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

48. What often goes on during such meetings? (please state it in brief)

MOFA-NGO network	MOFA

49. What were your most recent planned activities?

MOFA-NGO network	MOFA

50. Which of these activities were you not able to fully implement with your clients?

MOFA-NGO network	MOFA

51. Why were you not able to implement the above given activities?

MOFA-NGO network	MOFA

52. What is the frequency of reporting on your extension delivery activities?

MOFA-NGO network	MOFA

53. What is the procedure for reporting on your extension delivery activities?

MOFA-NGO network	MOFA

54. What role does reporting play in your extension delivery activities?

MOFA-NGO network	MOFA

55. How do your farmers consider the information delivered to them?

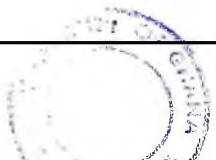
MOFA-NGO network	MOFA
1. Relevant	1. Relevant
2. Irrelevant	2. Irrelevant

3. An imposition	3. An imposition
4. Difficult to practise	4. Difficult to practise
5. Others (specify)	5. Others (specify)

56. Do you have problems with means of transport as far as visiting your clients is concerned?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

57. If your answer to question 61 is YES, how do solve this problem?

MOFA-NGO network	MOFA
	

58. How much money is paid to you as transport and travelling allowance?

MOFA-NGO network	MOFA

59. Are the operating expenses made available to you on regular basis?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

60. Which of the following do you prefer?

MOFA-NGO network	MOFA
1. Plan extension programmes that address farmers' problems with farmers' involvement [ ]	1. Plan extension programmes that address farmers' problems with farmers' involvement [ ]
2. Plan extension programmes for the farmers [ ]	2. Plan extension programmes for the farmers [ ]

Why? (MOFA-NGO network).....

.....  
 .....

Why? (MOFA).....

.....  
 .....

61. Use the response scale below to answer the questions A to C

**MOFA-NGO network**

1. Very convenient    2. Convenient    3. Not convenient

How convenient are the under listed to your extension work?

A. Visiting farmers in their homes and/or farms on individual basis [ ]

B. Organizing farmers in groups for extension delivery activities [ ]

C. Organising extension delivery activities for farmers using mass methods like posters etc. [ ]

**MOFA**

1. Very convenient    2. Convenient    3. Not convenient

How convenient are the under listed to your extension work?

- A. Visiting farmers in their homes and/or farms on individual basis [   ]
- B. Organizing farmers in groups for extension delivery activities [   ]
- C. Organising extension delivery activities for farmers using mass methods like posters etc. [   ]

62. What are your sources of your information for clients?

MOFA-NGO network	MOFA
1. Subject Matter Specialists.....	1. Subject Matter Specialists.....
2. Books.....	2. Books.....
3. Fellow workers.....	3. Fellow workers.....
4. Clients.....	4. Clients.....
5. Others (specify).....	5. Others (specify).....

63. How reliable are your sources of information?

MOFA-NGO network	MOFA
1. Always reliable	1. Always reliable
2. Sometimes reliable	2. Sometimes reliable
3. Not reliable	3. Not reliable

64. Do you organise field trips for your farmers?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

65. If YES, on the average, how far do you on such trips? (Km.)

MOFA-NGO network	MOFA

66. Who pays for such trips?

MOFA-NGO network	MOFA

**MOFA-NGO network**

67. Use the scale below to describe your clients’ attitude towards the use of the methods of extension delivery.

1. Very Satisfactory    2. Satisfactory    3. Not satisfactory

A. Individual methods.....

B. Group methods.....

C. Mass methods.....

**MOFA**

68. Use the scale below to describe your clients’ attitude towards the use of the methods of extension delivery.

1. Very Satisfactory    2. Satisfactory    3. Not satisfactory

A. Individual methods.....

B. Group methods.....

C. Mass methods.....

69. Do you always have solutions to the problems of your clients?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

Why? (MOFA-NGO network).....

.....

Why? (MOFA).....

.....

70. What do you identify as problem(s) in your working relationship with your clients?

MOFA-NGO network	MOFA

71. Have your farmers refused to adopt any innovation from you?

MOFA-NGO network	MOFA
1. Yes [ ]    2. No [ ]	1. Yes [ ]    2. No [ ]

72. If your answer to 71 is YES, can you explain why they refuse to adopt?

MOFA-NGO network	MOFA

**MOFA-NGO network**

73. Use the following response scale to answer questions a to e.

1. Very relevant      2. Relevant      3. Irrelevant      4. No idea

How relevant are the under listed factors to your extension delivery activities?

- a. Availability of information to address the needs of my farmers
- b. Acceptability of the information by my farmers
- c. Ability of my farmers to understand the information
- d. Relevance/applicability of the information to the needs of my farmers
- e. Timeliness of the information to the needs of my farmers

**MOFA**

74. Use the following response scale to answer questions a to e.

1. Very relevant      2. Relevant      3. Irrelevant      4. No idea

How relevant are the under listed factors to your extension delivery activities?

- a. Availability of information to address the needs of my farmers .....
- b. Acceptability of the information by my farmers .....
- c. Ability of my farmers to understand the information.....
- d. Relevance/applicability of the information to the needs of my farmers .....
- e. Timeliness of the information to the needs of my farmers.....

