

**IMPACT OF DECENTRALISED MINISTRY OF FOOD AND AGRICULTURE ON  
EXTENSION DELIVERY: A CASE STUDY OF TEMA MUNICIPALITY IN THE  
GREATER ACCRA REGION OF GHANA**

**BY**

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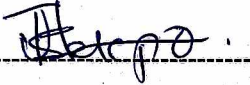
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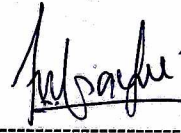
**DECLARATION**

I declare that, this thesis with the exception of the identified quotations, is the product of my own research, and written entirely by me. None of the materials contained herein has been presented either in whole or in part for an award of a degree at any other university.



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## DEDICATION

Dedicated to my family – my mother, my husband, my children Mawuena, Elom and  
Mawutor and Akos my house help.



## ACKNOWLEDGEMENT

I wish to sincerely thank Dr. Felix Y.M Fiadjoe under whose supervision this thesis was prepared. His criticisms, suggestions and words of encouragement carried me through my research work.

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To my family friends and course mates who in diverse ways assisted me and encouraged me when the going was tough, I say a big thank you to them and wish them God's blessings.

To God be the glory.

## ABSTRACT

The need to improve extension delivery to farmers in Ghana has led to several structural changes within the organisation of Ministry of Food and Agriculture. In addition the T&V approach to extension delivery and a Unified Extension System were introduced. However the need to reach farmers with technologies continues to persist because of the important role agriculture plays in the economy. It is in the light of this that this research sought to find out what effects the decentralised administrative structure of the Ministry of Food and Agriculture have made on extension delivery.

The study was conducted in the Tema municipality of the Greater Accra region of Ghana. There is pressure on land in this area making the need for technologies very crucial in order to increase production. The design for the study follows the case study approach. The concentration was on the administrative processes that may be crucial to the success or failure of extension delivery in the decentralised administrative structure of Ministry of Food and Agriculture. The sample for the study was sixty-five respondents. These were made up of farmers who are in contact with extension agents, agricultural extension agents of the Municipal Agricultural Development Unit who work with farmers by taking to them agricultural information as well as new technologies in agriculture and the Municipal Director of Agriculture. Others were the Municipal Chief Executive and members of the development sub-committee of the municipal assembly. Apart from the forty farmers who were selected using purposive sampling, the total population in each target group was used because the numbers involved were small. The data was analysed using univariate and bivariate techniques such as frequencies, percentages and cross tabulation.

The main source of technologies for delivery was found to be from research. However the technology generation process that involved both farmers and extension agents but did not cover all the departments that existed in the Ministry of Food and Agriculture before decentralisation was found to have deteriorated. A smaller number of both farmers and extension agents were involved in technology generation in the decentralised structure. It was found that the provision of T&V training in the decentralised structure became irregular and less useful to agricultural extension agents compared to the old structure. While training in practical field experience was absent in both regimes. The methods used in disseminating information to farmers did not change in the decentralised structure. Field visits were also frequent in both regimes. However there was lack of new technologies for delivery in the decentralised structure and farmers found messages delivered not useful because the messages were not timely. The problem was more with farmers who practise inter-cropping. Thus the T&V extension was found to be unsuitable for multiple cropping systems.

It has been concluded from the study that extension delivery has not improved under the decentralised administrative structure, and it can be attributed to the current structural arrangements. It is thus recommended that steps be taken to improve the existing involvement of farmers and extension agents in the technology generation process, training of extension agents in extension education and rural sociology as part of their in-service training and the T&V extension should be revisited to make it appropriate for meeting the requirements of current farmers.



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## ACRONYMS

AEA	Agricultural Extension Agent
APD	Animal Production Department
CSD	Crops Services Department
DAES	Department of Agricultural Extension Services
MCE	Municipal Chief Executive
MDA	Municipal Director of Agriculture
MOFA	Ministry of Food and Agriculture
MTADP	Medium Term Agricultural Development Programme
PPMED	Policy Planning Monitoring and Evaluation Department
T&V	Training and Visit
URADEP	Upper Regional Agricultural Development Programme
VORADEP	Volta Regional Agricultural Development Project
VSD	Veterinary Services Department
WIAD	Women in Agricultural Development

## **CHAPTER ONE**

### **INTRODUCTION AND BACKGROUND**

#### **1.0. Introduction**

Agriculture is a large and important sector in the Ghanaian economy in terms of its share of GDP and foreign exchange earnings. The sector in 2002 contributed 39.5% to GDP and accounted for 35.5% of foreign exchange (ISSER, 2003). As a result of these major contributions of the agricultural sector to the economy, MOFA (1992, 2001) stated that the growth of the agricultural sector is closely linked to the economic development of the nation. The recognition of the role agriculture plays in the national economy dates back to the colonial era when the government set up the Department of Agriculture to facilitate the transfer of new techniques of farming to farmers. The purpose was to increase production as well as productivity in the sector thereby promoting national economic growth.

#### **1.1. Background**

Agricultural extension is believed to be as old as agriculture. It perhaps started when man moved from the gathering stage and began to cultivate plants and rear animals for food. People informally learnt from each other new ways of growing and rearing their animals. The formalization of agricultural extension as stated by the United States Peace Corps (1982) began with the advent of science and technology. Agricultural extension moved from the informal stage to a more systematic and institutionalized stage. In its' organized form agricultural extension has been an active feature of agricultural development in Ghana. In the initial stages, interest in agricultural extension was with export crops (cocoa, oil palm, rubber). Both government and private organization had this interest but later on food crops and livestock were considered (Republic of Ghana, 1992).

To perform agricultural extension as an organized exchange of information and the purposive transfer of skills and knowledge, the government of Ghana in the colonial era set up the Department of Agriculture and the Department of Animal health for this purpose (Ghana Department of Agriculture, 1957). The aim of government was to achieve increases in agricultural production through the transfer of technologies to farmers. The approach to delivering agricultural extension messages to farmers was the general agricultural extension approach with emphasis on specific crops and animals, for example cocoa, maize, pigs and poultry (Ghana Department of Agriculture, 1957). The structure of the organization set up for delivering extension services conformed to the political and administrative structure of government as it existed in the civil service (Boateng, 1987). In addition other functions were considered for example there was establishment of a research department which did the initial investigations on the technologies to be delivered (Ghana Department of Agriculture, 1957).

At independence a new Ministry of Agriculture was created with four divisions and extension services for cocoa separated from those of other crops. The research division was also separated to become the foundation of the current council for scientific and industrial research. Government adopted a new approach to agricultural extension services delivery, which was based on the group approach to implement government policy on collectivized agriculture aimed at increasing production in the sector. The groups that were set up by government were the State Farms, the Workers Brigade, the United Ghana Farmers' Cooperative Council and the Young Farmers' League (Republic of Ghana, 1992). The change achieved the highest ever in Ghanaian cocoa production in 1965 but it was not the same with the food crop sub-sector (Ninsin and Hansen, 1989). The delivery of extension services included the distribution of inputs as well as technology transfer. The government of the day

was overthrown in 1966 and in its place were various governments that came in after series of coup-de-etats. The governments ruled for relatively short periods but made changes in the agricultural sector directed more at the food crop sub-sector. Among the changes in agricultural extension services was the introduction of a pilot project known as the “focus and concentrate”. This approach to extension can be described as the project approach according to Axinn (1988). The project targeted specific farmers who were assisted by technical officers of the crop production department of the Ministry of Agriculture with inputs such as high yielding seeds, fertilizers and tractor services (Vercrujisse and Boyd, 1970).

Other more prominent and recent project approaches that had agricultural extension components were the Upper Region Agricultural Development Programme (URADEP, 1976-1984) and Volta Region Agricultural Development Project (VORADEP, 1982-1988) initiated under the World Bank assistance. Those on a smaller scale were the Agricultural Services Rehabilitation Project, Global 2000, Grains and Legumes Development project, and the Integrated Agricultural Development Project at Mampong in Ashanti, Ghanaian-German Agricultural Development Project and the Smallholder Rehabilitation and Development Project. These initiatives were designed independently of each other and were not integrated with the extension programmes of the various departments of Ministry of Agriculture.

All these changes had implications for the development and delivery of extension services. The training and visit approach adopted by the URADEP and the VORADEP ensured regular visits by extension staff to farmers but farmers could not adopt extension recommendations as they did not have resources to purchase inputs particularly fertilizers (Republic of Ghana, 1992). In essence the extension recommendation did not fit the conditions of the farmers.



The Agricultural Services Rehabilitation Project that also deployed the training and visit approach to extension experienced weaknesses in areas of inadequate provision of subject matter specialists, irregular training of frontline staff and lack of formal linkages of the programme with input suppliers. The Global 2000 project lacked institutional building and saddled extension staff with non-extension functions like credit administration, input supply and produce marketing not sustainable on a national scale. A more serious problem encountered was that farmers who had the Global 2000 experience were expecting inputs from extension agents before adopting extension recommendations.

Grains and Legumes Development project demonstrated the value of formally linking research and extension services as a means of improving the quality and relevance of research, by combining on-station research with on-farm research and extension. The extension staff of the then Ministry of Agriculture manage verification demonstration plots and the link between the research and extension staff helps to improve programming of research to focus on practical problems of farmers (Republic of Ghana, 1992).

A new agricultural extension strategy was to be adopted by the Ministry of Agriculture. The strategy was part of the Medium Term Agricultural Development Programme in finding solutions to the institutional problems facing agricultural extension in the country (MTADP, 1990). As part of the strategy, the Department of Agricultural Extension Services which was created in 1987 was to consolidate all non-cocoa public agricultural extension services and bring them under one umbrella (Republic of Ghana, 1992). The strategy also embodied the unified extension system and the training and visit approach to extension. To do this

successfully the World Bank's assistance was sought for a National Agricultural Extension Project, which implemented the new extension strategy of the Ministry of Food and Agriculture. There was a need for structural changes in the Ministry of Food and Agriculture to suit the unified extension system and the training and visit approach to extension. According to Goold and Campbell (2002)

A comprehensive redesign of an organization is just too intimidating for most executives. For one it is immensely complicated involving an endless stream of trade-offs and variables. For another, it's divisive frequently disintegrating into personality conflicts and power plays. So when organization design problems arise, manager often focus on the glaring flaws and in the process make the overall structure even more unwieldy and even less strategic (p.117).

As cited in the quotation similar problems arose when Ministry of Food and Agriculture attempted to put up a new structure. In the end a ministerial directive was issued which defined new roles and responsibilities for individuals as well as departments (Ministerial Directive on Unified Agricultural Extension, 1992). This resolved the conflicts but the result was parallel extension systems to that of the Department of Agricultural Extension Services in the Ministry of Food and Agriculture. According to Drucker (1989), a poor organizational structure makes good performance impossible no matter how good the individual managers may be. Thus, the decentralization of Ministry of Food and Agriculture came as a welcome intervention to correct the structural problems that existed with unified extension system. The decentralization of Ministry of Food and Agriculture involved the devolution of extension services to the districts and the collapse of all departments of Ministry of Food and Agriculture in the regions and districts into departments of agriculture known as Regional Agricultural Development Units and District Agricultural Development Units.

## **1.2. Statement of the problem**

In an effort to increase and sustain increases in the agricultural sector in Ghana, governments of the day attempted using structural changes as well as changes in the extension approach sometimes as a means of improving extension services delivery to farmers. The first structural change in Ghana was the creation of the Ministry of Agriculture after independence to carry out a ministry-operated extension services. The ministry-operated extension service was characterised by a hierarchical arrangement that followed the territorial sub-divisions of the general administration in the country. There were national, regional and district departments of agriculture. There was a parallel system of extension in the Ministry of Agriculture since each department had its own extension system. This was characteristic of the general agricultural extension approach described by Axinn (1988).

In 1987 the department of agricultural extension services was established. It came with a national extension organizational structure, a training and visit approach to extension and a duty to co-ordinate all extension activities in the ministry that became known as the unified extension system (MTADP, 1990). Among the reasons for the structural change was to improve the links between research and extension to replace the informal and erratic links that existed (MTADP, 1990).

According to Moris (1991) simplistic technical and organizational solutions to extension problems in Africa rarely pay off. Thus the creation of the Department of Agricultural Extension Services and the T&V approach to extension delivery did not provide the needed solution to extension delivery.

The decentralization of the Ministry of Food and Agriculture was yet another structural change that was introduced in 1997. It was the hope of the Ministry of Food and Agriculture that the decentralized structure would help to overcome the problems of extension delivery that existed. According to Abudu (1998) a centralized structure is a hindrance to the T&V approach to extension because it makes it difficult to take account of different circumstances of farmers. With the decentralized structure, extension services are localized to a district situation and district level departments of Ministry of Food and Agriculture have been incorporated into District Agricultural Development Unit thus making it impossible for parallel extension systems to operate in the Ministry of Food and Agriculture. The question, which then has plagued the extension service in Ghana, has been how to organise extension delivery to effectively meet the needs of farmers.

### **1.3. Research questions**

The main research question for the study is:

What effects have the decentralized administrative structure of the Ministry of Food and Agriculture made on extension delivery?

The specific research questions are:

1. What effect has the decentralized administrative structure of the Ministry of Food and Agriculture made on having technologies that meet farmers' needs and solve their problems?
2. What effect has the decentralized administrative structure of the Ministry of Food and Agriculture made on equipping agricultural extension agents with knowledge and skills that they require for the job?

3. What effect has the decentralized administrative structure of the Ministry of Food and Agriculture had on reaching its farmers with technologies that they need on a timely and regular basis?

#### **1.4. Objectives of the study**

The main objective of the study is to find out the effect of the decentralized administrative structure of the MOFA on extension services delivery. The specific objectives are:

1. To determine how effectively the decentralized administrative structure of MOFA is adequately equipped with the technologies that farmers need.
2. To determine how effectively the decentralized administrative structure of MOFA is equipping agricultural extension agents with knowledge and skills that they require for the job.
3. To determine how effectively the decentralized administrative structure of MOFA is ensuring that its agricultural extension agents reach out to farmers with technologies that they need on a timely and regular basis.

#### **1.5. Conceptual framework**

An organization is defined as any group of people working together to achieve a common purpose or goal that could not be attained by individuals working separately (Hess and Siciliano, 1996). From the definition it means that an organization is held together by a common goal or purpose. To achieve its common goal the organization has got to have some rules that would guide its actions. According to Hess and Siciliano (1996) rules that govern the organisation include policies, procedures and budget.



Policies are guidelines for decisions in an organisation. Thus policies can influence the structure of the organisation because policy decisions determine the type of structure eg centralized or decentralized structure. Procedures are guidelines for how tasks in the organisation are to be performed (Rue and Byars, 1999 and Hess and Siciliano, 1996). Procedures therefore help to define the task of each job position. In essence the number of positions in the structure would depend on its procedures. Budgets are guidelines indicating how an organisation intends to allocate its financial resources. It can influence the structure of the organisation through the amount of money allocated to salaries or wages. The interplay of these rules would therefore determine how the structure of the organisation would be designed.

In designing the organisation structure work would have to be shared. The result is a chain of command or authority structure that will give some individuals the right to supervise the work of others. To make supervision possible individuals as well as groups within the organization would have to be assigned specific roles and responsibilities. Specific roles and responsibilities will make it possible to require action both of individuals and of groups as well as provide the needed supervision. It will also allow for the coordination of activities within and between groups in the organization towards the attainment of organizational objectives and goals.

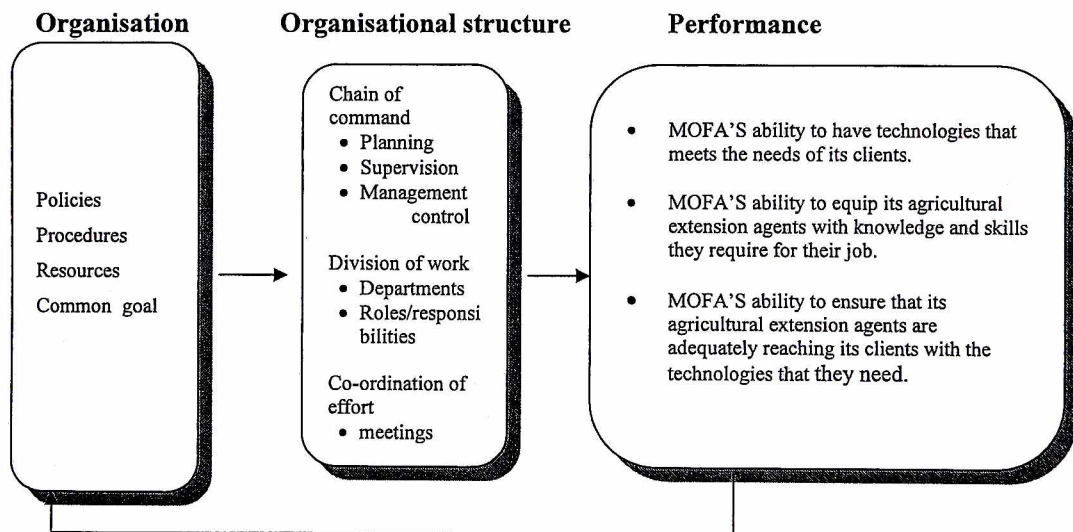
The way in which the work of the organization is shared as described above gives rise to an organizational design or structure. The structure thus created then influences how the organization will perform with respect to achieving its common goal. However performance is not limited to structure. According to Drucker (1989) a good organisation structure does not

by itself produce good performance. An organisation structure may not produce good performance because decisions that have to be made by managers are guided by policies of the organisation eg promotions, rewards and opportunities for staff development. Depending on how favourable these policies are towards motivation of staff to work, their performance can be affected. In addition poorly developed procedures can frustrate the efforts of individuals affecting their performance negatively while a well-developed set of procedures can serve as a roadmap guiding the efforts of individuals to success. If the budget fails to reflect the common goal of the organisation, performance will equally be affected adversely.

### Schematic Representation Of Conceptual Framework

The schematic representation of the conceptual frame for the study is presented below.

Fig.1. Organisational factors that influence extension delivery



### 1.6. Significance of the study

Although statistics indicate the agricultural sector having a growth rate of 4.0 percent and the population growth rate at 2.6 percent, there is still pressure on resources and consumption

items (The Budget Statement, 2002). This suggests that there is still a need to improve performance in the agricultural sector as a major contributor to GDP, to the projected 6% under the accelerated agricultural growth and development strategy (MOFA, 2001). Reaching the Ghanaian farmers with production technologies is one of the sure ways towards increases in production of the agricultural sector.

This study will help indicate how the Ministry of Food and Agriculture is performing in terms of extension services delivery to farmers. It would also throw light on the contribution of the decentralized administrative structure to extension delivery. Furthermore weaknesses in the decentralized administrative structure in relation to extension delivery will be identified. Thus further research questions could be developed from the study.

### **1.7. Definition of key concepts**

Agricultural extension. The concept of agricultural extension has several meanings. For this study agricultural extension means the process of extending scientific knowledge and skills to persons unable to avail themselves of them through formal education.

Extension delivery. For the purpose of this study, the concept of extension delivery is specific to agricultural extension. It refers to the process of doing extension work whereby an extension organization generates and equips its extension agents with technologies that farmers need which the agents impart to farmers in a reciprocal interaction which allows the transfer of technologies from the extension agent to the farmers.

Technology. According to Swanson (1997) technology is the application of knowledge for practical purposes. It is used to improve the human condition, the natural environment or carryout other socio-economic activities.

Organisation. As defined by Hess and Siciliano (1996) an organization is any group of people working together to achieve a common goal or purpose that could not be attained by individuals working separately.

Structure. It is defined as the design of organization. This design makes it possible for individuals in the organization to function together for the purpose of achieving the goals of the organization.

Decentralization. It refers to the transfer of responsibilities and resources for public administration from higher to lower levels within the central administration.

Chain of command. It is the continuous line of authority extending from the person with ultimate authority down through the hierarchy to non-management employees (Wright and Noe, 1996). The chain of command defines lines of communication.

Planning. It encompasses defining the organisations goals and objectives and establishing and overall strategy for achieving the goals (Robbins and Stuart-Kotze, 1990).

Supervision. It is defined as the first level of management in the organisation and is concerned with encouraging the members of a work unit to contribute positively towards accomplishing the organisation's goals and objectives (Rue and Byars, 1999).

Management control. Monitoring to ensure performance is consistent with the organization's plan according to Rue and Byars (1995) has three requirements:

- Establishing performance standards
- Monitoring results and comparing to standards and
- Correcting deviations.

**CHAPTER TWO**  
**STRUCTURES AND APPROACHES IN THE DEVELOPMENT OF**  
**AGRICULTURAL EXTENSION IN GHANA**

**2.0. Introduction**

In the organization and development of extension services in Ghana, both the government and the private sector have been involved. The focus of this thesis however will be on how government organized and developed extension services into what exist today under the Ministry of Food and Agriculture. There are four major changes that are of significance that would be discussed in this chapter. However several other minor changes have occurred in between these major changes and will be mentioned where appropriate.

**2.1. The organization and development of agricultural extension in the colonial era**

The organization of extension services was carried out in the department of Agriculture. The functions of the department of Agriculture were:

- To advise minister and regional administration on all agricultural matters.
- To implement government's agricultural policy within the framework of the goals set for the department. These are :
  - To ensure within the existing system of agriculture, the efficient distribution, processing and maximum production of food crops, consistent with the preservation of the natural resources of the country, in order to raise the level of production and the standard of living.
  - To suppress all major diseases and pests and in particular to control at the earliest possible date the swollen shoot disease of cocoa and rehabilitate the disease devastated

cocoa areas.

- To encourage, with the cooperation of the department of animal health, the adoption of mix farming and improved animal husbandry practices wherever conditions are favourable.
- To stimulate the diversification of suitable primary products whether for export or for local manufacture.
- To cooperate with all other interest in schemes for conservation of our natural resources and the development of plans for optimum usage of under developed and over developed areas.
- To carry out agricultural, ecological, economic and other surveys in order to provide a guide for planning of future production and the introduction of improved techniques wherever appropriate.
- To undertake research and experimentation in all branches of agriculture and animal husbandry with the view of improving local farming practices.
- To provide an agricultural advisory service and those facilities necessary to the development of a health and progressive agricultural industry.
- To maintain and adequately staffed and equipped personnel needed to perform its functions.
- To provide professional advice, factual information and other assistance in connection with agricultural development, corporation projects and other large scale agricultural enterprises.