**APPENDIX II****QUESTIONNAIRE TO FARMERS****A. Social Background**

1. Questionnaire No..... 2. Town/village.....
3. Sex...
4. Age in years of farmer.....
5. Language(s) spoken
- 1. English [ ]
  - 2. Akan [ ]
  - 4. Ga [ ]
  - 8. Krobo [ ]
  - 16. Ga-Dangme [ ]
  - 32. Ewe [ ]
  - 64. Others (specify).....
6. Highest education level attained:
- 1. Secondary School [ ]
  - 2. Agric College [ ]
  - 4. Diploma [ ]
  - 8. B.Sc. degree [ ]
  - 16. Masters degree [ ]
  - 32. Others (specify).....

**B. Identification of Extension Delivery Organisations**

7. How long have you been in contact with the extension officer? .....
8. What is the name of his/her organisation? .....
9. Is there any organisation assisting your activities? 1. Yes [ ] 2. No [ ]

10. If your answer to question 9 is what is the name of the organisation?.....

**C. Participation of NGOs in extension delivery**

11. How do you get access to technical information for your agricultural activities?

1. Extension Officer comes to me with information [ ]

2. I go to Extension Officer for information[ ]

3. Others (specify).....

12. Which way of getting access to information is more convenient to you?

1. Extension Officer coming to you with information [ ]

2. You going to the Extension Officer for information [ ]

3. Others (specify).....

13. What is the reason for your preference in QUESTION 12?

.....

14. Does the extension officer take you on field trips to other farmers to see and learn from them? 1. Yes [ ] 2. No [ ]

15. What are the benefits of such trips to you? .....

.....

16. Indicate the type of teaching aids he uses to deliver information to you?

1.....

2.....

3.....

4.....

17. Does he/she mount demonstration for you when he is teaching you a new farming technique?

1. Yes [ ] 2. No [ ]

18. What requirement must a farmer meet before demonstrations are conducted on his/her field?.....

.....

19. Who supplies the materials for the demonstrations? .....

20. Who pays for the materials for the demonstrations? .....

21. Do you belong to any farmer group? 1. Yes [ ] 2. No [ ]

22. If your answer to question 21 is YES, what is the membership strength of your group?

.....

23. Does the extension officer assist your group to acquire farm inputs when it becomes necessary? 1. Yes [ ] 2. No [ ]

24. How often does your group meet the extension officer?

1. Never [ ]

2. Weekly [ ]

3. Fortnightly [ ]

4. Monthly [ ]

5. Others (specify) .....

**D. Accessibility to information, Type of information received, purpose information served and effectiveness of information**

25. Indicate the type of innovation(s) received from the extension officer, the purpose the innovation served and its usefulness.

TYPE OF INFORMATION	PURPOSE INFORMATION SERVED	USEFULNESS OF INFORMATION

26. Give reasons why innovations in question 25 were used:

INNOVATIONS	REASONS WHY USED

27. Give reasons why innovations in question 25 were NOT used:

INNOVATIOS	REASONS WHY THEY WERE USED

28. Does the extension officer

1. Always [ ]

2. Sometimes [ ]

3. Never [ ] have information for your agricultural problems?

29. How would rate your understanding of the information delivered to you?

1. Always understood [ ]

2. Sometimes understood [ ]

3. Never understood [ ]

30. Give reasons for your answer in question 29.....

.....

31. Do you ask the extension officer for clarification when you do not understand his/her information? 1. Yes [ ] 2. No [ ]

32. What is his/her reaction when you ask for clarification?

.....

.....

33. If your answer to question to 32 is NO, why do you not ask for clarification when do not understand?.....  
.....

34. Is the information communicated to you on time for your agricultural activities?

1. Yes [ ] 2. No [ ]

Why? .....

35. Are you convinced that the information received from the extension officer is capable of solving your problems? 1. Yes [ ] 2. No [ ]

36. Give your reasons for your answer in question 35.

.....  
.....

37. List your major agricultural problems

1.....

2.....

3.....

38. Which of these problems above were identified by you?

1.....

2.....

3.....

39. Which of the problems in question 37 were identified by the extension officer?

1.....

2.....

3.....

40. Which of the problems in question 37 were you helped by the extension officer to identify?

1.....

2.....

3.....

41. Which of these ways of identifying your problems is convenient to you?

.....  
.....

42. Give reasons for your answer in question 40.....

.....

43. By what method does the extension officer make information available to you?

.....  
.....

44. Does the extension officer involve you in getting information for your agricultural activities? (Example: sharing of opinions/ideas or getting involved in demonstrations)

1. Yes [ ] 2. No [ ]

45. If your answer to question 44 was YES, would you say your involvement results in getting solutions to your agricultural problems? 1. Yes [ ] 2. No [ ]

Why.....  
.....

46. If your answer to question 44 was NO, would you want to be involved?

1. Yes [ ] 2. No [ ]

Why.....  
.....

47. If your response to question 44 is YES, does this leave you in a better position to solve similar problems in the future? 1. Yes [ ] 2. No [ ]

48. Who initiates contacts between you and the extension officer? .....

49. What is the frequency of such contacts?.....

50. What are the outcomes of such contacts? .....

.....

Why? .....

.....

51. Does the extension officer show concern for the problem you encounter with your farming activities? 1. Yes [ ] 2. No [ ]

Why? .....

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