The structure put in place for performing these functions had a director of agriculture at Accra head office supported by two deputies; one for cocoa and the other for general agriculture. These were in turn supported by three assistant directors of agriculture, an assistant director

research, a chief accountant, an executive secretary, an economist, an editor librarian and a number of other senior officers. This represented the central point that controlled all activities of the department. There were regional structures that reflected the central structure but headed by an assistant director of agriculture. There were no district structures. In their place were eighteen (18) agricultural and seventeen (17) cocoa stations where implementation of policies was carried out. The agricultural and cocoa stations were set up to serve specific areas with similar agricultural climate. The stations performed the under listed functions:

- Investigate local farming problems.
- Test new crops or varieties of crops and new and improved methods of cultivation and management.
- Demonstrated new crops and new methods of farming.
- Investigated pest and disease problems and demonstrate effective control measures.
- Served as a base for extension work in the area.
- Multiplied improved planting materials.
- Served
- As a center to teach young farmers and specialist farmers.

In this organization technology development, storage and dissemination were all under one roof. Coordination was with the regional offices while the activity area was at the agricultural stations where both research and extension work was being carried out. During this era extension was viewed more as technology transfer, whereby improved methods of cultivation and new varieties of crops and livestock were transferred or extended to farmers. The approaches to extension were similar to the commodity approach for cocoa extension and the general agricultural extension approach for other crops.

## **2.2. The organization and development of agricultural extension in the post independence era**

This era covers the period after independence to date. In order to appreciate the organization and development of extension within the era, the discussion will be under three broad headings:

1. The establishment of the Ministry of Agriculture immediately after independence (1957-1986).
2. The creation of the department of Agricultural Extension Services and the Unified Extension System (1987-1998).
3. The decentralization of the Ministry of Food and Agriculture (1997- date)

### **2.2.1. The Establishment Of The Ministry Of Agriculture (1957-1986)**

After independence there were some changes in the civil service as a result of the civil service Act, (1960 CA5). This act set out the structure of the service to consist of ministries, departments and agencies (Ministry of Local Government and Rural Development, 1996). The colonial department of agriculture became the Ministry of Agriculture. The research aspect of the department of Agriculture was taken out and later developed into the present day Council for Scientific and Industrial Research. Cocoa extension was not integrated into the Ministry of Agriculture. Agricultural extension as technology transfer began to suffer because the component that generated the technologies (research unit) for transfer was no longer present to perform this role. The establishment of the ministry also required that it had national, regional and districts departments that conformed to the political boundaries existing at the time. The regional and district departments were to exist as constituent parts of the national departments. The national departments centrally controlled all activities in the regions and districts. This new structure unlike the one in the colonial era had its

implementation structure (the districts) to be defined by political administrative boundaries and not ecological zones.

During this period extension services were performed under the division of general agriculture [Cassadey, Monnet and Dowswell, (1994) citing NAS and CSIR, (1971)]. In 1962 field staff involved in extension under the division of general agriculture were transferred to the United Ghana Farmers Cooperative Council [Cassadey, Monnet and Dowswell, (1994) citing Atsu, (1974)]. The function of extension as technology transfer was similarly affected and changed to the distribution of inputs.

In 1965 agricultural extension services was re-established to perform its function of technology transfer using the general agricultural extension approach. This change did not last because the 1966 coup brought about a change in government and the whole ministry was re-organized. Agricultural extension services became a part of several departments that were created. These were crop production, livestock, veterinary, fisheries, agricultural mechanization and transport, plant protection and quarantine, home economics, seed multiplication and irrigation departments (A. Appiah, personal communication, July 8, 2002). In addition to the parallel extension systems running in the Ministry of Agriculture, government also introduced various agricultural projects and rural development projects.

#### 2.2.1.1. Structural Organization And Functions Of The Departments

The various departments each had a national head, regional officers and district officers with field staff. The national office controlled the activities of the regions and districts. The regional officers coordinated district activities in the region. Implementation of the

departmental programs was by district staff. Program planning and staff training were both centrally controlled. There were no formal links between the departments and research therefore each department had its own arrangements for accessing technologies for delivery to target groups. Each department provided extension services in their specific field of specialization (A. Appiah, Personal communication, July 8, 2002). For example crop production department did extension services in crops while veterinary services department provided extension services in animal health.

The various projects had their own operational structures that were limited to their areas of coverage. There were no formal links between projects and the Ministry of Agriculture (Geker, et al, 1990). There was no coordination in the way extension services was provided. Thus extension services that started as technology transfer and changed to input delivery immediately after independence became a mixture of the two activities (technology transfer and input delivery).

The projects that operated during this period include the Focus and Concentrate Project started in 1968, the Upper Region Agricultural Development Programme (URADEP-1976-1984) and the Volta Region Agricultural Development Project (VORADEP-1982-1988).

#### 2.2.1.2. Focus And Concentrate Project

This was a pilot project lunched in 1968. It was government's effort at a realistic policy for extension services. The project was implemented in areas with a potential for large-scale farming. Staff of the crop production department of the ministry of agriculture in the pilot areas was used for the project activities. The target group was farmers with a potential for

large-scale farming. They were assisted with tractor services, high yielding seeds, fertilizers and technical knowledge of production. Technical officers visited such farmers to assist them and the farmers in turn sort assistance from the technical officers through visits (Vercrujisse & Boyd, 1970).

#### The Upper Region Agricultural Development Programme (1976-1984)

This was an integrated rural development Programme with an agricultural extension component. Thus the project recruited its own staff and seconded the staff of the Ministry of Agriculture in the region to it. The project was under the ministry of Finance and Economic Planning. Therefore it operated as an entity with no formal links with the Ministry of Agriculture. Agricultural extension was handled in the general extension division and the home extension unit. The structural arrangement for extension delivery was as follows:

The regional extension officer was the head of the division and responsible for all extension activities in the region supervised by the project manager. Below him/her were district officers responsible for all district extension activities. They were also responsible for all the other project divisions in the district. Thus they were titled district development officers and not district extension officers. A district was divided into sectors, farmer service centers and zones, which were managed by supervisors, development officers and development assistants respectively. The district staff was responsible for all the extension work in the district. It included organizing farmers, planning, giving extension advice and information

The approach to extension used was the training and visit (T &V). Each development assistant was to select 10-16 contact groups in an operational zone. Each group should consist of 10-14 members and serve as the target for all extension work. These groups were later organized



into farmers' service center committees and only one contact farmer was used. Methods of extension delivery were demonstrations and fortnightly visits to contact farmers. Training of development assistants was once a week. Monthly meetings were scheduled at the district for all extension staff. The purpose was for reviews, planning and evaluation of the extension program.

The Home Extension Unit. The home extension unit ran parallel to the general extension division in carrying out extension activities. Its target group was women and youth while that of general extension were men. In practice however the field level staff went beyond their target groups to assist who ever were in need (Personal experience, 1982). Four program areas guided the unit's activities. These are:

- Nutrition education and diet
- Family food production
- Food processing, preservation and storage
- Management on the farm and in the home

Titles for staff corresponded to what existed in the ministry. The Home Extension Unit benefited from the in-service training facilities of IFCAT. Occasionally there were district levels training sessions. The unit did not use the T & V approach to extension delivery. Extension teaching methods used were home visits and result and method demonstrate

#### Volta Region Agricultural Development Project (1982-1988)

This project was similar to the URADEP but different in some aspects because it was suppose to learn from the weaknesses of URADEP and overcome them. Field extension workers used contact groups while training sessions were convened for them by the district extension

officer and attended by zonal subject matter specialists. At training sessions, messages were based on expected activities of the farmer in the coming fortnight. During training subject matter specialist receive feedback from field extension officers on the needs and problems of farmers and provided solutions were possible. Field extension officers received fortnightly training and worked with 8 contact groups of 10 farmers each. Each group was visited once a week. In addition field extension officers visit farmers' fields regularly to assess adoption of recommendations and give on-the-spot advice and take notes on the problems of the farmers.

#### World Bank Pilot Extension Project (1987-1989)

This project was also known as the Agricultural Sector Rehabilitation Programme (ASRP). It was implemented in four regions and in eight districts. The aim was to try to modify the training and visit approach to suit local conditions (korang-Amoakoh, Donkor & Amoah, 1994). The regional extension officer in each region was the coordinator of the project supported by district extension officers, senior technical officers, technical officers and technical assistants in the project districts. Field staff received regular training on monthly basis. The training depended on pre-selected priority crops and livestock. These crops and livestock were usually selected at the regional level programme planning stage. The extension methods used were result and method demonstrations. The World Bank provided vehicles, motor bikes, bicycles, working gear (wellington boots, haversacks, raincoats, measuring tapes, diaries and pocket calculators) and funds for regular training and payment of transport and travelling allowance of field staff (personal communication, F. Donkor, July 24, 2002).

### Smallholder Rehabilitation and Development Project (SRDP)

This was a rural development project on a small scale located in the Northern Region and covered three districts (Salaga, Savelugu Nanton and Gushiegu Karaga). The approach to extension was the training and visit approach and extension methods used were home and farm visits and method and result demonstrations. Extension activities involved technology transfer and credit administration. The project had its own staff and structure to facilitate its operations (personal experience, 1990).

Other projects worth noting that used existing structures in extension delivery include:

- Sasakawa global 2000 Project (1986 – date). Support the dissemination of existing technologies, provide inputs, credit and attractive producer prices.
- Grain and Legumes Development Project (1979-1996). Helped to establish and strengthen research/ extension linkages.
- Integrated Agricultural Development Project (1986-89). Supported the development of cooperatives by providing a revolving fund for credit.
- Ghanaian-German Agricultural Extension Project (1970-1990). Started as a fertilizer use project but now offer various assistance in extension delivery.
- Smallholder Credit, Input and Marketing Project: provide inputs and inventory credit through the rural banking system.
- Land Conservation and Smallholder Rehabilitation Project: provide inputs, credit and dams (Republic of Ghana, 1992).

### **2.2.2. The Establishment Of The Department Of Agricultural Extension Services**

In 1987 some changes were made in the Ministry of Agriculture that gave birth to the Department of Agricultural Extension Services (F. Donkor, personal communication, July 24, 2002). This is significant and important to the development and organization of agricultural extension in Ghana. First the Department of Agricultural Extension Services was to serve as a point for coordinating all extension activities in the country. Secondly the department was to be given the sole mandate for all extension activities in the country. However the establishment of the department did not change things much in the way extension services were carried out in the Ministry of Food and Agriculture. From findings made by a team of consultants in the proposed Agricultural Extension Strategy under the Medium Term Agricultural Development Plan, the situation on the ground was described as follows:

...there was no coherent extension system, properly assembled technological packages, qualified extension staff and material support. Offices where staff could plan and organize their programs were lacking and inadequate transport restricted the movement of extension workers thus limiting their contact to only few farmers in the most accessible areas.(Geker, et al, 1990).

The department operated extension services in crops and livestock alongside the already existing parallel extension systems and the various project extension activities. According to Geker, et al (1990) there was no standard extension system and each department implemented its programmes independent of the policies and programs of the extension services of the various departments of the Ministry of Agriculture. This necessitated a new form of agricultural extension. As Korang-Amoako, Donkor and Amoah (1994) put it:

The government of Ghana being mindful of several factors (the multicommodity enterprise attitude of farmers, the multidepartmental structure of the Ministry of Food and Agriculture, and the location of research institutes in other organizations) decided to establish a Unified Agricultural Extension system(p. 55).

The primary objective of this system is stated thus: to achieve sustained increases in agricultural production and improve the nutrition and incomes of smallholder households through enhanced adoption of technology, using one frontline agent who has been given multidisciplinary training (Korang-Amoako, Donkor and Amoah, 1994; Republic of Ghana, 1992). The specific objectives of the unified extension system are:

- To improve efficiency in the management and delivery of extension services.
- To improve the relevance of technologies available to farmers and in particular indigenous technologies developed by farmers themselves.
- To increase the involvement of farmers in the identification of areas for further research.
- To organize farmers into groups and associations in order to improve their incomes through better access to agricultural inputs, credit and markets for their produce.
- To strengthen the existing framework for human resource development in the sector and forge linkages between research, teaching and extension services.

#### Organization Of The Unified Extension System

The structure of the unified extension system is described below (organizational chart in appendix 2A).

Within the chain of command the Minister of Food and Agriculture is the highest administrative, financial and technical authority of the ministry, served by three deputy ministers responsible for crops, livestock and fisheries. The chief director in the ministry also serves under the minister as superior to the directors of the technical departments. Administratively, the department of agricultural extension services is directly responsible to the deputy minister responsible for crops as well as the chief director. At the regional level the department of agricultural extension services is the same as the other departments that provide

subject matter specialist. The regional department is directly responsible to the regional director of agriculture both technically and administratively. The regional office relates to the head office on matters related to policy planning, monitoring and evaluation. The department of agricultural extension services is represented in all the districts with field staff

#### Relationship With Other Departments Of The Ministry Of Food And Agriculture

The technical departments that did some form of extension services were to function as subject matter specialist departments. The subject matter departments are the Crop Services Department, Animal Production Department, Women in Agricultural Development Department, Plant Protection and Regulatory Services Department, Fisheries Department, Agricultural Engineering Services Department and Veterinary Services Department.

The relationship that existed between the Department of Agricultural Extension Services and the other departments was in the form of providing subject matter specialist and also providing staff who will backstop the activities of the subject matter specialist. (Korang-Amoako, Donkor & Amoah, 1994). The functions of the remaining staff of the technical departments were not outlined in the ministerial directive on the unified extension system thus they continued to perform their functions as before. Thus the primary objective of the unified extension to use one frontline agent for all extension activities was not practically achieved on the field (Researcher personal experience, 1994-1996). The reality on the ground was several extension agents providing various forms of extension services to farmers.

#### Department Of Agricultural Extension Services Relationship With Research

This is an important area in which the department of agricultural extension services should have forged direct linkage. However the arrangement put in place according to Korang-Amoako, Donkor and Amoah (1994) is that:

Extension is linked to research through two intermediaries, namely, a group of technical departmental staff who are suppose

to backstop another set of technical departmental staff who have been seconded to extension as subject matter specialist (p.57).

In this arrangement the department of agricultural extension services could not control or influence the technology generation process since each department had its own chain of command and reporting relationships. For extension services delivery to be effective the process of technology generation is key. This is because if it is done well, technologies that will be generated will meet the needs of the target group. Problems associated with technologies can also be identified at an earlier stage and corrected before declaring a technology adequate for delivery. From personal experience as a subject matter specialist for women in agricultural development department in the Ho Subject Matter Specialist centre of the Volta region, technologies that were generated were purely crop bias. Most of the time frontline staff training was based on specialized knowledge of subject matter specialist and not technologies from research.

#### Roles And Responsibilities Of Staff

The regional extension officer was to coordinate all activities in the subject matter specialist centres in the region. He/ she was also to provide logistic support to subject matter specialist for adaptive research and monitoring of frontline staff. It was also the responsibility of the regional officer to supervise the regional training officer and ensure that training was carried out on schedule. He/ she also supervised the district officers and compiled the regional report on extension activities.

Subject Matter Specialists served two masters under the unified extension system, their departmental boss and the regional extension officer. This sometimes resulted in conflict of

interest when both departments make demands on the subject matter specialist. The conflict of interest also affected the provision of logistics for adaptive research and monitoring of frontline agents. This is because both departments had separate funds to take care of one individual (the subject matter specialist). In the end it was the Subject Matter Specialist's job or task that suffered.

There were training officers, one in each region. Their responsibility was to ensure that adequate and appropriate training were organized for subject matter specialist and frontline agents. They also make materials available for frontline staff training and serve as secretaries to the research extension linkages committees.

A district is supposed to have a district officer, a supervisor and about fifteen (15) frontline staff. The district officer and the supervisor share supervision of the frontline staff. Frontline staff served to deliver technologies and other agricultural information to farmers. They also together with farmers identify farmer's problems that they take to research through their subject matter specialist.

### Approach To Extension

The approach to extension service delivery was based on a modified training and visit (T&V) amended to Ghana (Republic of Ghana, 1992). First frontline staff form farmers groups that are used for identifying problems of farmers as well as training them in new technologies. Visits to these groups would be on preannounced dates. Demonstrations formed the main method of training farmers and demonstration plots were to be as large as half to one acre (Republic of Ghana, 1992). Subject Matter Specialists would play a key role between

researchers, frontline staff and farmers. Subject Matter Specialists would be involved in the identification of technological problems facing farmers and feed back this information to research scientist. Subject Matter Specialist would participate in on-farm adaptive testing of the relevance and appropriateness of technological solutions to farmers' problems. Subject matter specialists receive bimonthly training from researchers. The country is divided into five agro-ecological zones for subject matter specialist bimonthly training and research extension linkage committee's planning sessions.

Research scientists play an important role in generating and packaging improved technologies. The participation of researchers at diagnosing farmers' problems and conducting research to solve them is ensured through the Research Extension Linkage Committees and the implementation of the adaptive research component of the National Agricultural Research. The Research Extension Linkage Committee planning sessions in which bimonthly training topics for subject matter specialist training were chosen based on priority resulted in a lot of important areas of farmers' needs left out (personal experience as a Subject Matter Specialist, 1994).

### **2.2.3. Decentralization Of The Ministry Of Food And Agriculture**

The decentralization of the MOFA is as a result of a new civil service law PNDCL 327 in support of government policy on its local government reforms and decentralization of government administrative structures. In complying with this directive to change the structure of the MOFA, two key factors were considered. The lessons learnt from URADEP and VORADEP and the lapses in the unified extension system. The new decentralized structure

put in place was therefore to correct these lapses and in essence improve upon the performance of extension services to the Ghanaian farmer.

### The Decentralized Structure Of The Ministry Of Food And Agriculture

The decentralized structure of the MOFA now has directors heading the various line and technical directorates (formally technical departments). The technical directorates will perform a new role of policy formulation, coordination, monitoring and provision of technical support to Regional Agricultural Development Units and District Agricultural Development Units. The line directorates are:

- General administration and finance.
- Human resource development and management.
- Planning, budgeting, coordination, monitoring and evaluation.

The new administrative structure of the MOFA requires that all MOFA departments in a region be collapsed into a Regional Agricultural Development Unit (RADU) headed by a Regional Director of Food and Agriculture of the status of a deputy director. In a similar vein all departments of MOFA in a district should be collapsed into a District Agricultural Development Unit (DADU) headed by a District Director of Agriculture with status of assistant director of agriculture. The formation of Regional Agricultural Development Units and District Agricultural Development Units put management and decision-making at the place of execution. In this arrangement there will not be technical departments existing in the regions and districts. Regional Development Officers (RDOs) from each technical directorate are appointed to assist the Regional Director of Food and Agriculture. All other staff of the professional grade in the region are designated Subject Matter Specialist (SMS). The number of subject matter specialist centers will be increased to handle two to three districts per center.

At the district level, all technical and production officers have been designated Agricultural Extension Agents (AEAs) carrying out extension services delivery of the entire MOFA establishment. They are supervised by District Development Officers who assist the District Director of Food and Agriculture in the ratio of one supervisor to eight extension agents. A detailed organizational chart is shown in Appendix 2B.

### Lines Of Communication

The Regional Directors of Agriculture shall be answerable in the performance of their duties to the regional minister and the Regional Coordinating Director. They will at the same time report technically to the Chief Director at the head office. Hierarchically, they are at par with the Directors of Technical Directorates and there is only a functional relationship between them. Communication between Regional Directors of Agriculture and Directors of Technical Directorates shall be through the Chief Director.

The Regional Development Officer shall report and be responsible to the Regional Director of Agriculture and maintain a technical relationship with the directors of technical directorates at the head office. Their associates will be Subject Matter Specialist, researchers and District Directors of Agriculture. Subject Matter Specialists shall report and be responsible to the Regional Director of Agriculture. Their associates will be District Directors of Agriculture, researchers and subject matter specialist.

The District Director of Agriculture shall report technically to the Regional Director of Agriculture and administratively to the District Chief Executive through the District Coordination Director.



District Development Officers shall report and be responsible to District Directors of Agriculture. Their associates will include Subject Matter Specialist and researchers. Agricultural extension agents will be their immediate subordinates.

Agricultural Extension Agents shall report and be responsible to the District Development Officer. Associates will include farmers, Subject Matter Specialist, NGOs, input and credit support agencies.

### **2.3. Conclusion**

The discussion in this chapter centred round the historical development of agricultural extension in Ghana as it existed and operated under the current Ministry of Food and Agriculture. An attempt was also made at indicating the approaches that were adopted at each period for extension delivery.

## **CHAPTER THREE**

### **LITERATURE REVIEW**

#### **3.0. Introduction**

In this chapter the literature related to the study is reviewed. Emphasis is on the main concepts of the study, which are agricultural extension delivery and organizational structure. To understand agricultural extension delivery, the main concept, agricultural extension is discussed. Other sub-concepts discussed are knowledge generation, knowledge dissemination and training. Organizational structure is discussed through the components chain of command, division of work and co-ordination of effort. The concepts are discussed into detail to assist the researcher in designing instruments for data that can be used to answer the research questions and objectives.

#### **3.1. Agricultural Extension**

Extension as the organised exchange of information and the purposive transfer of skills, is a rather recent phenomenon (Nagel, 1997). Obviously transfer of information and skills has existed since the emergence of permanent agriculture. Today's practice is different in that the process is dominated by organisations. As an organised form of activity, Oakley and Garforth (1985) describe agricultural extension as any activity that works with farmers and their families in order to improve the economic and social conditions of their lives and to develop their ability to take responsibility for their own future development. A similar explanation of agricultural extension given by Bolliger, Reinhard and Zellweger (2001) is, finding ways of making the encounter between the extension worker and the farmer a human experience, through which people learn together to, build a future, created by their own effort and where

no already-made solutions will be presented. Thus the aim of all extension work should be to help farmers and their families find solutions to their problems. Maunder's definition of agricultural extension suggests that it is an educational process. Maunder (1972) defined agricultural extension as:

A service or system which assist farm people through educational procedures in improving farming methods and techniques, increasing production efficiency and incomes, bettering their level of living and lifting the social and educational standards of rural life ( p. 3).

The term extension has several meanings. According to Van Den Ban and Hawkins (1988) one of the common meanings of the term extension is that it involves the conscious use of communication of information to help people form sound opinions and make good decision. Cleaver (1993) defines agricultural extension as the transfer of agricultural techniques and knowledge to farmers.

Looking at the definitions together, one can say that agricultural extension, as an organised activity is a service provided by an agricultural extension organisation. It aims at educating people by transferring to them agricultural techniques and knowledge derived from a collaborative effort between the knowledge generation institution, the extension organisation and the farmers for improving the agricultural enterprises of farmers and thereby bettering their standards of living. For an agricultural extension organisation to be successful, it must be able to generate or contribute to generating the new agricultural techniques and knowledge, which are not already made solutions but those that meet the needs of the farmers concerned. In this regard Boone (1989) states that the educational programme of the extension organisation must create an interface between the world of new knowledge and the present world, physical and mental that the learner can inhabit.

### **3.2. Extension delivery**

Based on the definitions and explanation of agricultural extension given above, what extension delivery stands for in this study is stated as follows:

Agricultural extension delivery comprises all the processes that an extension organisation goes through to come up with the desired technologies that it transfers to farmers. This is slightly different from the definition of extension delivery by Esponou (1996) which states that extension delivery is the process of bringing research results in the form of new information to farmers and supplying research with information on farmers' needs and production constraints. The difference between the definitions is that whereas the definition for the study focuses on delivering desired technologies for solving farmers' problems and meeting their needs the other seems satisfied with delivering available research results to farmers. Sometimes solutions to farmer's problems by researchers do not fit the farmers' situation and therefore render them inapplicable or unsuitable. Therefore generating the right technologies or information is an important aspect of extension delivery.

#### **3.2.1. Knowledge Generation**

Extension is not directly concerned with generating knowledge, this is done in specialized institutions for extension to take the knowledge and make it available to farmers (Oakley and Garforth, 1985). Therefore the information generating institutions should maintain close contact with and be responsive to the users of agricultural technology that is farmers and technology transfer workers (Merrill- Sands, Deborah, Kaimowitz, Sayce & Chater, 1989). Direct links with farmers and users of technology is necessary to ensure that research focuses on their priorities and problems.

### **3.2.2. Knowledge Dissemination**

Knowledge dissemination is the main concern of agricultural extension and it is essentially a communication process. Knowledge dissemination in agricultural extension according to Whale (1989) starts by creating a message about a new technology received, then choosing a channel and sending the message to a receiver. There is feed back from the person who receives the message. This requires that the extension agent is knowledgeable in new technologies as well as in the communication process.

#### Knowledge In New Technologies

According to Swanson (1997) technology is the application of knowledge for practical purposes. It is used to improve the human condition, the natural environment or carryout other socio-economic activities. Technology is therefore the kind of knowledge that farmers will require. Swanson (1997) categorises technology into two categories; material technology and knowledge-based technology.

Material technology. This is where knowledge is embodied into a technological product such as tools, equipment, agro-chemicals, improved plant varieties or hybrids, improved breeds of animals (eg semen from progeny tested sires used for artificial insemination) and vaccines.

Knowledge-based technology. This is considered as technical skills such as improved crop and livestock management practices, integrated pest management, soil and water management practices and technical knowledge on how to use material technology effectively (how to use agrochemical, how to grow new crop varieties etc).

## Knowledge Required By The Agricultural Extension Agent To Be Able To Disseminate Technologies.

An extension agent who is equipped with knowledge in new technologies must be able to communicate these effectively to farmers as well as give feedback to research. This calls for knowledge in communication, rural life and adult education (Oakley and Garforth, 1985). To be knowledgeable for agricultural extension work, the extension agent would require some form of training.

### Training

The job of extension staff calls for technical skills as well as commitment and willingness to educate rural people. This calls for recruiting qualified personnel and to continue to improve and develop them through in-service training to ensure performance (Vijayaragavan & Singh, 1997). According to Cristovao, Koehnen and Portela (1997) extension staff frequently lack the skills to work with rural people in an interactive manner. Their pre-training is often narrow and stresses the acquisition of technical knowledge and abilities. In-service training is required so that extension staff people can learn how to act as helpers and facilitators. The in-service training should emphasise actual field experience and emerging new farming technologies (Vijayaragavan & Singh, 1997). Hayward (1990) lists possible training needs of extension staff to include human relations, problem solving, sensitivity towards disadvantaged groups and the basic concepts of management (cited in Vijayaragavan & Singh, 1997).

### Motivation of extension agents

Extension organisations usually expect high standards of extension staff under conditions of change. The manner in which the organisation directs the staff by motivating them to work for the development of farmers is important. How to keep a well motivated staff could be part of

the organisation's policy. For example creating opportunities for career development through promoting and recruiting from within for mid-level and top level positions (Hess & Siciliano, 1996). Although training has been mentioned, it must be emphasised here that training based on actual field experience gives confidence to extension agents and serve as motivation to work (Van Den Ban & Hawkins, 1988). Furthermore providing rewards and improved working conditions such as providing adequate housing facilities, transport and medical and educational allowances for children of extension field staff motivates them to work (Vijayaragavan & Singh, 1997).

Studies of agricultural extension in Asia and Africa show that the work motivation and morale of extension staff in many countries are very poor. The major causes of poor motivation from the studies include the bureaucratic structure of extension administration, lack of rewards and incentives, poor facilities, promotional avenues and low esteem given to extension (Vijayaragavan & Singh, 1997).

### **3.3. Organizational structure**

Individuals cannot achieve extension delivery as an organised activity; it requires a group of people with a common purpose. An organisation according to Hess and Siciliano (1996) refers to a group of people working together to achieve a common purpose or goal that could not be attained by individuals working separately. Kreitner and Kinicki, (1995) citing Barnard I. Chester (1991) give a similar definition of organisation as a system of consciously coordinated activities or forces of two or more persons. As stated by Mullins (1993:301) "some structure is necessary to make possible the effective performance of key activities of an organisation and to support the efforts of staff". He further explains structure as follows:

Structure is the pattern of relationships among positions in the organisation and among members of the organisation. The purpose of structure is the division of work among members of the organisation, and the co-ordination of their activities so they are directed towards achieving the goals and objectives of the organisation. The structure defines tasks and responsibilities, work roles and relationships, and channels of communication. Structure makes possible the application of the process of management and creates a framework of order and command through which the activities of the organisation can be planned, organised, directed and controlled (p.301).

The structure of any organisation as explained above should be based on activities of the organisation. Every organisation whether it produces goods or services must perform certain basic functions. The need to develop the goods or services, the creation of something of value, the distribution and or marketing of the product or service and finance to provide the resources required. These functions relate to the actual completion of the productive process directed towards specific and definable end results. Other activities of the organization are supportive of these functions. They include personnel function, planning, supervision, quality control and maintenance. These functions must necessarily be performed therefore any organizational design or structure should enhance their performance.

The structure of any organisation according to Hess and Siciliano (1996) quoting Edgar Schein (1980) a prominent organisation theorist, suggest that four essential elements must be present in any organisation for it to function effectively. These are common goals, division of work, co-ordination of effort and authority structure or chain of command. Structure is a design adopted by an organisation for achieving the common goal and purpose for which the organisation exist. The structure embodies the division of work, the chain of command and the co-ordination of effort. Hess and Siciliano (1996:182) make an important point when they

state that “you have to know where you are going (mission and goals) and how you are going to get there (strategy) before you can design a structure to take you there.” In other words a structure is put in place to achieve an organisation’s goal. This means that knowing what the organisation wants and having a process to achieve that goal are key ingredients in designing an appropriate organisation structure.

### **3.3.1. Common Goals**

Every organisation has a vision and purpose for its existence. The vision of an organisation should be shared by all in the organisation. Drucker (1973) suggests that the most effective means for communicating the organisation’s vision is through goals. Hess and Siciliano (1996) define a goal as a statement of specific, desired performance or result outcome with a time frame. Clearly defined goals provide people in an organisation with the focus, direction and understanding they need to perform effectively and contribute to achieving the purpose of the organisation. Thus the common goal of an organisation should influence the way work is divided and co-ordinated in the organisation because goals guide the operations of the organisation.

### **3.3.2. Division of work**

The work of the organisation towards achieving its goals are divided and grouped for maximum productivity (Rue & Byars, 1995 and Robbins & Stuart-kotze, 1990). It is important that all the work required for achieving the goals of the organisation be carefully considered. This is to ensure that essential jobs are not eliminated to create problems in goal attainment at a later date (Hess & Siciliano, 1996).

Work can be divided either vertically or horizontally. Vertical division of work results in the authority structure of the organisation while horizontal division of work is based on the specialities of individuals in the organisation (Rue & Byars, 1995). According to Hess and Siciliano (1996) management has been struggling with how best to divide work for maximum productivity. Thus suggesting that the ability of an organisation to divide its work appropriately has implications for performance.

### **3.3.3. Co-ordination Of Effort**

This means the different parts of an organisation functioning together to achieve a common goal. Wright and Noe (1996) state that co-ordination in an organisation can be influenced by how well designed the organisation is in terms of departmentation, hierarchy, centralisation and decentralisation. Mintzberg (1979) identifies five basic elements of structure, which serve as co-ordinating mechanisms for the work of the organization. They are:

- Mutual adjustment. It involves the ability of specialist in an organisation to adapt to each other.
- Direct supervision. An individual having responsibility for the work of others by the giving of instructions and the monitoring of their performance achieves co-ordination through supervision.
- Standardisation of work processes. Co-ordination is achieved through the design of the work organisation.
- Standardisation of work out. The end result of each work is specified for purposes of co-ordination.
- Standardisation of worker skills. Co-ordination is achieved through standardisation of the knowledge and skills of workers.

A comprehensive network of goals and a steady flow of communication among the various departments of the organisation ensure effective co-ordination of effort that in turn influence performance in the organisation. Without these co-ordination of effort will likewise affect performance negatively.

### **3.3.4. Authority Structure**

Authority is often defined as the right to direct the action of others. An organisation is a collection of individuals with shared goals but not how to achieve them (Hess & Siciliano, 1996). “For an organisation to succeed there must be a chain of command (authority structure) to perform the following functions: define the goals, divide the work and to require co-ordination to the extent that others will accept and follow this direction” (Hess & siciliano, 1996: 183). An organisation without a chain of command may have its goals and plans in place, but without the ability to require action, not much is likely to get accomplished. Authority structure therefore ensures that individuals in an organisation work as required of them. Therefore authority is key in an organisation. Without it, there wouldn’t be order and control to ensure performance.

#### **3.3.4.1. Decentralisation In Organisations**

Decentralisation is the pattern of distributing authority throughout the organisation (Hess and Siciliano 1996). Authority was assumed to be most effective when it rested in the hands of managers at the top of the executives. It was assumed that only people at the highest levels of the organization’s hierarchy had the education and information necessary to exercise authority responsibly. According to Hess and Siciliano (1996)

over the past twenty years, however there has been a variety of effort to move authority out across the organisation and to

distribute it among the managers of the various departments and divisions (p:184).

In large organisations with several departments and divisions distributed in various locations, it was realised that centralised authority was less efficient. Authority to make decisions must be distributed throughout the organisation so that decisions can be made on a timely and focused basis. This helps in terms of achieving goals.

There can be problems associated with decentralisation. The more authority is distributed the more difficult it is to ensure co-ordination and consistency throughout the organisation. Therefore an organisation must determine the degree to which it wants to be decentralised in order to overcome this problem. A research by Peters and Waterman (1982) on American companies revealed that they were more centralised in terms of goals and how to measure performance and more decentralised in terms of defining how these goals should be achieved. They describe this as the loose/ tight principle of decentralisation.

### **3.3.5. Patterns Of Relationships**

Relationships in an organisation are determined by the design principle of organisation structure. In any organisational structure certain formal relationships between individual positions will arise from the defined pattern of responsibilities. These include line relationships, functional relationships, staff relationships and lateral relationships.

#### Line Relationships

Line relationships are based on the chain of command (Mullins, 1993). Authority flows vertically down through the structure. There is a direct relationship between superior and

subordinate with each subordinate responsible to only one person [Fayol, (1949) cited in Fells, (2000)]. Line relationships are associated with functional or departmental division of work and organisational control. Line relationships are important because they ensure that each subordinate is responsible to only one superior. The problem of confusion in the performance of subordinate responsibilities is removed because instructions come from only one person. This arrangement therefore ensures good performance from subordinates. On the other hand when a subordinate is responsible to two or more superiors (absence of unity of command) he/she easily becomes confused by conflicting instructions given by superiors. This leads to poor performance of subordinates.

#### Functional Relationships

Apply to the relationship between people in specialist or advisory position and to the relationship between people in specialist or advisory position and line managers and their subordinates (Mullins, 1993). In some agricultural extension organisations, subject matter specialists are used to train agricultural extension agents. These specialists do not belong to the agricultural extension department and only have a functional relationship with the extension agents (Republic of Ghana, 1992). Effective co-ordination is required in this type of relationship. Functional relationships are necessary for performance because line managers and their subordinates require specialist information and assistance for achieving their goals. Without functional relationships each manager may be forced to provide their own specialist and that will not be good for an organization in terms of efficiency in goal attainment.

#### Lateral Relationships

Lateral relationships exist between individuals in different departments or sections, especially

individuals on the same level. These relationships are necessary to maintain co-ordination and effective organisational performance (Mullins, 1993). Lateral relationships may be specified formally but in practice they depend upon the co-operation of staff and therefore are a kind of informal relationship (Mintzberg, 1979). Lateral relationships can easily be affected by departmental rivalry thus hindering performance. This problem should be looked out for and where there appears to be signs, steps should be taken to control it immediately or else performance will suffer negatively (Goold & Campbell, 2002).

### **3.3.6. Channels Of Communication**

Communication is the foundation of control and co-ordination in an organisation and is important for organisational performance (Rue & Byars, 1995). The type of relationship patterns in an organisation dictates the channels of information flow. In most formal organisation communication channels are vertical and horizontal in direction.

#### Vertical Communication

Vertical communication is rooted in the principle of authority and hierarchy and includes both down-the-line and up-the-line communication (Rue & Byars, 1995). Down-the-line channels of communication are used to communicate job instructions, information about how one task relates to other tasks in the organisation, messages indicating the rules and regulations in the organisation, feedback on performance and messages about the overall organisational goals (Rue & Byars, 1995).

There are certain problems associated with downward communication.

- There is information loss as messages move from top to bottom.

- Information acquisition is perceived differently by people leading to over-estimation about what subordinates already know.
- Information changes in meaning as it moves down the hierarchy.
- Information overload can lead to faltering of information.
- Power grabbing or not sharing messages can also frustrate downward communication.

Up-the-line communication occurs when messages flow from subordinates to superiors. These messages are mainly to ask questions, offer suggestions or provide feedback. Up-the-line communication is important and must be fostered (Rue & Byars, 1995). Some of the reasons to foster up-the-line communication are:

It indicates the receptivity of the environment for downward communication.

- It facilitates acceptance of decision by encouraging subordinate participation in the decision making process.
- It provides feedback on subordinate understanding of downward communication.

It encourages submission of valuable ideas.

In practice sometimes, vertical communication tends to be limited to only down-the-line communication, forgetting that it is characterised by problems that can only be identified and eliminated if up-the-line communication is encouraged. Therefore efforts should always be made to encourage up-the-line communication as well as guide against the problems associated with down-the-line communication in order to promote performance.

### Horizontal Or Lateral Communication

Horizontal communication refers to the exchange of messages between and among people and units at the same level in the organisation hierarchy (Rue & Byars, 1995). Horizontal communication is initiated in order to co-ordinate task, solve problems, share information

and/or resolve conflict. Horizontal communication may falter because of rivalry and specialisation of work (Wright & Noe, 1996). It is important to co-ordinate tasks in an organisation in order to ensure that all the different parts of the organisation are functioning together towards the achievement of organisational goals. Lack of co-ordination may result in the different parts working at cross-purpose with each other to the detriment of achieving goals, which determine organisational performance (Mullins, 1993 and Wright and Noe, 1996).

### **3.3.7. Roles And Responsibilities**

A role is defined by Mullins (1993) as the expected pattern of behaviours associated with members occupying a particular position within the structure of the organisation. It also describes how a person perceives his/her own situation. The role or roles that an individual plays in an organisation is influenced by a combination of both situational and personal factors (Mullins, 1993). Examples of situational factors include requirements of tasks, the style of leadership and position in the communication network and those of personal factors include values, attitudes, motivation ability and personality. There are various forms of role relationships. They are role-set, role in-congruence and role expectations.

#### **Role-Set**

The role-set comprises the range of associations or contacts with which the individual has meaningful interaction in connection with the performance of their roles (Kahn, 1996). In an extension organisation where the research component is located in another institution role-set relationships become very important concerning matters of knowledge generation and organisational performance in general (Merrill-Sands et al, 1989).

## Role In-Congruence

Role in-congruence describes a person in an organisation who is in a high and responsible position and yet is perceived as one in low standing (Mullins, 1993). Role in-congruence can arise from the nature of formal relationships within the structure of the organisation (Mullins, 1993). For example delegating junior staff to instruct senior staff, no clear definition of authority structure and line-staff relationships where instructions have to be passed from one department to another. Care must be taken to ensure that junior staff do not instruct senior staff because of specialisation. Role in-congruence is more likely to result in refusal or overlooking instructions considered as coming from a junior staff resulting in problems and consequently affecting performance in the organisation. Avoiding or minimising role in-congruence is a sure way of enhancing performance.

## Role Expectations

Role expectations are mostly formally prescribed forms of behaviour although some may not be formally prescribed (Mullins, 1993 and Kahn 1996). Role expectations that are formally prescribed take the form of written contract of employment, rules and regulations, standards, policy decisions, job descriptions or directives from superiors (Mullins, 1993). Some formal role expectations may also be derived clearly from the nature of the task. Informal role expectations have to do more with conforming to the group expectations and are often formally not communicated to a person (Kahn, 1996). The individual may observe it from the group or it may be communicated from individuals of the group. Examples of informal role expectations include general conduct, mutual support to members, attitudes towards superiors, means of communication, dress and appearance.

To promote effective performance in an organisation, individuals must be made aware of what is expected of them by the organisation. This will help them have a focus and also serve as a guide towards goal attainment. Without role expectations being prescribed, conflict in the performance of task may arise creating problems thus hindering performance. In a similar vein, although informal role expectations are not formally communicated, it is important that managers are aware of these especially subordinates attitudes towards their superiors. Positive attitudes will contribute to performance, while negative attitudes will hinder performance.

### Problems Associated With Role Expectations

In the performance of expected roles, conflicts may arise resulting in problems. Most of these problems take the form of role incompatibility, role ambiguity, role overload and role underload (Mullins, 1993). When these conflicts arise they tend to create problems which hinder performance. Therefore in the design of organisation structure, role conflict should be anticipated and controlled as much as possible through the design structure (Wright & Noe, 1996).

Role incompatibility. A situation of role incompatibility arises when an individual is confronted with two role expectations that are in conflict with each other (Mullins, 1993 and Kahn, 1996). For example a supervisor who faces opposing expectations from subordinates and from management. This problem is common with people placed between two levels in an organisation structure. Clearly defined standards and good communication in an organisation can help to alleviate this problem and thus promote good performance.

Role ambiguity. Role ambiguity occurs when there is lack of clarity as to the precise requirements of the role and the person is not sure of what to do. This could be a problem with poorly prescribed role expectations or poor communication of the prescribed role expected (Mullins, 1993). When this problem arises role expectations normally fall below expectations leading to poor performance.

Role overload. When a person faces too many separate roles or too great a variety of expectations the situation is described as role overload (Mullins 1993 and Kahn, 1996). This situation reduces efficiency and effectiveness leading to poor performance. Role overload can be overcome with correct design and functional organisational structure.

Role underload. When the prescribed role expectation falls short of a person's own perception of their role the condition is referred to as role underload (Mullins, 1996). In situations like this people feel they are not challenged enough by their jobs and given the opportunity they can perform better. Role underload tends to affect moral of workers and consequently performance (Hess & Siciliano, 1996). Role underload can be overcome if individuals are carefully placed on the job taking into consideration their qualification and capabilities.

### **3.4. Conclusion**

The concepts reviewed in this chapter provide the basis from which the research was to be conducted. Extension delivery has been viewed as a service provided by an organisation designed or structured for the purposes of achieving performance. The literature reviewed on the concepts further explained how an organization structure could either assist or hinder the achievement of organizational goals. An understanding of the two main concepts helped in

designing instruments for data collection needed to address the research questions and the objectives of the study.

## **CHAPTER FOUR**

### **METHODOLOGY**

#### **4.0. Introduction**

This chapter deals with the methodology of the study. It covers the choice of methodology used for the study, the study area, study population, sampling technique and sample size, instrumentation and pre-testing, data gathering, data management and analysis, sources of secondary data and administrative information, challenges encountered and precautions and limitations to the study.

#### **4.1. Choice of methodology**

The design of the study follows the case study approach. The case study approach allows the researcher to concentrate on a specific event or situation for in-depth study (Blaxter, Huges and Tight, 1996). In this case the concentration is on the administrative processes which may be crucial to the success or failure of extension delivery in the decentralised administrative structure of the Ministry of Food and Agriculture. Case study provides a better opportunity to take a closer look at these administrative processes than a large-scale survey (Bell, 1993).

Furthermore the choice of case study was made because it permits the use of a mixture of data collection techniques (Cosley and Lury, 1987). Thus for the purpose of this study a range of data collection techniques were employed to collect both primary and secondary data. These include the administration of structured questionnaires to extension officers and farmers, informal interviews using unstructured interview guides with key informants from the ministry of Food and Agriculture listed in appendix 2, as well as administrative documents

and other published materials from the Ministry of Food and Agriculture also listed in Appendix 1. The informal interviews helped to throw more light on some of the results obtained from the analysis of the questionnaires. Similarly, the administrative documents and other materials reviewed informed and added value to the final outcome of the study. The techniques that were used allowed for triangulation in the validation of the results.

The scale and purpose of the research in addition to the limited resources at the disposal of the researcher made the case study approach the ideal choice.

#### **4.2. The study area**

Tema municipality is an industrial town lying to the east of Accra on the Greenwich meridian. The Atlantic Ocean borders it to the south, to the east by Dangme East District, to the north by Dangme West District and to the west by Accra. Tema municipality has a population of about 500,000 people with a majority in commerce and industry only a third of the population is into farming and fishing (S. E Ashong-Narh, personal communication, July 31, 2002).

The farmers are located more in the northern part while the fishermen are in the southern part. There are also a few crop farmers mainly vegetable farmers in the south. Livestock rearing and poultry keeping is also practised. The problem with farming in Tema municipality is that of land. The town is growing fast and with increases in population, land is being used more for estate development at the expense of farming. Most farms are smallholdings and the farmers practice intensive cultivation.

Most farmers use temporary farmlands (open spaces and lands awaiting estate development) and therefore are not interested in long-term land management practices. Farmers try to get the maximum out of their temporary lands regardless of the consequences on the environment. These conditions suggest that an effective extension service is required to make farming a sustainable activity in Tema. This made the study area a suitable choice.

#### **4.3. Study populations**

The study populations included all agricultural extension staff of the Municipal Agricultural Development Unit (MADU) who worked with farmers, by taking to them agricultural information as well as new technologies for agricultural activities. The population also included the Municipal Director of Agriculture, the Municipal Chief Executive, the Municipal Co-ordinating Director, members of the development sub-committee of the municipal assembly and farmers. These populations were targeted because literature has revealed that a study of a population of this nature or a sample of it would provide answers to the research questions and objectives.

#### **4.4. Sampling technique and sample size**

Purposive sampling technique was used to select two farmers each from twenty operational areas in the municipality. The farmers selected were those regularly visited by the agricultural extension agent and were ready to respond to the questionnaire. This sampling technique was used due to the absence of a list of farmers. With the exceptions of the Municipal Co-ordinating Director who had traveled outside the country and therefore could not be reached and some of the members of the development sub-committee who failed to attend scheduled

interviews, the total population in each target group was used because the numbers involved were small.

Overall, sixty-five respondents from various categories of respondents were interviewed.

The different categories include nineteen agricultural extension agents, one district director of agriculture, one municipal chief executive and the chairman and four members of the development sub-committee of the municipal assembly and forty farmers.

#### **4.5. Instrumentation and pre-testing**

This section describes how the data collection instruments were developed as well as the pre-testing and development of the final instruments for collecting the data.

##### **4.5.1. Developing The Instruments**

The data collection instruments developed for the study were questionnaires for agricultural extension agents and the district director of agriculture, interview checklist for the municipal chief executive and development sub-committee members of the municipal assembly and an interview schedule for the farmers. The issues addressed, information required and sources of information are shown in the Table 4.1. The main concepts of the study were extension delivery and structure. In Table 4.1 the issues that address the concept of extension delivery are

- Technology generation or sourcing,
- Problems and needs of farmers,
- Job related problems of agricultural extension agents and
- Farmer contact

Those that addressed the concept of structure are

- Chain of command
- Division of work and
- Co-ordination of effort

**Table 4.1: Study issues, information required and sources**

Issues	Information required	Sources
Technology generation or sourcing.	<ul style="list-style-type: none"> <li>• Sourcing of technologies</li> <li>• Generation of technologies</li> <li>• Availability of technologies at MOFA.</li> </ul>	Municipal Director of Agriculture (MDA) and agricultural extension agents (AEAs)
Problems and needs of farmers	<ul style="list-style-type: none"> <li>• Farmers need for technologies</li> <li>• Knowledge about farmers</li> <li>• Farmers access to technologies</li> </ul>	AEAs, FARMERS & members of the dev't sub-committee
Job related problems of AEAs	<ul style="list-style-type: none"> <li>• AEAs access to technologies</li> <li>• Contact with farmers</li> <li>• Access to material and equipment for work</li> <li>• Morale of extension staff</li> </ul>	MDA, AEAs & FARMERS
Farmer contact	<ul style="list-style-type: none"> <li>• Awareness / relationship with AEA</li> <li>• Forms and frequency of contact</li> </ul>	MDA, AEAs & FARMERS
Chain of command	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Supervision</li> <li>• Management control</li> </ul>	MDA ,AEAs, farmers & members of the dev't sub-committee
Division of work	<ul style="list-style-type: none"> <li>• Responsibilities of DADU staff</li> </ul>	MDA & AEAs
Co-ordination of effort	<ul style="list-style-type: none"> <li>• Meetings with other departments</li> <li>• Office meetings with staff</li> <li>• Meetings with district assembly</li> </ul>	MDA, Municipal Chief Executive & AEAs

With this background information a draft questionnaire was developed for each category of the respondents. The draft instruments were refined through further reading and consultation with experts in the field and academics in the Department of Agricultural Extension including my supervisors. The nature of the subject is such that more open-ended questions were employed to allow for all possible responses to be provided.

#### **4.5.2. Pre-Testing**

The data collecting instruments except for the interview checklist were pre-tested in the Dangme-West District of the Greater Accra region. Pre-testing was undertaken to ensure reliability and validity. The interview checklist was carefully corrected to make it appropriate. The pre-testing lasted a period of three weeks from the 13<sup>th</sup> – 31<sup>st</sup> May 2002. In all twenty-one people were involved, one district director of agriculture, ten agricultural extension agents and ten farmers.

The researcher met with the district director of agriculture for Dangme-west district to discuss her intention of wanting to pre-test her data collection instruments in the district. The request was accepted and a day arranged for meeting the agricultural extension agents. During the meeting the researcher explained her intention and asked for volunteers to answer the questionnaires. Those who volunteered were taken through the questions after which they were asked to fill the questionnaires. They suggested that they needed more time to properly answer the questions. Thus they were allowed to take the take the questionnaires away and return them after a week. With the farmers interview schedule the researcher asked the agricultural extension agent who was to administer them to study one and seek clarification before going to the farmers. The researcher then went with the agricultural extension agent to

the farmers to pre-test the interview schedule. The researcher did not understand the local dialect but used the opportunity to observe the body language of both interviewer and interviewee for cordiality. Note was also taken of the time spent in administering a questionnaire.

During the pre-testing certain things came up. Among them was that some of the questions for the district director were very revealing. About 75% of the agricultural extension agents returned their questionnaires voluntarily. The rest only returned them after the district director's intervention. Repeated questions, poorly constructed question, omissions and typographical errors also came to light and were noted for correction when developing the final instruments. Those involved in pre-testing the data collection instruments were asked for their comments and suggestions. Some of the suggestions were to clarify some ambiguous questions and to include "sometimes" as part of response options to some questions. All comments, suggestions and observations made during the pre-testing of the instruments, were considered in developing the final data collection instruments.

#### **4.5.3. Developing The Final Questionnaire And Interview Schedule**

The pre-testing revealed that farmers could not adequately respond to questions on issues before decentralisation. Such questions were therefore eliminated from the final interview schedule for farmers. Other observations made and suggestions received from the pre-testing as well as problems arising from the analysis of the data, allowed the researcher, with support from her supervisors to make the necessary corrections on the questionnaire and interview schedule. The final instruments that were used in collecting the data are shown in Appendices 3A-3D.

#### **4.6. Data gathering**

Data gathering is discussed in three parts. These are the selection and training of research assistants, data collection and the administration of the data collection instruments.

##### **4.6.1. Research Assistants**

There was a need to select and train two agricultural extension agents as research assistants. The research assistants were to administer the questionnaires to farmers because of language barrier that made it impossible for the researcher to do it. The research assistants chosen were those fluent in Ga and Dangme the local dialects of the farmers. The research assistants were given a one-day training to make sure that questions were understood and could be translated appropriately. Thus the researcher allowed each question to be read and asked for its translation by both research assistants. From the various translations the most appropriate translation chosen was adopted by all in the administration of the interview guide. This was done to ensure inter-rater reliability.

##### **4.6.2. Data Collection**

Data collection started on June 18<sup>th</sup> and ended on August 2<sup>nd</sup>, 2002. Apart from the sample respondents, other sources of primary data were from some key informants in the Ministry of Food and Agriculture.

##### **4.6.3. Administration Of Data Collection Instruments**

There were three different instruments to be administered to four categories of respondents. Questionnaires to be administered to agricultural extension agents and the district director of

agriculture, interview schedule to farmers and interview checklist to the municipal chief executive and the assembly members in the development sub-committee.

#### 4.6.3.1. Administering The Questionnaires

The questionnaires were administered to agricultural extension agents who did extension work with farmers and the district director of agriculture by the researcher. Earlier on the researcher had met with the director of the District Agricultural Development Unit of Tema municipality to explain her interest in using Tema municipality for her study. It was accepted and further meetings were arranged that helped to prepare the grounds for the administration of the instruments. Administration of the instruments started on June 18<sup>th</sup> and ended on August 2<sup>nd</sup> 2002. The agricultural extension agents were the first category of respondents that the researcher started with. First, the questionnaire was discussed with the agricultural extension agents. From the earlier experience of difficulty in retrieving questionnaires from agricultural extension agents during the pre-testing, the researcher decided that the questionnaires should be completed at a sitting with the respondent. To do this successfully, the agricultural extension agents were divided into groups of four, one group had three members because their number was nineteen. Each group then chose a day in which to meet the researcher to administer the questionnaires. With this arrangement the researcher was able to supervise the filling of questionnaires by providing the needed assistance for properly completed questionnaires. The District Director of Agriculture equally filled the questionnaire in the presence of the researcher.

#### 4.6.3.2. Administering The Interview Schedule

Administering the interview schedule required the use of research assistants as earlier stated.

The research assistants were trained and a common translation of questions ensured before going to administer the interview schedule to the farmers. After collecting the completed instruments at the end of each day, the researcher discussed the recorded responses with the research assistants. In some cases, the research assistants were asked to translate some of the responses into the local dialect and with the help of the other research assistant, the translated vision into English language was confirmed.

#### 4.6.3.3 Administering The Interview Checklist

The interview checklist was administered to the municipal chief executive and the selected members of the municipal assembly. In addition to recording the responses in writing, a tape recorder was used to ensure that all aspects of the responses were captured. The researcher administered the interview checklist.

### **4.7. Data management and analysis**

It covers activities carried out by the researcher such as data summary, data coding, data storage, and data analysis.

#### **4.7.1. Data Summary**

One of the requirements for successfully analysing open-ended questions is to do the data summary, leading to the imposition of structure that will permit coding. The data summary process was started in the field to help reduce the problem of reformulating ambiguous responses long after leaving the field when knowledge of respondents' insight into what was recorded would have faded from memory. In the course of checking answered questionnaires and interview schedules with respondents and research assistants respectively, similar

responses to open-ended questions as well as differences were noted. These differences later formed the basis for grouping and coding the responses of the open-ended questions. By the time the last questionnaire and interview schedule was collected, summary of the responses to open-ended questions was almost ended. Responses from the interview checklist that were on tapes was transcribed and together with the written notes, summarised and coded. This was done after all the data was collected.

#### **4.7.2. Data Coding**

After collecting the data, the coding process that was started on the field was completed. The researcher completed the coding process by cross-checking responses and groupings before assigning codes.

#### **4.7.3. Data Storage And Analysis**

A coding frame was developed after coding. From the coding manual the data was transferred into the computer using the Statistical Package for Social Sciences (SPSS) facility for storage and analysis of the data. After entering the data into the computer, it was cleaned to ensure that the right entries were made. The data was then analysed using univariate and bivariate techniques such as frequencies and percentages and cross-tabulation.

#### **4.8. Challenges encountered in the field**

The challenges encountered in the study were associated with commuting between the operational areas to interview farmers as well as learning and adopting some aspects of the Ga culture necessary for establishing rapport between the researcher and the farmers necessary for the success of the interviews. During the administration of the questionnaires it was

observed that some of the agricultural extension agents and the district director of agriculture were apprehensive with disclosure of information that could present each other as ineffective or inefficient. They were reassured that the research was purely an academic exercise and nobody would be victimised. Amiss the problems and challenges encountered, the researcher learnt something new about the organisation in which she works and also about how to research and it was fun to do the research.

#### **4.9. Sources of secondary data and administrative information**

Secondary data was obtained by tracing and studying relevant documents and reports from the Ministry of Food and Agriculture. A list of documents and reports consulted is in appendix 1.

#### **4.10. Precautions and limitations**

This research is a case study of the impact of the decentralised administrative structure of the Ministry of food and Agriculture on extension delivery. Since purposive sampling was adopted in choosing the study area and the sample, results from the study cannot be generalised beyond the sample. Furthermore the researcher had to rely on the agricultural extension agents to collect data from the farmers and there is a likelihood of the extension agents manipulating some of the responses to cover up for their lapses. For example how often does your extension agent visit you? If the response seems unfavourable to the extension agent, an attempt could be made to change it for a more favourable response. For these and other such reasons the findings cannot be all conclusive although nothing of the sort was detected during the data collection because the researcher was always presented to cross check responses. In addition the responses from farmers were also available for crosschecking the responses from agricultural extension agents.



## **CHAPTER FIVE FINDINGS**

### **5.0. Introduction**

This chapter presents the findings of the study on the old and decentralised structures of Ministry of Food and Agriculture and extension delivery. The old structure of Ministry of Food and Agriculture covers the period 1992-1997. This period is a unique one because it was during that period that the Ministry of Food and Agriculture introduced a unified extension system and a T&V approach to extension delivery. Limiting the study of the old regime to this period allows for comparison because the Ministry of Food and Agriculture continues to apply the unified extension system and the T&V approach to extension delivery under its decentralised structure.

The findings presented are in three parts, the socio-economic characteristics of farmer in the study, the structures of Ministry of Food and Agriculture studied and extension delivery.

### **5.1. Socio-economic characteristics of farmers under the decentralised structure**

The socio-economic characteristics of farmers cover sex, age, marital status, level of education and type of farming system they operate.

**Sex.** Out of forty farmers studied, 60 % were males and 40 % females.

**Age.** The ages of the farmers studied are presented in Table 5.1. Majority (57.5 %) of farmers studied were in the age category of 31-50 years, 32.5 % of farmers were between 51-60 and 7.5% between 61-70 years. Only 2.5 % of farmers were below 31 years.

**Table.5.1: Age distribution of farmers**

Age distribution	Frequency	Percentages	Cum %
Below 31	1	2.5	2.5
31-40	12	30	32.5
41-50	11	27.5	60
51-60	13	32.5	92.5
61-70	3	7.5	100
Total	40	100	100

Source: field data.

**Marital status.** Seventy-two percent of farmers studied were married, 17.5 % were single and 10 % were widowed.

**Level of education.** The level of education of farmers studied is presented in Table 5.2. Fifty percent of the farmers studied had basic education, 15 % secondary education, 2.5 % university education and 32 % no formal education.

**Table 5.2: Level of education of farmers**

Level of education	Frequency	Percentage
No formal education	13	32.5
Junior secondary school / middle school education	20	50
Senior secondary school / secondary school education	6	15
University education	1	2.5
Total	40	100

Source: field data.

**Socio- economic activities of farmers.** Out of forty farmers studied, 95% were into farming while 5% were fish smokers. The type of farming practised by those into farming is presented in Table 5.3.

**Table 5.3: Type of farming practised by farmers**

Type of farming	Frequency	Percentage
Inter-cropping	30	78.9
Livestock / poultry rearing	7	18.4
Mixed farming (farm animals, fish and crop farming)	1	2.6
Total	38	100

Source: field data.

Among those who were into farming approximately 79 % practised inter-cropping, 18 % were into livestock and poultry farming and only 2.6 % practised mixed farming.

## **5.2 Organisational structure**

The organisational structures that were studied are shown in appendix 2A and 2B as organisational charts. The findings made from the study on these structure covers:

- Division of work
  - Departments
  - Positions or ranks
  - Responsibilities
- Chain of command
  - Planning
  - Supervision
  - Management control
- Co-ordination of effort.

### **5.2.1 Division of work**

The results of findings on division of work covered departments and positions of agricultural extension agents and the municipal director of agriculture and their responsibilities. The results cover both the old and decentralised structures of Ministry of Food and Agriculture.

#### **Departments of MOFA**

The old and decentralised structures show a clear distinction. In the old there were six departments while the decentralised has no departments. In the districts and regions there are

District Agricultural Development Units and Regional Agricultural Development Units. These are sometimes referred to as Departments of Agriculture. At the national level there are technical directorates responsible for policy formulation, development planning, co-ordination, monitoring and evaluation.

The departments of the respondents from the findings are presented in Table 5.4.

**Table 5.4: Departments of agricultural extension agents and the Municipal Director of Agriculture**

Departments of MOFA	Old structure		Decentralized structure	
	No.	%	No.	%
Policy Planning Monitoring and Evaluation.	2	10	-	-
Women in Agricultural Development	3	15	-	-
Department of Agricultural Extension Services.	5	25	-	-
Animal Production Department	1	5	-	-
Crop Services Department	4	20	-	-
Veterinary Services Department	5	25	-	-
Department of Agriculture	-	-	20	100
Total	20	100	20	100

Source: field data

Table 5.4 indicates that the nineteen agricultural extension agents and the municipal director of agriculture worked in six departments of the Ministry of Food and Agriculture in the old structure while in the new structure they all work in one department. The departments that they worked in, in the old structure were as follows: Policy Planning Monitoring and Evaluation, Women in Agricultural Development, Agricultural Extension Services, Animal Production, Crop Services and Veterinary Service Departments. The district director of agriculture worked in the Crop services department.

#### Positions of staff

Table 5.5 summarises the positions that agricultural extension agent and the district director of agriculture occupied in the old and decentralized structures of Ministry of Food and Agriculture.

**Table 5.5: Stated positions of Agricultural Extension Agents and the Municipal Director of Agriculture.**

Positions	Old structure		Decentralised structure	
	No.	%	No.	%
District officer	2	10	-	-
Supervisor	1	5	-	-
Frontline staff	16	80	-	-
Agricultural extension agent	-	-	19	95
Municipal Director of Agriculture	-	-	1	5
Head office staff in-charge of crops trials	1	5	-	-
Total	20	100	20	100

Source: field data.

The findings in Table 5.5 indicate that in the old structure there were two district officers representing 10 % of the staff. Only one supervisor was among the staff while 80 % were frontline staff. The Municipal Director of Agriculture was at the head office of Crop Services Department in-charge of crops trials. In the decentralised structure those interviewed were in only two positions, agricultural extension agent representing 95 % and the Municipal Director of Agriculture representing 5% of respondents respectively.

#### Responsibilities of staff

The responsibilities of staff from the findings are presented according to how they were performed in the old and decentralised structures of Ministry of Food and Agriculture.

#### The Old Structure

Municipal Director of Agriculture. The Municipal Director of Agriculture was at the head office of Crop Services Department in-charge of crops trials in the field.

District officers / supervisor. In the old structure three agricultural extension agents were not frontline staff. Two were district officers and one a supervisor. The responsibilities of these



extension agents according to the positions they occupied and their departments are presented in Table 5.6.

**Table 5.6: Stated responsibilities of AEAs who held other positions in the old structure of Ministry of Food and Agriculture**

<b>Position</b>	<b>Responsibilities</b>	<b>Department</b>
Supervisor	<ul style="list-style-type: none"> <li>▪ Assist the district officer in supervision of field staff.</li> <li>▪ Write monthly, quarterly and annual reports.</li> </ul>	DAES.
District officer	<ul style="list-style-type: none"> <li>▪ Supervise staff</li> <li>▪ Ensures that there are adaptive trial packages.</li> <li>▪ Write and submit monthly, quarterly and annual reports</li> <li>▪ Collaborate with NGOs in agro-forestry activities.</li> <li>▪ Draws a budget for the district</li> <li>▪ Manages resources allocated to the crop services department.</li> <li>▪ Manage and operate nurseries</li> </ul>	CSD.
District officer	<ul style="list-style-type: none"> <li>▪ Supervise staff</li> <li>▪ Manages resources allocated to the department</li> <li>▪ Ensures collection, early completion and submission of raw data to the regional office.</li> <li>▪ Confirm existence of enumeration area in district.</li> </ul>	PPMED.

Source: field data.

The responsibilities for the position of district officer stated in Table 5.6 suggest that those who occupied them had authority over the staff in departments at the district level.

Table 5.7 describes the responsibilities of the agricultural extension agents who occupied frontline staff positions in the old administrative structure. Table 5.7 indicates that the Policy Planning Monitoring Evaluation Department had nothing to do directly with extension services delivery. The staff in the departments of Crops Services, Veterinary Services and Animal Production all performed extension duties, which were specific to their departments. The Departments of Agricultural Extension Services and Women in Agricultural Development also performed extension services but it seems to be on a general basis since no specifics in terms of technical areas were mentioned.

**Table 5.7: Responsibilities of frontline staff as stated by AEAs**

<b>Departments</b>	<b>Responsibilities</b>
Crop Services Department	<ul style="list-style-type: none"> <li>• Conduct on-farm adaptive trials in crops.</li> <li>• Carryout extension in agro-forestry</li> <li>• Collaborate with NGOs in agro-forestry activities</li> <li>• Plan programmes to cover activities.</li> <li>• Write monthly, quarterly and annual reports</li> </ul>
Veterinary Services Department.*	<ul style="list-style-type: none"> <li>• Organize quarterly seminars for farmers.</li> <li>• Weekly surveillance on animal health and extension</li> <li>• Daily clinical activities</li> <li>• Inspection of inflow and outflow of animals under public health</li> <li>• Post-mortem and anti-mortem inspection of carcasses.</li> <li>• Anti-mortem inspection of animals before slaughter</li> <li>• Revenue collection for services</li> <li>• Write monthly, quarterly and annual reports</li> <li>• Attend office meetings</li> </ul>
Policy Planning Monitoring and Evaluation Department	<ul style="list-style-type: none"> <li>• Sample farmers from enumeration areas</li> <li>• Collect raw data on crop and livestock activities of peasant farmers</li> <li>• Collect data on large scale farms and institutional farms</li> <li>• Attend office meetings</li> </ul>
Animal Production Department	<ul style="list-style-type: none"> <li>• Carryout extension activities in and animal health and production eg breeding, feeding, housing and health and sanitation.</li> <li>• Write monthly, quarterly and annual reports</li> <li>• Attend office meetings</li> </ul>
Department of Agricultural Extension Services and Women in Agricultural Development	<ul style="list-style-type: none"> <li>• Conduct mini-demonstrations.</li> <li>• Visit farmer groups and individual farmers to deliver technologies to them</li> <li>• Attend monthly subject matter specialist training</li> <li>• Give feedback on field problems to subject matter specialist during training sessions.</li> <li>• Write monthly, quarterly and annual reports</li> <li>• Attend office meetings</li> </ul>

\*Responsibilities were not general to all, depended on location of staff

Source: field data

### The Decentralised Structure

The findings on the responsibilities of agricultural extension agents and the municipal director of agriculture under the decentralised structure are presented in this section.

Agricultural extension agents. The views of the agricultural extension agents on their responsibilities are presented in Table 5.8.

**Table 5.8: Views of Agricultural Extension Agents on their responsibilities in the decentralized structure**

List of responsibilities	Frequency	Percentage
Transfer of technologies to farmers	19	100
Collect data	7	36.8
Treat farm animals	7	36.8
Give technical advice and solutions to farmers' problems	19	100
Pick farmers problems and pass them on for solutions	1	5.3
Carryout adaptive research	3	15.8
Disseminate agricultural information	19	100
Write reports	19	100
Attend training	19	100
Attend office meetings	19	100
Attend short courses	3	15.8
Attend to office calls	6	31.6
Identify and assess farmers' problems	7	36.8
Prepare monthly returns	5	26.3

N=19

Multiple responses

Source: field data.

In Table 5.8 all the extension agents do not perform the same responsibilities though they all belong to the same department of agriculture which has specific responsibilities for all the extension agents. The transfer of technologies to farmers, give technical advice and solutions to farmers' problems, disseminate agricultural information, write reports, attend training and office meetings are the only responsibilities performed by all the extension agents. Approximately 5% and 16% of the extension agents pick farmers problems and pass them on for solution and carry out adaptive research respectively. The situation was different in the old structure. Extension agents belonging to a specific department all performed the same responsibilities.

Farmers. The analysis of the farmers' data on division of work gave their views on the responsibilities of agricultural extension agents as presented in Table 5.9.

**Table 5. 9: Farmers' views of responsibilities of Agricultural Extension Agents in the decentralised structure**

<b>Responsibilities</b>	<b>Frequency</b>	<b>Percentage</b>
Hold meetings to identify and assess farmers' problems	15	37.5
Make farm visits	10	25
Make home visits	4	10
Introduce new technologies	8	20
Provide solutions to problems	3	7.5
Give advice	3	7.5

Multiple responses

N= 40

Field data

The views of farmers on the responsibilities of agricultural extension agents indicate only 20 % of farmers stating that the responsibility of an extension agent is to introduce new technologies while only 7.5% are of the view that the extension agent's responsibility is to provide solutions to farmers' problems. Approximately 38% of the farmers also view the identification and assessment of farmers' problems as a responsibility of the extension agent.

When the views of extension agents in Table 5.8 and that of farmers in Table 5.9 on the responsibilities of extension agents are compared certain observation can be made. While 20% of the farmers are of the view that the extension agent's responsibility is to introduce new technologies to farmers, all the extension agents stated the introduction of new technologies to farmers as the responsibility. In addition only 5% of the extension agents stated that they had the responsibility to pick farmers' problems and pass them on for solutions. This is reflected in the views of farmers on the responsibilities of extension agents by an equally small percentage of farmers (22.5%) stating that extension agents hold meetings to discuss and assess farmers' problems. Furthermore only 7.5% of the farmers are of the view that the responsibilities of extension agents include providing solutions to farmers' problems while all the extension agents stated the provision of solutions to farmers' problems

as their responsibilities. These observations suggest that extension delivery in the decentralised structure was perceived as not effective with many of the farmers studied because their problems were not identified and therefore they did not receive any solution to them.

Municipal Director of Agriculture. The Municipal Director of Agriculture listed his responsibilities as stated below.

- Supervise technical and administrative staff.
- Visit trial sites and demonstration sites.
- Participate in fields
- Organize farmers' day celebrations.
- Represent Ministry of Food and Agriculture at all municipal assembly meetings.
- Assist the assembly to draw up agricultural development programme
- Implement assembly's agricultural development programmes.
- Manage the resources of the Municipal Agricultural Development Unit.
- Prepare and submit quarterly, mid-year and annual reports to my superiors.
- Facilitate promotion of staff through appraisal reports.

The responsibilities of the Municipal Director of Agriculture compared to the district officers in the old structure are more in the decentralised structure than in the old structure. The Municipal Director of Agriculture has some functions to perform at the municipal assembly, which were not performed by district officers because they had no formal relationship with the district assembly.

Findings on the division of work have revealed that changes have occurred. One of the changes identified is that the specialised approach to extension delivery in the old structure has changed to a generalised approach to extension delivery in the decentralised structure. The positions of some respondents as well as the responsibilities of all respondents have changed. For example the Municipal Director of Agriculture moved from a supervisory role in Crop Services Department in the old structure to a managerial role for agricultural extension activities in the decentralised structure. Some extension agents also moved from supervisory roles in the old structure to become field staff in the decentralised structure.

### **5.2.2 Chain of command**

The chain of command covered planning, supervision and management control. A review of these functions was performed to bring out the chain of command or authority structure that existed in Ministry of Food and Agriculture. The planning, supervision and management control functions have been presented independently followed by a synthesis that permitted conclusions to be drawn on the chain of command.

### **Planning in Ministry of Food and Agriculture**

An analysis of responses provided by agricultural extension agents, the Municipal Director of Agriculture, respondents from the municipal assembly and farmers provided the findings on planning in the Ministry of Food and Agriculture in the old and decentralised structures. Planning was studied at two levels, setting goals and objectives and farmer involvement in planning.

### Setting Goals And Objectives In The Old Structure

Agricultural Extension Agents. Approximately 90% of agricultural extension agents in the old structure had goals and objectives that guided their work while 10%, had no goals and objectives to guide them in their work as shown in Table 5.10. Table 5.10 also shows that approximately 32% of the extension agents set their own goals and objectives based on problems and needs of farmers. Nearly 16% set their own goals and objectives while 42% depended on targets from head office to set their goals and objectives.

**TABLE 5.10: SOURCES OF GOALS AND OBJECTIVES OF AGRICULTURAL EXTENSION AGENTS**

Sources of goals and objectives	Old structure		Decentralised structure	
	No.	%	No.	%
I work without goals and objectives.	2	10.5	-	
I set my own goals and objectives based on farmers' problems and national objectives	6	31.6	-	
I set my own goals and objectives.	3	15.8	2	10.5
I depend on targets from head office to set my goals and objectives.	8	42.1	-	
I derive my objectives from farmers' needs and problems		-	5	26.3
Objectives are derived from the municipal plan of work			12	63.2
Totals.	19	100	19	100

Source: field data

District officers. District officers whose departments existed and performed extension delivery in the municipality in the old regime gave their views on how they went about setting their goals and objectives. In the responses a district officer of the Department of Agricultural Extension Services in the old structure, stated that district goals and objectives for the department were based on targets from the head office of the Department of Agricultural Extension Services. The district officer of Crop Services Department stated that the district officer set district goals and objectives for the department. There was no influence from a

higher authority while the district officer for Veterinary Services Department stated that district goals and objectives for the department were set based on national objectives and needs of farmers.

#### Setting Goals And Objectives In The Decentralised Structure.

Agricultural extension agents. All agricultural extension agents in Table 5.10 stated that they had goals and objectives in the decentralised structure. Approximately 11% stated that they set their own goals and objectives while 26% stated that their goals and objectives were derived from farmers' needs and problems. Sixty-three percent stated that they derived their goals and objectives from the district plan of work.

Municipal Director of Agriculture. The Municipal Director of Agriculture hinted that goals and objectives for the municipality in the decentralised structure were derived from the national goals and objectives of the Ministry of Food and Agriculture.

Municipal assembly. All respondents of the municipal assembly were of the view that the municipal assembly was not involved in planning programmes of the Ministry of Food and Agriculture in the municipality in the old structure.

In the decentralised structure the Municipal Chief Executive has no direct role in planning agricultural programmes for the municipality. He acts mainly as an approving officer. The role of the Municipal Chief Executive is captured in this quotation

The district director of agriculture plans for agriculture in Tema municipality and shows the plans to the municipal chief executive for approval. If I have areas of interest in agriculture for the municipality, I seek assistance from the district director of agriculture to work out the modalities (field data).

Members of the development sub-committee of the municipal assembly stated that they were not involved in developing plans for agriculture in the municipality in the decentralised structure.

Farmers. The study found out that farmers were never involved in setting goals and objectives of the Ministry of Food and Agriculture.

#### Farmers involvement in planning

To determine the involvement of farmers in planning extension programmes, questions were directed at three categories of respondents. The result from the analysis of these responses is the findings on farmer involvement in planning. These findings are presented in Table 5.11.

**Table 5.11: The views of farmers, extension agents and Municipal Director of Agriculture on farmers involvement in planning extension programmes**

Farmers involvement in planning	Old structure				Decentralised structure					
	AEAs		MDA		Farmers		AEAs		MDA	
	No.	%	No.	%	No.	%	No.	%	No.	%
Attend MOFA planning sessions	6	31.6	-	-	2	5	4	21.1	1	100
Involved in needs /problems assessment.	8	42.1	-	-	13	32.5	6	31.6	1	100
Involved in fixing meeting days and times	15	78.9	-	-	40	100	19	100	-	-
N values	19	-	-	-	40	-	19	-	1	-

Multiple responses  
Source: field data

#### Farmer Involvement In Planning In The Old structure

Agricultural extension agents. Approximately 79 % of the agricultural extension agents in the old structure involved farmers in fixing meeting days and time, 42 % stated they involved farmers in needs/ problem assessment and 32%, said their farmers attend MoFA planning sessions.

District officers. The views of district officers whose departments were involved in extension delivery in the old structure were sought on farmer involvement in planning extension programmes.

District officer of Department of Agricultural Extension Services. The district officer stated that farmers were involved in planning through need assessment organised at various operational areas.

District officer of Crop Services Department. The district officer stated that farmers were never involved in planning. With assistance from extension agents of the Department of Agricultural Extension Services farmers were selected for crop trials.

District officer of Veterinary Services Department. The district officer stated that farmers were not involved in planning but planning was done taking their needs into consideration.

#### Farmer Involvement In Planning In The Decentralized structure

Agricultural extension agents. In the Table 5.11 all the agricultural extension agents agreed that farmers were involved in fixing meeting days and times. Approximately 32 % of agricultural extension agents were of the view that farmers were involved in needs / problem assessment. Only 21 % of agricultural extension agents stated that farmers' involvement in planning was through attendance of MOFA planning sessions.

Municipal Director of Agriculture. According to the Municipal Director of Agriculture as presented in Table 5.11 farmers attend MOFA planning sessions and are also involved in needs and problem assessment.

Farmers. All the farmers in Table 5.11 stated that they are involved in fixing meeting days and times while 33% stated that they are involved in needs and problems assessment. Only 5% stated that they have ever attended a MOFA planning session.

In Table 5.11 the nature of farmer involvement in planning has not changed in the two structures. Farmers are shown to be involved in planning through attending MOFA planning sessions, needs/ problem assessment and fixing meeting days and times with agricultural extension agents.

Effects of planning on extension delivery

In Table 5.12 the views of extension agents and the Municipal Director of Agriculture on the effect of planning on extension delivery are presented.

**Table 5.12: Effects of planning with regards to work of the Municipal Agricultural Development Unit**

Description of planning	AEAs		MDA	
	No.	%	No.	%
Planning in the decentralised structure is better for my work than before.	2	10.5	-	-
Planning for my work was better before the decentralization.	5	26.3	-	-
Planning in the decentralised structure has not made any difference in my work.	12	63.2	-	-
Planning in the decentralised structure has not changed performance in extension delivery	-	-	1	100
Total	19	100	1	100

Source: field data

Majority (63.2%) of the agricultural extension agents are of the view that planning in the decentralized structure have no affect on the way they were working before the decentralization. However about 26 % of the agricultural extension agents indicated that they were better off with planning in the old structure than the decentralised structure while 10.5 % are of the opposite view. The Municipal director of agriculture stated that in his view planning in the decentralized structure has not changed work performance of district agricultural development unit.

## **Supervision in the Ministry of Food and Agriculture**

Findings on supervision are presented on both the old and decentralised structures of Ministry of Food and Agriculture.

### The old structure

The findings indicated that all the agricultural extension agents had supervision in the old administrative structure. All the agricultural extension agents said their district officers supervised them while 68.4 % of them said their regional officers also supervised them. Fifty-eight percent of the agricultural extension agents stated that supervision was through field visits and office meetings while 42.1 % were of the view that it was only through field visits. On the frequency of field supervision, 42.1 % of the agricultural extension agents stated that they were visited once a week by their supervisors while 47.4 % stated once in two weeks and 10.5 percent stated daily. The Table 5.13 below indicates the responses from the agricultural extension agents on the assistance received from their supervisors, which facilitated the performance of their duties. In Table 5.13, all agricultural extension agents in the study are of the opinion that their supervisors made field visits and gave them instructions on their job to assist them in doing their duties as well as providing encouragement to both farmers and extension agents.

A further revelation from Table 5.13, suggest that approximately 58 % indicated that supervisors provided them with materials and equipment for demonstrations, while 74 % said their supervisors ensured that their transport and traveling allowances were paid regularly.

**Table 5.13: Activities of a supervisor as indicated AEs that facilitated their work in the old and decentralised structures**

	Old structure		Decentralised Structure	
	Frequency	%	Frequency	%
Make visits to encourage farmers and agricultural extension agents.	19	100	-	-
Evaluate agricultural extension agents' performance	10	52.6	-	-
Give instructions to assist agricultural extension agents in their jobs	19	100	15	78.9
Paid regular transport and travelling allowances to agricultural extension agents.	14	73.7	6	31.6
Arrange loans for farmers	-	-	4	21.1
Provided materials and equipment for demonstrations.	11	57.9	-	-
Assist in putting up work plan	-	-	10	52.6
Ensures subordinates are working	-	-	9	47.4
Ensured agricultural extension agents attended T&V monthly training sessions.	8	42.1	-	-

Multiple responses

N = 19

Source: field data.

District officers. Key informants who were district officers in the old structure in the study area were contacted for more relevant information on supervision because the position of Municipal Director of Agriculture did not exist in the old structure. The district officers were from the departments of crop services, policy planning monitoring and evaluation, veterinary services and agricultural extension services. Their views on supervision in the various departments are presented below.

Department of agricultural extension services. The district officer stated that supervisory visits were carried out twice in a week to observe what agricultural extension agents were doing at their operational areas as well as interact with farmers for their opinions on the work of the agricultural extension agent. The district officer further stated that office meetings were

organized once in a month to discuss field situational reports, receive monthly reports from agricultural extension agents, give instructions and pass on new policy directives available and other matters concerning staff welfare.

Policy Planning Monitoring and Evaluation Department. The district officer stated that he carried out field visits daily to cross check data collection and ensure that the right data was collected. Office meetings were also organized with staff to plan programmes and share work. He further stated that the regional officer made five routine visits to the district in a year to supervise the district's work. The purpose of the visits was for verification of data collected and work done. Thus the visits were scheduled to occur at the various stages of the data collection process.

Veterinary Services Department. The district officer stated that as a supervisor he went on field visits once a week per sub-district for the purpose of disease surveillance and to observe the performance of staff. As a subordinate to the regional veterinary officer he sent reports to the region to keep it informed of the district's activities.

Crop Services Department. The district officer stated that he carried out supervisory visits at the district level twice in a week to assist frontline staff in laying trials and also to collect data on the trials. The nursery was also visited once a week to ensure the production of healthy seedlings. In addition the district was visited by the regional officer to offer assistance in the laying of trials and also data collection on the trials. The regional officer's visits were made to coincide with the beginning of trials, the mid-period of trials and the harvesting period of trials. Furthermore the district officer stated that agro-forestry existed as a separate unit at the

regional and national levels. The regional agro-forestry officer paid visits to the district to distribute inputs and lunch campaigns and visit demonstration sites.

### Decentralised structure

Approximately 79 % of agricultural extension agents stated that they had a supervisor while 21 % said they did not have a supervisor. Out of those who said they had a supervisor 60 % indicated the development officer as their supervisor while 40 % stated the Municipal Director of Agriculture. They listed various activities that their supervisors performed that helped them in their work. These are presented in Table 5.13. According to the agricultural extension agents their supervisor performed different activities in support of their work. Approximately 21 % said the support came in the form of arranging loans for farmers, while nearly 53% said they are assisted in developing their work plans. Approximately 79% of the extension agents said that their supervisor gives them instructions about their work. Approximately 32% and 47% of the agricultural extension agents respectively stated that their supervisor provide resources for work and makes sure they are working.

Municipal Director of Agriculture. The views of the Municipal Director of Agriculture on supervision are that he played the roles of supervisor and subordinate. As supervisor he supervised the work of development officers and sometimes agricultural extension agents. As a subordinate, the Regional Director of Agriculture, the Municipal Chief Executive and the Municipal Co-ordination Director supervised him. On what he did as a supervisor the Municipal Director of Agriculture listed providing resources, supervising work and giving instructions on policy directives to his staff. As a subordinate the district director of agriculture had to report on the activities of the municipality to his superiors and under any other activities assign by them.



Municipal assembly. Respondents from the municipal assembly stated that the main form of supervision was to require reports from the Municipal Director of Agriculture, which were submitted on a quarterly basis and on demand.

Farmers. Analysis of the farmers' data on supervision revealed that 27.5 % were aware of their agricultural extension agent's supervisor while 72.5% said they were not aware of a supervisor for their extension agent. As to what the supervisor did during visits, 15 % said he found out whether the extension agent was working, 12.5% said he organised meetings with farmers and another 15% said he arranged loans for them. These views are presented in Table 5.14. The responses from the farmers are consistent with the findings on supervision as stated by agricultural extension agents under the decentralised structure.

**Table 5.14: The views of farmers on supervision in the decentralised structure**

Views of farmers	Frequency	Percentage
Aware of extension agent's supervisor	11	27.5
Not aware of extension agent's supervisor	29	72.5
Supervisor ensures extension agent is working	6	15
Supervisor organises meetings with farmers	5	12.5
Supervisor arrange loans for farmers	15	15

Multiple responses.

Source: field data

#### Effect of supervision on extension delivery

In stating the effect of supervision on their work, 57.9 % of agricultural extension agents were of the view that supervision before decentralization was better than in the decentralized structure. The remaining 42.1 % thought otherwise. The response from the Municipal Director of Agriculture was consistent with the response from majority of the agricultural extension agents that demands from the municipal assembly and the Regional Director of Agriculture limited his ability to be very effective as a supervisor.

## **Management control in Ministry of Food and Agriculture**

The findings on management control are discussed under three main sub-sections. These are the establishment of performance standards, monitoring results and comparing to standards and correcting deviations. This categorization is according to the three requirements of the control function. The findings were based on analysis of responses from agricultural extension agents, the Municipal Director of Agriculture and respondents from the municipal assembly. Questions on management control were not applicable to farmers.

### Establishing performance standards

Table 5.15 presents the views of agricultural extension agents on their sources of indicators in the old and the decentralised structures. Looking at the two structures together in Table 5.15, one can see that approximately 32% of agricultural extension agents did not have indicators in the decentralised structure while 11% did not have indicators in the old structure. In addition, approximately 47 % of agricultural extension agents used their own indicators in the old structure while 68 % use their own indicators in decentralised structure. According to 42 % of the agricultural extension agents, their performance indicators were determined from Head office while under the decentralised structure agricultural extension agents either had no performance indicators or used their own indicators.

### Old Structure

Agricultural extension agents. Approximately 90% of the agricultural extension agents had indicators for measuring performance while 10.5 % had no established performance indicators. Out of those who had performance indicators as shown in Table 5.15 approximately 47 % developed their indicators based on farmers' ability to adopt an innovation while 42 % said their indicators are determined from head office.

**Table 5.15: Sources of indicators for measuring performance as stated by Agricultural Extension Agents**

Sources of indicators	Old structure		Decentralised structure	
	No.	%	No.	%
I use my own indicators based on farmers' ability to adopt	9	47.4	13	68.4
My indicators are determined from my head office	8	42.1	-	-
I have no indicators	2	10.5	6	31.6
Total	19	100	19	100

Source: field data

District officers. Key informants who were district officers in the old structure gave their views on management control because the position of Municipal Director of Agriculture did not exist in the old structure. Among the district officers interviewed those of Crop Services Department and Veterinary Services Department stated that they were not aware of performance indicators. The district officer of the Department of Agricultural Extension Services stated that performance indicators were targets from the head office of the Department of Agricultural Extension Services. The district officer for Policy Planning Monitoring and Evaluation Department gave a similar view that performance indicators were from the departments' head office.

Decentralised Structure.

Approximately 68 % of the agricultural extension agents stated that they had indicators for determining the achievements of their objectives while 32 % said they did not have any indicators. Those who stated they had indicators were all of the view that they used their own indicators based on their farmers' ability to adopt technologies.

Municipal Director of Agriculture. The Municipal Director of Agriculture stated that he had indicators for measuring the achievements of objectives of the District Agricultural Development Unit. These were derived from national targets of the Ministry of Food and Agriculture

Municipal assembly. The Municipal Chief Executive stated that in the old structure there was no formal relationship with Ministry of Food and Agriculture but in the decentralised structure performance of the Department of Agriculture was measured based on the planned agricultural programme submitted to his office.

Monitoring of performance and comparing to standards.

Old Structure.

All the agricultural extension agents indicated that monitoring was done on departmental basis and it was by district and regional officers. They also stated that monitoring was by direct observation from monitors and also through reports that they submitted. A further analysis of the data revealed that the regional WIAD officer and Subject Matter Specialist (SMS) monitored the activities of agricultural extension agents from the Departments of Agricultural Extension Services and Women in Agricultural Department.

District officers. Two district officers one of Crop Services Department and another Veterinary Services Department stated that district activities were monitored to ensure that work was going on but not to collect data and analyse to determine performance. They added that the policy planning monitoring and evaluation department did monitoring with regards to performance.

The response from the district officer for Policy Planning Monitoring and Evaluation Department was consistent with the two other district officers that monitoring of the ministry's performance was by Policy Planning Monitoring and Evaluation Department. He further added that raw data on market prices, production trends, yields data, farm sizes and population demographic features of the rural population was collect at the district level and sent to the regional office. When asked whether any feedback was given to the district from the raw data sent, the response was no. In a similar interview with staff of the Monitoring and Evaluation Unit of the Policy Planning Monitoring and Evaluation Department at the head office they confirmed the functions of the district office and stated that of the regional office as follows:

- Monitor field activities of the districts
- Collate data from the districts
- Verification of all staff at post in the ministry and
- Budget monitoring to ensure that money is used for its intended purpose in the ministry.

A report on what has been accomplished is written and sent to the national office. There was no feedback to the districts. At the national office all reports from the regions are collated to give a national picture of the agricultural sector. A report is written but no copy is sent to the regions and districts.

The district officer of the Department of Agricultural Extension Services stated that the department had a monitoring unit at the head office, which did monitoring of all extension activities. No feedback was given after monitoring.

### Decentralised Structure

All the agricultural extension agents were of the view that their activities were monitored. They indicated their monitors as development officers (42.1%) and Municipal Director of Agriculture (57.9%). They stated their involvement in monitoring as collecting data and writing reports on their activities.

Municipal Director of Agriculture. The Municipal Director of Agriculture stated that monitoring of the activities of Municipal Agricultural Development Unit was by the Regional Director of Agriculture, the Municipal Chief Executive and the Policy Planning Monitoring and Evaluation Department (PPMED). The Municipal Director of Agriculture monitored individual field staff and indicated his involvement in monitoring to include direct observation and verification of reports and data submitted by agricultural extension agents. In a similar vein reports were submitted to the Regional Director of Agriculture and the Municipal Chief Executive for monitoring and for their records. The monitoring by PPMED involved collecting data on targets, achievements, planned expenditure, actual expenditure and number of beneficiaries to determine performance.

Municipal assembly. The Municipal Chief Executive stated that he requests for situational and progress reports from the Municipal Director of Agriculture to make sure that planned programmes were implemented. Members of the development sub-committee interviewed stated that assembly members make sure that agricultural activities planned for their areas are implemented.

### Correcting deviations

#### Old Structure.

Agricultural Extension Agents. Approximately 58 % of the agricultural extension agents said they received feedback while 42% said they did not receive feedback after monitoring.

District officers. All the district officers interviewed on monitoring in the old structure indicated that no feedback was given after monitoring.

#### Decentralised Structure.

Agricultural Extension Agents. Approximately 74 % of agricultural extension agents were of the view that no feedback was given after monitoring their activities while 26 % said they received feedback in the decentralised structure.

Municipal Director of Agriculture. The Municipal Director of Agriculture stated that no feedback was given after monitoring the district's activities. Feedback provides the basis for correcting deviations. Without feedback the deviations from standards may not be known and therefore it would be impossible to correct them.

#### Effects Of Management Control On Extension Delivery.

Both the agricultural extension agents and the district director of agriculture stated that management control in the decentralized structure did not make any difference in their work compared to what existed before decentralisation.

### **Summary of findings on the chain of command**

The summary of findings on the chain of command is to help bring out clearly from the findings on planning, supervision and management control what the chain of command was in

the old and decentralized structures.

Findings on planning in the old structure indicated that the sources of goals and objectives for approximately 74% of the extension agents were based on national or head office targets and objectives. In the decentralised structure 63% of the extension agents indicated that their sources of goals and objectives was the district plan of work while the Municipal Director of Agriculture maintained that goals and objectives of the Municipal Agricultural Development Unit was derived from national goals and objectives. This suggests that the Municipal Agricultural Development Unit have been relieved of national level planning. With this difference in the planning process 63% of the extension agents stated that their performance was not affected while approximately 26% thought that planning in the old structure had a better effect on performance compared to decentralised structure. Only approximately 11% thought that planning in the decentralised structure had a better effect on performance compared to the old regime.

Supervision in the old regime as indicated by all the extension agents was that district officers supervised them but in addition regional officers also supervised them. In the decentralised structure 21% of the extension agents did not have a supervisor. Those who had supervisors indicated development officers and the Municipal Director of Agriculture. Supervision in the decentralised structure was through field visits and office meetings the same as in the old structure. Frequency of supervision varied with the supervisor the decentralised structure. Development officers made weekly field visits while that of the Municipal Director of Agriculture was once in a while. In the old structure supervision was at least once in two weeks as indicated by approximately 90% of the extension agents. Extension agents indicated varying activities that the supervisors performed to assist them in their duties in the old



structure. All the extension agents agreed that supervisors make visits to encourage farmers and also give instructions to assist extension agents in their duties. Approximately 74% said their supervisors paid regularly their transport and travelling allowance. Approximately 53% and 58% of the extension agents respectively stated that supervisors evaluate their performance and provide materials and equipment for demonstrations. In the decentralised structure approximately 79% of the extension agents stated that their supervisors give them instructions. Nearly 52% stated that they are assisted in putting up a work plan. Approximately 47% of the extension agents stated that supervisors ensure that they are working while nearly 32% stated that they provide resources for their work.

Supervisors in the old structure did more to assist agricultural extension agents in the performance of their duties than in the decentralised structure. In addition supervisors in the old structure include regional officers while in the decentralised structure supervision of agricultural extension agents is only limited to development officers and the Municipal Director of Agriculture at the Municipal Agricultural Development Unit. Thus approximately 58% of extension agents thought that the changes in supervision have affected their performance negatively.

In the old structure approximately 47% of the extension agents used their own indicators while 68% did so in the decentralised structure. Approximately 11% had no indicators in the old structure while 32% did not have indicators in the decentralised. Forty-two percent of the extension agents had indicators determined from head office in the old structure. Monitoring of agricultural extension agents' activities in the old structure was by regional and district officers for all the departments but in addition subject matter specialist and the regional

WIAD officer monitored the activities of extension agents of the Department of Agricultural Extension Services. All the district officers interviewed stated that monitoring was through direct observation and reports from extension agents. Policy Planning Monitoring and Evaluation Directorate did collection of data to analyse and determine performance. The Department of Agricultural Extension Services also did monitoring of performance. In the decentralised structure monitoring was also based on direct observation and verification of reports and data collected by the extension agents. Policy Planning Monitoring and Evaluation Directorate analyzed the data to determine performance. While all the extension agents were involved in data collection in the decentralised structure only extension agents of Policy Planning Monitoring and Evaluation Directorate did data collection in the old structure. In both the old and decentralised structures, the views of majority of the respondents are that no feedback was given after monitoring.

### **5.2.3 Co-ordination of effort**

The findings on co-ordination of effort are based on the analysis of data on meetings between superiors and subordinates working in the same office. Meetings provide a forum for communication, which allows people in a group to flow together for a common purpose. The purposes of these meetings are presented in Table 5.16.

#### **The old structure.**

**Agricultural extension agents.** All the agricultural extension agents stated that their district officers organized office meetings. Apart from 26.3% of agricultural extension agents of the Department of Agricultural Extension Services who stated that office meetings were organized fortnightly, all the other agricultural extension agents (73.7%) of the various

departments stated they had monthly office meetings. In table 5.16 that shows the purpose of office meetings, no extension agent under the old structure indicated that the purpose of office meetings was for giving specific information to extension agents for farmers. Approximately 42 % stated that the purpose of office meetings was for discussing request from head office while 68% stated that office meetings were for finding solutions to personal problems.

**Table 5.16: The purpose of office meetings in the Ministry of Food and Agriculture as stated by AEs**

Purpose of meeting	Departments in old structure							Decentrali sed structure		
	DAES	WIAD	APD	VSD	CSD	PPME D	Row total		No.	%
								No.		
To find solutions to personal problems	3	3	1	4	1	1	13	68.4	14	73.7
To submit field report to district officer	4	1	1	5	-	-	11	57.9	4	21.1
To receive instructions and information from superior	2	1	1	5	1	1	11	57.9	9	47.4
For training staff	5	3	-	-	-	2	10	52.6	7	36.8
To discuss request from the regional office	1	1	-	2	1	1	6	31.6	6	31.6
To discuss request from the national office	3	1	-	2	1	1	8	42.1	-	
To give specific information to AEs for farmers.	-	-	-	-	-	-	-		3	15.8

Multiple responses

Source: field data

District officers. District officers of Crop services Department, Veterinary Services Department, Policy Planning Monitoring and Evaluation and Department of Agricultural Extension Services in the old structure gave their views on office meetings as key informants. The district officer of Crop services Department stated that the purpose of meetings were to give information to staff and to find solutions to personal problems of staff. The district officer for Veterinary Services Department stated that office meetings were for discussing work-related problems of staff and for giving instructions to field staff and finding solutions to personal problems. The district officer for Policy Planning Monitoring and Evaluation stated that the purpose of office meetings was to share work and find solutions to personal problems and to receive directives and training from regional and national office. The district officer for the Department of Agricultural Extension Services stated that office meetings were for discussing field reports and request from national and regional offices and for district officer to instruct field staff on their work and for training.

Decentralised structure. All the agricultural extension agents stated they attended office meetings and these were organised by the Municipal Director of Agriculture. In addition they stated that all staff of the department attended office meetings. On the frequency of office meetings, 31.6 % of agricultural extension agents stated monthly while 68.4 % stated once in a while. In Table 5.16 approximately 16 % of agricultural extension agents stated that the purpose of office meetings was for the Municipal Director of Agriculture to give specific information to extension agents for farmers. None of the extension agents stated that the purpose of office meetings was for discussing national request. Approximately 74% of the extension agents stated that the purpose of office meetings was for finding solutions to personal problems while 47.4% it was for receiving instructions from their superior.

In Table 5.16 certain similarities and differences can be observed between the old and decentralised structures. In the old structure the views of extension agents indicate that office meetings were never for giving specific information for farmers while in the decentralised structure approximately 16 % stated that specific information were given to extension agents for farmers. In the decentralised structure none of the agricultural extension agents stated that the purpose of office meetings was to discuss request from national office while in the old structure approximately 42 % stated it. Approximately 68% of agricultural extension agents in the old structure and 74 % in the decentralised structure were of the view that office meetings were for the purpose of finding solutions to personal problems. In addition nearly 58% of extension agents in the old structure and 47.4% in the decentralised structure thought that office meetings were for superiors to give instructions and information to subordinates. This suggests guidance from their superiors for subordinates to work well. Furthermore approximately 53% of agricultural extension agents in the old structure and nearly 37 % in the decentralised structure said meetings were for training.

#### Municipal Director of Agriculture.

The Municipal Director stated he organized office meetings for staff scheduled on a monthly basis but sometimes when his schedule is too busy he is not able to keep to his meeting plan.

The Municipal Director listed the purpose of office meetings as follows:

- To pass on new policy issues to staff
- To discuss financial management directives
- To review field reports with staff.
- To update staff with information and request from the Regional Agricultural Development Unit.

Apart from organizing office meetings, the Municipal Director of Agriculture is involved in other meetings for the purpose of agricultural development in the municipality. Other types of meetings that the Municipal Director of Agriculture attends are listed in Table 5.17. The Municipal Director of Agriculture attends meetings such as the technical review with the municipal assembly and quest lecturers, assembly meetings with members of the municipal assembly, the presiding member, the Municipal Chief Executive, heads of departments in the municipality and Municipal Co-ordinating Director.

**TABLE 5.17: LIST OF MEETINGS ATTENDED BY THE MUNICIPAL DIRECTOR FOR THE PURPOSE OF AGRICULTURAL DEVELOPMENT**

<b>Meeting type</b>	<b>Purpose of meeting</b>	<b>Participating bodies.</b>
Technical review meeting	For discussing scientific and technical issues	Tema municipal assembly, MOFA and guest lecturers.
Assembly meeting	General assembly meeting	Assembly members, heads of departments, municipal chief executive, municipal co-ordinating director and presiding member of the assembly.
Development sub-committee meeting of the assembly	Discuss development issues in the municipality	Sub-committee members and selected heads of departments.
Farmers association meeting	To discuss technical issues in farming	Farmers and other stakeholders
Stakeholders meeting.	To discuss problems facing agricultural development in the municipality.	Tema municipal assembly, MOFA, Tema development corporation and service providers.

Source: field data.

In addition he attends development sub-committee meeting with members and farmers association meeting with farmers and stakeholders. Furthermore he attends stakeholders' meeting with Tema Municipal Assembly, Tema Development Corporation and agricultural services providers. The information suggests that the position of Municipal Director of

Agriculture in the decentralized structure involved several role relationships with other bodies interested in the development of agriculture in the municipality.

#### Differences in co-ordination of effort

In the views of the agricultural extension agents the difference in co-ordination of effort as a result of decentralization is that there is more interaction with staff who were formally outside ones own department in the old structure. In the view of the Municipal Director of Agriculture the decentralized structure has opened more avenues for co-ordination to ensure the successful development of agriculture in the municipality.

#### **5.2.4 Extension delivery in the MOFA**

Extension delivery covers technology generation and sourcing, training and contacting farmers with technologies as they occurred in the old and decentralised structure. Findings on extension delivery are presented under three main sub-headings. These are technology generation and sourcing, making technology accessible to extension agents and dissemination of knowledge to farmers. The presentations cover both the old and decentralised structures of the Ministry of Food and Agriculture.

#### **Generation Of Technologies**

The findings on generation of technologies revealed that approximately 58 % of the agricultural extension agents were involved in technology generation with research in the old structure while 21% of the agricultural extension agents stated they were involved in technology generation with research in the decentralised structure. The agricultural extension agents who indicated they were involved in technology generation in the old structure are

from the Department of Agricultural Extension Services, Crop Services Department and Women in Agricultural Development. Agricultural extension agents from Veterinary Services Department and Animals Production Department don't know whether they are involved in technology generation or not. While those of PPMED stated that they were not involved in technology generation. These views are presented in Table 5.18.

**Table 5.18: Views of Agricultural Extension Agents on their involvement in technology generation**

Issues	Departments in the old structure							Decentrali sed structure	
	DAES	CSD	WIAD	APD	VSD	PPM ED	Row Total	No.	%
	No.	No.	No.	No.	No.	No.	%		
Involved in technology generation	5	3	3	-	-	-	57.9	4	21.1
Not Involved in technology generation	-	-	-	-	-	2	10.5	15	78.9
Don't know			-	1	5		31.6		-

Source: field data

Those agricultural extension agents who indicated they were involved in technology generation listed a number of activities that they performed in the technology generation process. These are presented in Table 5.19.

**Table 5.19: Activities performed by Agricultural Extension Agents involved in technology generation.**

Activities	Old structure		Decentralised structure	
	Frequency	Percentage	Frequency	Percentage
Identify farmers' problems	7	63.6	3	75
Get ready materials for demonstration	4	36.4	-	-
Demarcate plots for trials	5	45.5	-	-
Organise field days	-	-	4	100
Make suggestions to research	5	45.5	-	-
Establish demonstration plots	11	100	2	50

Multiple responses

Source field data

### Old Structure.

Agricultural extension agents. In Table 5.19 all the agricultural extension agents who indicated they were involved in technology stated that they were involved in establishing demonstration plots. Approximately 64 % of them stated they were involved in identifying farmers' problems. Other aspects of the technology generation activities were indicated by nearly 46 % of agricultural extension agents in each case. These are demarcating plots for trials and making suggestions to research.

District officers. In all four-district officers from Crop Services Department, Department of Agricultural Extension Services, Veterinary Services Department and Policy Planning Monitoring and Evaluation Department were interviewed. The district officers for Veterinary Services Department and Policy Planning Monitoring and Evaluation Department stated that they were not involved in technology generation, which is consistent with the response from agricultural extension agents of these departments (Table 5.18).

The district officer for Crop Services Department stated that the department was involved in technology generation by conducting adaptive trials. A further statement from the district officer indicated that the adaptive trial packages were from research and sent to the district through the Crop Services Department at head office. On procedure the district officer indicated how the adaptive trial packages were selected. The district officer stated that the selection of trial packages were based on farmers' problems in the municipality. These problems were either observed or from the Department of Agricultural Extension Services through the Research Extension Liaison committee to research. Research works on the

problems and the solutions are tried for suitability and acceptance before the technology is approved for transfer to farmers.

The district officer for the Department of Agricultural Extension Services stated that the department was involved in technology generation through various activities. These are identification of farmers' problems, conducting field trials and making suggestions to research. The district officer stated that the procedure for generating technologies was identifying farmers' problems and through a Research Extension Liaison Committee planning session at a zonal level, the problems were prioritised. Research then works on the priority problems and when solutions are found Subject Matter Specialist from Ministry of Food and Agriculture are trained in the new technologies.

#### Decentralised Structure.

Agricultural Extension Agents. Approximately 79 % of the agricultural extension agents were of the view that they were not involved in technology generation while 21 % stated that they were involved in technology generation. The 21% who stated they were involved in technology gave their involvement as identifying farmers problems, organizing field days and establishing demonstration plots. In table 5.19, all 21% of the extension agents organise field days, 75% out of the 21% stated identifying farmers problems while 50% out of the 21% said the establish demonstration plots.

Municipal Director of Agriculture. The Municipal Director of Agriculture stated that the Municipal Agricultural Development Unit was involved in technology generation and those involved were the agricultural extension agents and the district development officers. He

however could not tell what their involvement was. On procedure for generating technologies the Municipal Director of Agriculture stated that it was based on self-initiative through contacts with research.

Farmers. Farmers' involvement in technology generation in the decentralised structure revealed that 95 % of farmers discuss their problems with agricultural extension agents before solutions are offered. Another 37.5% stated that they were sometimes involved in testing new technologies while 62.5% indicated that they were never involved in testing new technologies.

### **Sourcing Of Technologies For Delivery**

#### External Sources Of Technologies In The Old Structure.

Agricultural Extension Agents. Approximately 10 % of agricultural extension agents said they source for new technologies outside the Ministry of Food and Agriculture for delivery in the old structure while 89.5 % said no. The agricultural extension agents' external sources of technologies for delivery are presented in Table 5.20. The external sources of technologies that extension agents indicated in Table 5.20 under the old structure are books.

**TABLE 5.20: AGRICULTURAL EXTENSION AGENTS' SOURCES OF TECHNOLOGIES OUTSIDE THE MINISTRY OF FOOD AND AGRICULTURE**

Outside sources of technologies	Old structure		Decentralised structure	
	Frequency	Percentage	Frequency	percentage
Books	2	10.5	3	15.8
Crops research institute	0	0	2	10.5
Universities	0	0	2	10.5
Friends	0	0	1	5.3
NGOs training	0	0	1	5.3
Farmers	0	0	2	10.5

Multiple responses

Source: field data.

External Sources Of Technologies in the Decentralised structure.

Agricultural Extension Agents. Forty-two percent of agricultural extension agents stated that in the decentralised structure they source for technologies outside Ministry of Food and Agriculture for delivery while 58 % were of the view that they did not. Those who source for technologies outside Ministry of Food and Agriculture indicated their sources as presented in Table 5.20. Under the decentralised structure the sources include books, Crops Research Institute, universities, friends and farmers.

Municipal Director of Agriculture. The Municipal Director of Agriculture stated that in the decentralised structure the Municipal Agricultural Development Unit source for technologies outside the ministry and the Animal Research Institute was the place for sourcing the technologies for animal’s extension.

Reasons for not sourcing technologies outside Ministry of Food and Agriculture.

Agricultural extension agents who did not source for technologies outside the Ministry of Food and Agriculture stated their reasons as indicated in Table 5.21.

**Table 5.21: Agricultural Extension Agents’ reasons for not sourcing technologies outside the Ministry of Food and Agriculture**

Reasons	Decentralised structure		Old structure	
	No.	%	No.	%
Don’t know outside sources	3	27.2		-
Funds are not available for sourcing technologies	4	36.4		-
Technologies within the ministry satisfy my field needs	4	36.4	10	59
Monthly training provided the needed technologies.	-	-	7	41
Total	11	100	17	100

Source: field data.

Old structure. Forty-one percent of respondents in the table 5.21 under the old structure stated the reason that monthly training provided the needed technologies for their work while 59 % thought that the technologies provided by the Ministry of Food and Agriculture satisfied their field needs.

District officers. In the old structure, district officers of the Department of Agricultural Extension Services, Crop Serviced Department, and Veterinary Services Department interviewed stated that their departments did not source for technologies outside the organisation. They all gave a similar response that indicates that training was used to provide the needed technologies of field staff.

Decentralised structure. In table 5.21, 36.4 % of agricultural extension agents who do not source for technologies outside Ministry of Food and Agriculture in the decentralised structure gave a reason that technologies within the Ministry of food and Agriculture satisfy their field needs. The reasons given by the others were that 27.2% did not know outside sources while 36.4% said funds were not available for sourcing for technologies outside the Ministry of Food and Agriculture.

Internal sources of technologies for delivery.

In addition to the external sources of technologies stated by respondents, they also mentioned that the Ministry of Food Agriculture provided its agricultural extension agents with technologies through training while some of the extension agents used the previous knowledge they acquired in addition. Approximately 26% of the agricultural extension agents used previous knowledge in the old structure while 47 % used previous knowledge in the decentralised structure.

Training. In Table 5.22 is presented the types of training used by MOFA to provide agricultural extension agents with new technologies. The views of the agricultural extension agents on internal sources of technologies in the old structure suggest that nearly 58% of them were provided with technologies through in-service while 42% were provided with technologies through T&V training. On the other hand all the extension agents in the decentralised were provided with T&V training.

**Table 5.22: Types of training used by MOFA to provide Agricultural Extension Agents with new technologies**

Types of training	Departments of MOFA in the old structure							Decentralised structure		
	DAES	WIAD	CSD	APD	PPME D	VSD	Row total	Row %	No.	%
T&V training	5	3	-		-		8	42.1	19	100
In-service training		-	3	1	2	5	11	57.9	0	0

Multiple responses

Source: field data

In Table 5.23 is presented the frequency of the training used by Ministry of Food Agriculture to provide agricultural extension agents with new technologies. Approximately 58% of the extension agents indicated that they had their training once in a year while 42% had their training on a monthly basis in the old structure. In the decentralised structure approximately 21% of the extension agents stated that their training was organised monthly while 78.9 % stated it was organised once in a while.

**Table 5.23: Frequency of training for providing AEAs with new technologies**

Type of training	Frequency of training in %			
	Old structure		Decentralised structure	
	Monthly	Yearly	Monthly	Once in a while
Yearly in-service training	0	57.9	0	0
T&V training	42.1	0	21.1	78.9

Source: field data

When asked to state how training topics were selected, only 10.5% of the extension agents could state a procedure in the old structure. The remaining 89.5% could not state how training

topics were selected. The procedure adopted in selecting training topics as described by the two extension agents were as follows:

“Trainers consider the kind of activities carried out by farmers at a particular period in selecting their training topics”(Field data).

“The topics are selected during review meetings where frontline staff, researchers, subject matter specialist and farmers participate”(Field data)

None of the extension agents could state a procedure for selecting training topics in the decentralised structure.

In Table 5.24 all the agricultural extension agents stated that the training provided was useful to them in the old structure. In the decentralised structure approximately 58 % of the extension agents thought that the training was less useful because it was all theory without practical training. The views of the agricultural extension agents on the usefulness of the training are presented in Table 5.24.

**Table 5.24: Usefulness of training to AEAs**

Usefulness of training	Old structure		Decentralised structure	
	No.	%	No.	%
It sharpens my skills and improves my performance.	6	31.6	8	42.1
Theory without practical makes the training less useful	-	-	11	57.9
Improve my skills and provide new technologies and solutions to farmers' problems.	1	68.4		-
Total	19	100	19	100

Source: field data.

Training in the Old structure. In the old structure Ministry of Food and Agriculture provided two types of training to equip agricultural extension agents with technologies for delivery. Agricultural extension agents in the departments of Agricultural Extension Services and

Women in Agricultural Development had T&V training while the other departments provided in-service training (Table 5.22). The T&V training was organised monthly while the in-service training was once in a year. All the agricultural extension agents indicated that the training provided was useful to them. Approximately 32 % of the agricultural extension agents stated that the training sharpens their skills and improves their performance while 68.4 % stated that it improves their skills and provide new technologies and solutions to farmers' problems.

District officers. Some district officers in the old structure whose departments were involved in extension delivery gave their views on training provided by the Ministry of Food and Agriculture.

District officer of Department of Agricultural Extension Services. The district officer stated that the main source of technologies for delivery was through monthly training of frontline staff by Subject Matter Specialists from the various technical departments of Ministry of Food and Agriculture.

An example of the type of training given was obtained from the directorate of agricultural extension services as presented below.

#### **Training topics for the year 1996**

- ◆ Extension in animal health
- ◆ Veterinary drugs and administration
- ◆ Signs and symptoms for identifying common livestock diseases (cattle , sheep, goats and poultry)
- ◆ Breeding management (mating, culling and castration)
- ◆ IPM of vegetables
- ◆ Tilapia culture
- ◆ Micro-nutrient deficiency

- ◆ Safe use of agro-chemicals.

Source: 1996 planner for south-eastern zone, Department of Agricultural Extension Services.

District officer of Crop Services Department. The district officer indicated that training on a yearly basis was organised by the department at the national level to provide field staff with the needed knowledge and skills for their work.

District officer of Veterinary Services Department. The district officer stated that yearly in-service training were organised at the national level for field staff to equip them with new technologies.

Training in the decentralised structure. In the decentralised structure the Ministry of Food and Agriculture used only T&V training to provide agricultural extension agents with technologies for delivery. According to a 79 % majority view of the extension agents the training was organised once in a while. The training provided was considered less useful by approximately 58 % of the agricultural extension agents because it was all theory without practice. The other 42% thought it sharpened their skills and improved their performance.

Training topics treated in 2001 according to the extension agents are listed below.

#### **List of training topics for year 2001**

- ◆ Diseases and pests of vegetable crops
- ◆ Fish preservation
- ◆ Field measurements for yields
- ◆ Fish farming
- ◆ Silage preparation for dry season feeding of ruminants
- ◆ Data collection

Source: field data

Municipal Director of Agriculture. The Municipal Director of Agriculture stated that the Municipal Agricultural Development Unit provided T&V training to equip agricultural extension agents with new technologies

### **Knowledge Dissemination**

The findings on knowledge dissemination are based on the analysis of data from respondents on methods of contacting farmers, field visits, timeliness of information delivery to farmers, ability of agricultural extension agents to identify farmers' problems and provide solutions, problems with delivery and morale of extension workers.

### Methods Of Contacting Farmers

All the agricultural extension agents stated that the method of contacting farmers were both through individual and group contacts. The extension methods used by agricultural extension agents in extension delivery are presented in Table 5.25.

**Table 5.25: Extension methods used by AEAs in extension delivery.**

Extension Methods	Departments in the old structure						Row total %	Decentralised structure	
	DAES	WIAD	CSD	APD	PPM ED	VSD		No.	%
Farm visits	5	3	3	1	0	5	89.5	17	89.5
Result and method demonstration	5	3	3	1	0	5	89.5	16	84.2
Home visits	5	3	0	1	0	0	47.4	10	52.6
Group meeting	5	3	3	1	0	3	78.9	19	100
Office call	2	0	0	0	0	0	10.5	4	21.1
Field trip	0	2	0	0	0	0	10.5	-	-

N= 19

Multiple responses

Source: field data

In Table 5.25 the extension methods used in delivery by agricultural extension agents in the old and decentralised structures are almost the same except for field trip, which is not used, in

the decentralised structure. The extension methods used are farm visits, method and result demonstrations, home visits, group meeting and office call.

### Old Structure.

In Table 5.25 all the agricultural extension agents except those from Policy Planning Monitoring and Evaluation Department used demonstrations in delivering extension messages. Approximately 90% of all extension agents used method and result demonstrations to deliver their messages. A similar percentage used farm visits. Group meetings were the third significant method of extension delivery. It was employed by 79 % of the extension agents. On the other hand only 5% more agricultural extension agents used group meeting, home visits and office call in the decentralised structure than in the old structure.

District officers. District officers in the old structure from departments of Ministry of Food and Agriculture in Tema municipality whose departments were involved in extension delivery were approached for their opinions on the use of extension methods. The district officer of Department of Agricultural Extension Services stated that the method of contacting farmers was through the contact group approach. The main extension method used was method and result demonstrations although some individual methods such as home and farm visits were also used. The District officer of Crop Services Department was of the view that frontline staff used both individuals and groups in their work. Extension methods used in delivery were method and result demonstrations. For Veterinary Services Department, the District officer stated the method of contacting farmers was by individual and group contact and the extension methods used were farm and home visits, demonstrations and office calls.

### Decentralised Structure.

Approximately 90% of agricultural extension agents in Table 5.25 used farm visits in both regimes while 5% more agricultural extension agents used result and method demonstrations in the old structure than in the decentralised structure (84.2%).

Farmers. The analysis of farmers' data revealed that extension agents contacted them in-group and individually. Approximately 53 % indicated they were contacted individually and in-group, nearly 23 % stated group contact only while 25 % said individual contact only. These findings are consistent with that of agricultural extension agents on the same issue. Approximately 58 % stated that extension agents met them both at farm and home, 25 % indicated farm while 18 % said in the home. The farmers then indicated the various ways in which information was passed onto them as presented in Table 5.26.

**Table 5.26: Farmers' views on the methods Agricultural Extension Agents use in delivery**

<b>Methods used</b>	<b>Frequency</b>	<b>Percentage</b>
Demonstration	17	42.5
Talking only	30	75.0
Talking with visuals	4	10.0

Multiple responses

Source: field data

In Table 5.26 approximately 43 % of the farmers are of the view that extension agents used demonstration to pass on new information to them. Seventy-five percent were of the view that extension agents only talk to them about the new information while 10 % indicated the extension agents use some visuals when talking to them about new information.

### Field Visits

The findings on the interaction between agricultural extension agents and farmers have been grouped to facilitate comparison of the results from the study. The groupings are as follows:

Daily to once a week – very frequent.

Over a week to once in two weeks – frequent.

Over two weeks to once in a month – less frequent

Over a month – not frequent.

**Table 5.27: Agricultural Extension Agents' farmer interaction in the MOFA.**

Frequency of agricultural extension agents farmer interaction.	Departments of MOFA in the old structure							Decentralised Structure		
	DAES	WIAD	PPME D	APD	CSD	VSD	Row Total		No.	%
							No.	%	No.	%
Once a month	1	-	-	-	-	-	1	5.3	2	10.5
Once in two weeks	3	1	-	-	-	-	4	21.1	8	42.1
Once a week	-	1	-	-	2	-	3	15.8	1	5.3
Two times in a week	-	-	2	-	-	3	5	26.3	4	21.1
Three times in a week	1	-	-	-	1	2	4	21.1	1	5.3
Four times in a week	-	1	-	1	-	-	2	10.5	3	15.8
Totals.	5	3	2	1	3	5	19	100	19	100

Source: field data

#### Old Structure.

According to the groupings, the responses in Table 5.27 indicate that approximately 74% of agricultural extension agents had very frequent interaction with farmers. Twenty-one percent and 5% of agricultural extension agents had frequent and less frequent interaction with farmers respectively.

#### Decentralised Structure.

In the decentralised structure, the grouping of responses in Table 5.27 revealed that 47% of the agricultural extension agents interacted very frequently with farmers which are 27% less than that of the old structure. Forty-two percent had frequent interaction with farmers while

approximately 11% had less frequent interaction with farmers. The decentralised structure recorded higher percentages in frequent and less frequent field visits than in the old structure.

Farmers. Going by the response groupings the findings in table 5.28 suggest that 57.5% of the farmers were of the view that their interaction with agricultural extension agents was very frequent. Thirty percent thought that the interaction with agricultural extension agents was frequent and 12.5% indicated that it was less frequent.

There is consistency when the results from farmers are compared with that of the extension agents in the decentralised structure. In both cases majority indicated very frequent interaction likewise the other responses.

**Table 5.28: Farmers view of Agricultural Extension Agents' visits**

Frequency of visits	Frequency	Percent
4 times a month	1	2.5
8 times a month	8	20.0
3 times a month	12	30.0
6 times a month	14	35.0
once a month	5	12.5
Total	40	100

Source: field data

Majority (70%) of the farmers stated that they were satisfied with the frequency of field visits from agricultural extension agents because their problems were well addressed. However 23 % of the farmers stated that they would like more time with agricultural extension agents to discuss their problems while 7% of the farmers said frequency of visits does not matter because they cannot adopt the few new ideas brought to them.

#### Timeliness of information delivery to farmers

The findings indicated that approximately 37 % of the farmers say that the messages are timely because the messages come when they need them. Fifty percent of the farmers are of

the view that the messages are sometimes timely because the messages come before they are needed while nearly 13 % were of the view that they messages come after they had need for them and therefore were not timely.

In Table 5.29 a majority of approximately 62% of farmers practising inter-cropping who said the extension messages were useful also said they were timely. Likewise and approximately 88% majority who said the messages were not useful also said they were not timely. A 75% majority of livestock farmers who said the messages were useful also said they were timely. All the fish smokers thought the messages were timely and therefore useful to them. This suggests that messages that are delivered timely can be used by farmers and therefore are considered useful. It further suggests a possible difficulty in timing messages to meet the needs of farmers into different types of farming systems.

**Table 5.29: Distribution of farmers by timing and usefulness of extension messages**

Socio-economic activities of farmers	Usefulness of extension messages			Timeliness of extension messages			
	Category			Timely		Not timely	
				Freq.	%	Freq.	%
Inter-cropping	Useful			8	61.5	2	11.8
	Not useful			5	38.5	15	88.2
Livestock/poultry rearing	Useful			3	75	2	66.7
	Not useful			1	25	1	33.3
Mixed farming (crops and animals)	Useful			0	0	0	0
	Not useful			0	0	1	100
Fish smoking	Useful			2	100	0	0
	Not useful			0	0	0	0

Source: field data

Ability of agricultural extension agents to identify farmers' problems and provide solutions

The farmers' problems identified by extension agents and the extent to which they found solutions to them are presented in Table 5.30. The farmers' problems identified are in the following areas:

PROBLEM AREAS	PROBLEM IDENTIFIED
Agronomic problems	Diseases in onion and poor yields
Inputs	High cost of inputs, lack of access to credit facilities and high interest rates on loans
Technical backstopping	Difficulty in getting farmland and difficulty in accessing tractor services
Marketing	Low prices for farm produce

Old Structure.

In Table 5.30 under the old structure approximately 32 % of agricultural extension agents identified diseases in onion as a problem among their farmers, 26 % provided solutions out of which nearly 16% provided complete solutions and 10 % partial solutions. Five percent did not provide any solutions. The farmers of the extension agents concerned accepted the solutions. Approximately 42 % of extension agents identified the problem of high cost of inputs among their farmers. Twenty-six percent could not provide solutions but nearly 16 % of the extension agents provided solutions to the problem and approximately 11 % of the extension agents had their farmers accept the solutions while 5% did not have any acceptance from their farmers.

In the old structure approximately 47 % of extension agents identified the problem of lack of access to credit facilities and nearly 37 % provided partial solution to the problem while 10 % had no solutions. Ten percent of extension agents had their solutions accepted by the farmers.

Decentralised structure. Under the decentralised structure in Table 5.30 only 10% of extension agents identified and provided complete solutions to problems of diseases in onion

among their farmers. The solutions were found acceptable to their farmers. Nearly 37 % of extension agents identified the problem of high cost of inputs as being the problem of their farmers. Twenty-one percent could not provide any solutions but approximately 16 % provided partial solutions to the problem with approximately 11 % of the extension agents having the solutions accepted while 5% did not. In addition 42 % of agricultural extension agents identified the problem of lack of access to credit facilities and nearly 32 % provided partial solution to the problem while 10 % did not have a solution to provide. Ten percent of extension agents had their solutions accepted for lack of access to credit facilities.

Difficulty in getting farmland, low prices for farm produce and high interest rates for loans are farmers' problems identified by agricultural extension agents only in the decentralised structure. Difficulty in getting farmland was identified by approximately 68 % of extension agents with only 10 % being able to suggest temporary solution to the problem. Nearly 58 % had no solution to the problem. In the acceptance of the solutions provided, 5 % of the extension agents had farmers accept their solution. Similarly 47 % and nearly 37 % of extension agents identified low prices for farm produce and high interest rates respectively. Only 10% of the extension agents in each case had the farmers accept the partial solutions they provided.

A look at table 5.30 suggests that agricultural extension agents are better able to handle the agronomic problems of farmers than the other problems. For example the problem of diseases in onion was identified by approximately 32 % of extension agents in the old regime with 26 % providing complete and partial solution to the problem, which was accepted by their farmers. Similarly, in the decentralized structure, 10 % of agricultural extension agents

**TABLE 5.30:FARMERS' PROBLEMS IDENTIFIED BY AGRICULTURAL EXTENSION AGENTS AND THEIR ABILITY TO PROVIDE SOLUTIONS TO THEM IN THE OLD AND DECENTRALISED STRUCTURES**

Problems of farmers identified by agricultural extension agents	Solutions to problems						Acceptance of solutions			
	Old structure			Decentralised structure			Old structure		Decentralised structure	
	Complete	Partial	None	Complete	Partial	None	Yes	No	Yes	No
Diseases in onion	15.8	10.5	5.3	10.5	0	0	26.3	0	10.5	0
High cost of inputs	5.3	10.5	26.3	0	15.8	21.1	10.5	5.3	10.5	5.3
Difficulty in accessing tractor services	0	10.5	26.3	-	-	-	10.5	0	-	-
Lack of access to credit facilities	0	36.8	10.5	0	31.6	10.5	10.5	26.3	10.5	21.1
Poor yields	5.3	15.8	21.1	-	-	-	15.8	5.3	-	-
Difficulty in getting farmland	-	-	-	0	10.5	57.9	-	-	5.3	5.3
Low prices for farm produce	-	-	-	10.5	5.3	42.1	-	-	5.3	10.5
High interest rates on loans	-	-	-	0	10.5	26.3	-	-	5.3	5.3

N=19

Multiple response

Source: field data

identified diseases in onion as a problem among their farmers and were able to provide complete solution to the problem, which was accepted by the farmers. Poor yields are also an agronomic problem and the figures in table 5.30 suggest that it was handled in the old structure and no extension agent identified it in the decentralised structure. Figures on difficulty in getting farmland, low prices for farm produce and high interest rates on loans show that most of the extension agents at all times could not provide solutions or acceptable solutions to these problems.

Extension agents ability to solve farmers' problems through needs and problems assessment.

Table 5.31 shows a cross tabulation of agricultural extension agents who involve farmers in problems and needs assessment with the acceptance of their solution.

**Table 5.31: Distribution of AEAs who involve farmers in problems and needs assessment by AEAs who had their farmers accept solutions to their problems.**

Involvement of farmers by AEAs in problems and needs assessment	Acceptance of solutions in the old structure.				Acceptance of solutions in the decentralised structure			
	Yes		No		Yes		No	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Involve farmers	7	70	3	33.3	4	40	2	22.2
Don't involve farmers	3	30	6	66.7	6	60	7	77.8
Total	10	100	9	100	10	100	9	100

Source: field data

The involvement of farmers in problems and needs assessment can be helpful to extension agents when they have to provide solutions to farmers' problems. In Table 5.31 it can be seen that 70% of extension agents in the old structures who involved farmers in problems and needs assessment also had their farmers accept their solutions. Similarly approximately 78% of extension agents in decentralised structure who this did not involve farmers in problem and needs assessment also did not have their farmers accept their solutions. These suggest a relationship between farmers' involvement in problems and needs assessment and the

acceptance of solutions. Thus it is more like those extension agents will address farmers' problems and needs when the extension agents know them.

The Farmer Extension Agents Relationship. Findings revealed that 25% of the farmers had very cordial relationships with the extension agents while 75 % had cordial relationship with the extension agents. As to whether they liked the way in which new information was passed onto them, 30 % of the farmers stated that they always liked the way in which it was done while 70 % indicated that sometimes they liked the manner in which new information was introduced. This suggests the manner in which information is passed on to farmers is important and does not depend only on how cordial a relationship is. Thus the use of appropriate extension methods in delivering extension messages is important.

#### Problems with delivery

The agricultural extension agents listed various problems that they encounter that affect their ability to deliver messages to farmers as presented in Table 5.32.

#### Old Structure.

In Table 5.32 a majority of agricultural extension agents (63.2%) have indicated that they did not have any problems with their work in the old structure. Only approximately 37 % are of the view that they face problems. Nearly 16 % had no means of transport while 21 % complained of inadequate and delayed transport and travelling allowance.

#### Decentralised Structure.

Approximately 79 % of agricultural extension agents in Table 5.32 are of the view that in the decentralised structure they received inadequate training in new technologies. Another 42.1 %

also indicate problems with inadequate materials and equipment for demonstrations and transport and traveling allowance while nearly 32 % stated that they lack competencies in new areas and 21 % lack extension skills to transfer technologies to farmers.

**Table 5.32: Problems that affect the performance of Agricultural Extension Agents in MOFA**

List of problems	Old structure		Decentralized structure	
	No.	%	No.	%
Inadequate materials and equipment for demonstrations	-	-	8	42.1
Delayed payment of transport and travelling allowance	4	21.1	-	-
Inadequate transport and travelling allowance	4	21.1	8	42.1
Lack of competencies in new areas*	-	-	6	31.6
Inadequate training in new technologies			15	78.9
Lack of extension skills to transfer technologies to farmers	-	-	4	21.1
No uniforms for identification	-	-	4	21.1
Inability to take risk without allowance or insurance cover.	4	21.1	4	21.1
Difficulty in meeting farmers in groups	2	10.5	-	-
No means of transport	3	15.8	4	21.1
No free drugs and chemicals for demonstrations	1	5.3	-	-
Language barrier	1	5.3		
Those who said they had no problems	12	63.2		

\*Technical areas outside ones technical area before decentralization.

N = 19

Multiple responses

Source: field data

Municipal Director of Agriculture. The problems faced by the Municipal Director of Agriculture in performing his duties were listed as:

- Lack of sufficient district development officers.
- Lack of subject matter specialist backstopping.
- Formation of farmers' groups is not acceptable to farmers.
- Some stakeholders do not attend planning sessions.

Morale of extension agents

Approximately 95 %of the agricultural extension agents stated that they were not satisfied with their job in the decentralised structure while nearly 74% stated they did not experience job satisfaction in the old structure. The reasons given for lack of job satisfaction in Table 5.33 are lack of competence in general extension, poor working conditions, irregular and poorly done T&V training, lack of social respect for extension agents and their work and the use of extension agents for loan disbursement for which they lack skills and control. The figures in Table 5.33 suggest that lack of social respect for extension agent and their work is one of the most outstanding reasons for lack of job satisfaction among the extension agents. Nearly 68 % of the extension agents in the old structure and approximately 90% in the decentralised structure indicates it. The next most outstanding is poor working condition and nearly 58% of extension agents in the old regime and approximately 95% in the current regime state it.

**Table 5.33: Reasons from Agricultural Extension Agents for lack of job satisfaction**

Reasons	Departments of MOFA in the old structure						Decentralised Structure		
	DAES	CSD	PPM ED	WIAD	APD	VSD	Row total %	No.	%
Lack of competence for unified extension delivery	3		-	-	-	-	15.8	11	57.9
Poor working conditions*	-	3	2	-	1	5	57.9	18	94.7
T&V training is not regular and poorly done	-	-	-	-		-	-	17	89.5
Lack of social respect for extension agents and the work they do.	3	3	2	3	1	1	68.4	17	89.5
Extension agents are used in the disbursement of loans for which they lack skills and control	5		-	3	-	-	42.1	10	52.6

Source: field data

\* Poor working conditions include:

Lack of security in cases of sickness on the job  
Low salaries  
Delayed and inadequate transport and travelling allowance  
No properly defined job descriptions  
Inadequate supply of motorbikes and materials and equipment for work, no uniforms and protective clothing  
Over delayed promotions and  
Exposure to risks eg snakes bite, poisonous chemicals etc.

The Municipal Director of Agriculture stated that he was experiencing job satisfaction because his new position has opened him up to new challenges. Before decentralisation he was concerned with only one sector of agriculture in the ministry but now he is concerned with all the sectors of agriculture in the ministry.



## CHAPTER SIX

### DISCUSSION OF FINDINGS

#### **6.0. Introduction**

This chapter discusses the findings of the study. The discussion provides a comparative view of how extension delivery was performed in the old and decentralised structures. The discussion is done under three main sub-headings. These are:

- The ability of Ministry of Food and Agriculture to have technologies that meet the needs of farmers and solve their problems under its old and decentralised structures.
- The ability of Ministry of Food and Agriculture to equip its extension agents with knowledge and skills that they require for the job under its old and decentralised structures.
- The ability of Ministry of Food and Agriculture to ensure that farmers are reached on a timely and regular basis with technologies that they need under its old and decentralised structures.

#### **6.1. The ability of Ministry of Food and Agriculture to have technologies that meet the needs of farmers and solve their problems under its old and decentralised structures.**

The discussion under this heading covers four main areas. These are: sources of technologies for delivery, involvement in technology generation, nature of involvement in technology generation and ability to provide solutions to farmers' problems.

Sources of technologies for delivery. The findings show that sources of technologies for delivery in both the old and decentralised structures were through individual efforts and

institutional arrangement whereby Ministry of food and Agriculture source for technologies from research for its extension agents. In the old structure two procedures were used for sourcing the technologies. The Department of Agricultural Extension Services had researchers train Subject Matter Specialist who then train extension agents in the technologies received from researchers. The other departments organised the training for the extension agents directly using consultants. In the decentralised structure the Municipal Director of Agriculture organised the training using sometimes the Regional Training Officer or researchers from Research Institutes. Extension agents through their own efforts search for technologies in books in the old structure while in the decentralised structure the sources were books, crop research institute, universities, animal research institute, friends and farmers.

Technologies from the sources indicated might not always meet farmers' needs and solve their problems. Technologies from books are too general for addressing specific problems of farmers under different conditions. On the other hand technologies from research can address the needs and problems of farmers if the farmers were involved in the development of the technologies by taking their concerns into consideration in the development of the technologies.

Involvement in technology generation. The extension agents, the district officers, the Municipal Director of Agriculture and the farmers indicated their involvement in technology generation in both the old and decentralised structures. From their expressed views, it became clear that the nature of the division of work in the old structure allowed some departments to be involved in the process of technology generation by researcher while other departments did not. The Department of Agricultural extension services, Crop Services Department and

Women in Agricultural Development department were those involved in technology generation. Other departments like Veterinary Services, Policy planning Monitoring and Evaluation and Animal Production were not involved in technology generation.

These findings have implications for technology development and availability in the old structure. For example, researchers are more likely to develop technologies in crops because of the involvement of the Crops Services Department in technology generation than in the areas of animals because both the departments of Veterinary Services and Animal Production were not involved in technology generation.

In the decentralised structure departments of Ministry of Food and Agriculture were merged into a single department. The study also revealed that the extension agents performed different responsibilities from what they did in the old structure. All the respondents were not unanimous on their involvement in technology generation. In majority of the cases both extension agents and farmers claim that they were not involved in technology generation but the Municipal Director of Agriculture said the agricultural extension agents were involved. Findings on the responsibilities of extension agents in the decentralised structure compared to documented responsibilities for extension agents in the decentralised structure give an indication that the extension agents studied did not know their responsibilities well. This problem could be due to poor communication of responsibilities to extension agents thus suggesting a problem of role ambiguity. According to Mullins (1993) role ambiguity occurs when there is lack of clarity as to the precise requirement of a role and the person is not sure what to do. He further states that the problem could be due to poorly prescribed role

expectations or poor communication of the prescribed role. This would have effect on performance of work and extension delivery.

Nature of involvement in technology generation. In the old structure, the findings revealed that the departments that were involved in technology generation made different contributions to the technology generation process. While the frontline staff in the Department of Agricultural Extension Services and Women in Agricultural Development was found to be involved in identifying farmers' problems, giving feedback to research through Subject Matter Specialist and conducting mini-demonstrations, the Crop Services Department was only involved in conducting adaptive trials. These findings are contrary to the expectation of the unified system in the old structure. Crop Services Department, Veterinary Service Department and Animal Production Department along with other departments not found in the study area were to be designated Subject Matter Special departments. Their role was to provide technical backstopping and support to Subject Matter Specialist. In addition the departments were to be involved in planning and conducting adaptive trial activities in collaboration with researchers, their Subject Matter Specialist, extension officers and farmers so that farmers' felt needs can be taken care of (Ministerial Directive on the Unified Agricultural Extension, 1992). From the findings made, it is only the Crop Service Department that was involved in conducting adaptive trials and yet the relationship with agricultural extension was such that extension never got the full benefit of the researches conducted.

In the decentralised structure the views expressed are different. From the list of responsibilities of agricultural extension agents, only 5% of extension agents indicated they picked farmers problems and passed them on for solution. In addition only approximately 16

% of the extension agents stated being involved in adaptive trials. The nature of involvement in the technology generation process as well as the percentage of extension agents involved is an indication that the research process leading to the development of technologies in the decentralised structure was dominated by research. Although the involvement of the Department of Agricultural Extension Services in technology development in the old structure looks better than that of the decentralised structure, the dominance of the research process by researchers was still evident. Contributions from users of the technologies in both regimes were minimal. According to Merrill-Sands et al (1989) research institutions that have direct links with farmers and technology transfer workers ensure that research focuses on their priorities and problems. It is thus important that all users of technology be involved in the generation process. This will bring about balance in outcomes to satisfy the interest of both researchers and users or technologies.

Ability to provide solutions to farmers' problems. The essence of all extension work is to improve the standard of living of farmers and their families (Maunder, 1972 and Oakley & Garforth, 1985). This can be achieved if extension agents are able to identify farmers' problems and provide solutions to them. The views of extension agents in the old structure and extension agents and farmers in the decentralised structure suggest that extension agents were not able to provide solutions to farmers' problems most of the time, although in the decentralised structure there was an indication of a good relationship between farmers and extension agents. In the old structure indications from the findings suggest that apart from problems in the area of plant diseases, agricultural extension agents in most cases for problems in the areas of inputs, marketing and technical backstopping were not able to provide solutions to problems identified. The story is not different for agricultural extension

agents in the decentralised structure and for the farmers too, since the views of farmers suggest that majority of them did not find the extension messages received useful. This means those extension agents' sources of extension messages to farmers did not adequately address the problems and needs of farmers.

The inability of extension agents to provide solutions to farmers' problems can be associated with farmers' involvement in planning. In the old structure compared to the decentralised structure, the expressed views of agricultural extension agents on farmers' involvement in planning showed that more agricultural extension agents involved farmers in planning in the old structure than in the decentralised structure. The farmers were involved in needs and problems assessment and in fixing meeting days and time. The expressed views of district officers indicated that the Department of Agricultural Extension Services was the only department in the old structure that involved farmers in planning. All the other departments did not involve farmers. The results from the study have shown that those extension agents who involved farmers in problems' and needs assessment were also those in the majority who had their farmers accept their solutions. Similarly those extension agents who did not involve farmers in problems and needs assessment were also those in the majority who did not have their farmers accept their solutions. This suggests that extension agents in the old structure were more likely to provide acceptable solutions to farmers' problems than in the decentralised structure.

**6.2. The ability of Ministry of Food and Agriculture to equip agricultural extension agents with knowledge they require for the job under the old and decentralised structures.**

The expressed views of agricultural extension agents, district officers and the Municipal Director of Agriculture indicated that training provided by Ministry of Food and Agriculture

to its extension agents in both regimes equipped the Agricultural extension agents with technologies. According to Cristovao, Koehnen and Portela (1997) extension staff frequently lack skills to work with rural people in an interactive manner because their pre-training is narrow and focus on the acquisition of technical knowledge and abilities. Therefore there is a need for in-service training for extension workers to sharpen their skills for efficient and effective work with rural people. In-service training for extension agents should emphasize actual field experience and emerging new technologies (Vijayaragavan and Singh, 1997).

In the study the chain of command in the old structure did not show any hindrance to the acquisition of knowledge by agricultural extension agents. Findings indicated that agricultural extension agents received training and the training was useful for their work. In the decentralised structure, the Municipal Director of Agriculture had as part of his responsibilities to ensure that agricultural extension agents receive training and technical backstopping (MOFA handbook on decentralisation, 1998). Findings from the study suggest that the Municipal Director of Agriculture did not know that he was responsible for ensuring that agricultural extension agents receive training and technical backstopping since he did not state this as one of his responsibilities. The lack of awareness that providing training to extension agents was the responsibility of the Municipal Director of Agriculture could have contributed to the manner in which the Municipal Agricultural Development Unit handled training issues. Training was provided once in a while instead of monthly.

The training topics considered in both regimes for a period of one year revealed that the training given was all in technologies. This suggests that agricultural extension agents never received training in actual field experience. A lack of or inadequate in-service training for

agricultural extension agents in skills for working with rural people will make them ill-equipped for their job.

Usefulness of training to extension agents. Extension agents expressed a unanimous view that the training provided in the old structure was useful to them. In all the cases extension agents stated that the training sharpened their skills while some of the cases indicated that the training provided solutions to farmers' problems. In-service training in the old structure was done on departmental basis. Thus it was possible for some departments to provide solutions to farmers' problems while others did not.

In the decentralised structure, for a majority of the cases extension agents thought that the T&V training provided was less useful to them because it lacked practical training and all was theory. Agricultural extension agents coming from different technical backgrounds in the old structure into the decentralised structure would have been better off if the training was made practical to equip them with both knowledge and skills. An extension agent needs to be confident in himself/herself to be able to work effectively (Oakley & Garforth, 1985). Confidence can be achieved if the extension agent can master the knowledge and skills required for the job.

### **6.3. Ability of Ministry of Food and Agriculture to ensure that farmers are reached on a timely and regular basis with technologies that they need under its old and decentralised structures.**

The discussion under this heading is done under the sub-headings methods used in extension delivery, timeliness of extension messages to farmers, problems with delivery and working conditions of extension agents.

Methods used in extension delivery. Agricultural extension agents were unanimous on the use of individual and group contact methods in both regimes. The extension methods commonly used in both regimes were farm and home visits, group meetings, results and method demonstrations. Office calls and field trips were the least used in the old structure but in the decentralised structure the use of office calls had improved while field trips were non-existent. The improved use of office calls can be attributed to the availability of the poverty alleviation fund and the social investment fund for loan to farmers for which the farmers came to the office to seek. On the other hand field trips were no longer in use in the decentralised structure because extension agents in Women in Agricultural Development department used field trips to train women leaders in farmer demonstration homes that were no longer in use.

The expressed views of farmers and district officers confirmed the methods used by extension agents in extension delivery in both regimes. A further revelation from the study showed that majority of the farmers had cordial relationship with the extension agents, a necessary condition for successful individual and group contacts with farmers. According to Van Den Ban and Hawkins (1988) and Oakley and Garforth (1985) learning is more on an individual basis and by adopting a group method many farmers can be reached. These suggest that the extension agents are knowledgeable in extension methods and their choice of individual and group contact methods in both regimes were appropriate for farmers to be able to acquire new information and also for many farmers to be reached.

On the methods used in teaching, majority of the extension agents indicated demonstrations while a majority of the farmers stated talking only as the means through which information

was passed on to them in the decentralised structure. A noted hindrance to the successful use of demonstrations in the decentralised structure was the expressed lack of materials and equipment for demonstrations by a majority of the extension agents. Also only a small percentage of the farmers stated that extension agents used visual aids in passing on messages to them. Without practical demonstrations learning could be a problem for the farmers because Oakley and Garforth (1985) state that a new idea is better learnt through practice.

Timeliness of extension messages to farmers. Farmers were not unanimous in their expressed views on the timeliness of messages received from extension agents. It was found that those farmers who found messages useful also said they were timely. Thus suggesting that messages that are timely can be used by farmers and are therefore considered useful. Majority of the farmers practising inter-cropping did not find the messages timely and therefore considered them not useful. This suggests that the T&V approach to extension delivery being used posed difficulties in the provision of timely messages to farmers practising inter-cropping. This is because T&V focus on one message at a time while mixed farming and inter-cropping requires more than a message at a time. The fish smokers who were into one kind of activity all said the messages were timely and useful to them.

Findings on field visits in the old structure show that there was frequent interaction with farmers indicated by a majority of the agricultural extension agents. Field visits are useful in technology transfer and adoption. Variations in frequency of visits existed within the departments and also between the departments. The variations between the departments could be due to differences in resource availability among the departments and may be the kind of new information being taken to farmers. For example if the message is simple to understand

little interaction with the farmers will be needed for them to be able to acquire the new information and vice versa. The difference in messages and how they were packaged for farmers in the old structure was related to the department in which that agricultural extension agent belonged.

Findings on field visits in the decentralised structure indicated that agricultural extension agents varied in the frequency of field visits. Expressed views from both farmers and extension agents are that field visits were frequent. The frequency of visits ranged from once a month to four times in a week. Since both farmers and extension agents consider the field visits to be frequent, the only explanation for the variations in visits can be attributed to differences in the ability to learn by individuals. The farmers studied had different levels of education. According to Onu (1991) education is an important factor in influencing the acceptance of new information by farmers. Thus it can be said that the frequency of visits to ensure acceptance of extension messages was influenced by the differences in the level of education of the farmers.

Problems with delivery. The nature of division of work in the old structure affected extension delivery in terms of efficient use of resources on the part of the Ministry of Food and Agriculture. This is because of the number of extension agents visiting a single farmer with new information due to the number of departments that were involved in extension. Apart from not being cost effective, different extension agents scheduling meeting times with the same farmers will be taking much of their time required for work. This is even more serious because agriculture in Ghana is rain fed and timeliness is very essential. Therefore any action

or actions that delays the farmers' operations are detrimental to him/her making the acquisition of knowledge negligible.

In the decentralised structure there was a merger of the departments of the old structure into an Agricultural Development Unit. This solved the problem of cost inefficiency that characterised extension delivery in the old structure. However the expressed views of majority of the extension agents indicated lack of technologies for delivery. These were consistent with farmers' views on agricultural extension agents' responsibilities when only 20 % of the farmers stated that extension agents introduced new technologies to them. In addition nearly 8% of the farmers stated that extension agents provided solutions to their problems. This means that 92% of farmers did not receive any new technologies from extension agents. Agricultural extension agents were to be given T&V training in new technologies as well as technical backstopping from Subject Matter Specialists. However the study revealed that these were not performed as expected. T&V training was provided once in a while and Subject Matter Specialist backstopping was completely lacking. Thus suggesting the possible reasons why extension agents lacked technologies for delivery.

In the old structure the chain of command was unique to the departments that existed in the study area. This affected planning. Some departments had their plans being influenced by their national departments while others did not. The result was different departments working at cross-purpose to each other instead of towards a common purpose which the unified extension system sought to achieve. Farmers were faced with several extension agents introducing technologies to them.

In the decentralised structure, the Municipal Agricultural Development Unit had authority to plan its own activities but the plan was derived from the national plan or strategic plan. This ensures that the Municipal Agricultural Development Unit contributes to achieving the purpose of the organisation. This was missing in the old structure. A few farmers were involved in the planning process, thus suggesting that the planning process in the decentralised structure attempted both at meeting the needs of the organisation and clientele.

A limiting factor of the chain of command in the decentralised structure for knowledge acquisition by farmers was that the Director of Agriculture had to satisfy two superiors, the municipal chief executive and the regional director of agriculture in the performance of his duties, which violates the unity of command principle and made him less effective. The effect was that T&V training, which was a source of technologies for agricultural extension agents suffered (the training was not provided on schedule), with the result that agricultural extension agents were not well equipped with technologies for farmers.

Working conditions of extension agents. The ability of an organization to provide good working conditions for its staff is a step in the right direction for promoting performance. According to Herzberg (1966) cited in Hess and Siciliano (1996) if any of the conditions listed as either hygiene factors or motivators are not met in an organization, performance will suffer. Expressed views of extension in both the old and decentralized structures suggest that condition under which they worked were not satisfactory to them. Majority of the extension agents listed thing like low salaries, lack of security in cases of sickness on the job, inadequate transport and traveling allowance, no proper job descriptions, in adequate supply of motorbikes and materials and equipment for work, over delayed promotion, exposures to

risks and lack of protective clothing as poor working conditions. One other factor that majority of the extension agents indicated as contributing to their lack of job satisfaction is lack of social respect for extension agents and the work they do. These suggest that those extension agents were experiencing low morale and therefore low performance in their duties. The condition was more in the decentralized structure than in the old structure.

In both regimes appropriate methods were used to ensure that farmers were reached. Field visits were also frequent in both regimes and it was found that timeliness of messages delivered made them either useful or not useful. Messages that were delivered on a timely basis could be use by farmers and therefore were considered useful. Farmers who were into inter-cropping always found the extension messages not timely and therefore not useful, suggesting that the T&V extension delivery was not effective with farmers growing more than one crop at a time. The availability of technologies for delivery was however different for the two regimes. In the old structure agricultural extension agents had access to technologies for delivery better than in the decentralized structure were new technologies for delivery were not always available.

## CHAPTER SEVEN

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### **7.0. Introduction**

In this chapter the summary, conclusion and recommendations from the research are presented. These will be discussed under the following headings:

Purpose of research

Procedure

Findings

Implication of findings

Recommendations and

Suggestions for further studies

#### **7.1. Purpose of research**

The need to improve extension delivery to farmers in Ghana has led to several structural changes within the organisation of Ministry of Food and Agriculture. In addition the T&V approach to extension delivery and a Unified Extension System were introduced. However the need to reach farmers with technologies continues to persist because of the important role agriculture plays in the economy. It is in the light of this that the research sought to find out what effects the decentralised administrative structure of the Ministry of Food and Agriculture have made on extension delivery. To assist in the investigation, the following objectives were addressed:

1. To determine how effectively the decentralized administrative structure of MOFA is adequately equipped with the technologies that farmers need.

2. To determine how effectively the decentralized administrative structure of MOFA is equipping agricultural extension agents with technologies that farmers need.
3. To determine how effectively the decentralized administrative structure of MOFA is ensuring that its agricultural extension agents reach out to farmers with technologies that they need on a timely and regular basis.

## **7.2. Procedure**

The study was conducted in the Tema municipality of the Greater Accra region of Ghana. There is pressure on land in this area making the need for technologies very crucial in order to increase production.

The design for the study follows the case study approach. The concentration was on the administrative processes that may be crucial to the success or failure of extension delivery in the decentralised administrative structure of Ministry of Food and Agriculture. The sample for the study was sixty-five respondents. These were made up of farmers who are in contact with extension agents, agricultural extension agents of the Municipal Agricultural Development Unit who work with farmers by taking to them agricultural information as well as new technologies in agriculture and the Municipal Director of Agriculture. Others were the Municipal Chief Executive and members of the development sub-committee of the municipal assembly.

Apart from the forty farmers who were selected using purposive sampling, the total population in each target group was used because the numbers involved were small. The data



was analysed using univariate and bivariate techniques such as frequencies, percentages and cross tabulation.

### **7.3. Findings**

Before decentralisation, the Ministry of Food and Agriculture operated several departments in the Tema municipality. These were Crop Services Department, Veterinary Services Department, Animal Production Department, Department of Agricultural Extension services, Policy Planning Monitoring and Evaluation Department and Women in Agricultural Development representing the departments of the respondents. Among these some were involved in technology generation indicated by 58% of the agricultural extension agents while others were not. Those involved in technology generation were from Crop Services Department, Department of Agricultural Extension services and Women in Agricultural Development. In addition 42% of agricultural extension agents stated that they involved farmers in problems and needs assessment. On the sourcing of technologies majority (89.5%) of the agricultural extension agents did not source for technologies outside Ministry of Food and Agriculture. According to them the technologies provided within Ministry of Food and Agriculture meet their field needs. Farmers the users of the technologies were found to be involved in the technology generation process by a majority of 64% of the agricultural extension agents who were involved in the technology generation process.

In the decentralised structure there was only one department at Tema municipality representing the Ministry of Food and Agriculture. To this department and others similar to it was devolved all extension activities of the Ministry of Food and Agriculture. Interestingly, the study found out that approximately 79% of the agricultural extension agents were no

longer involved in the technology generation process under the decentralised structure, although the Municipal Director of Agriculture stated that it was the agricultural extension agents and the development officers who were involved. Approximately 32% of the agricultural extension agents indicated involving farmers in problems and needs assessment, which was found to consistent with an equally low of 33% of farmers indicating that their extension agents involved them in problems, and needs assessment. A majority (58%) of the agricultural extension did not source for technologies outside the Ministry of Food and Agriculture. Their reasons were that some did not know other sources while others stated funds were not available for sourcing technologies. The minority (42%) who source for technologies outside Ministry of Food and Agriculture gave various sources such as books, Crop Research Institute, universities, friends and farmers.

Agricultural extension agents were equipped with technologies for delivery before decentralisation through training. The training was organised differently according to the departments involved. Approximately 42% of the agricultural extension agents stated receiving T&V training while 58% indicated yearly training. These training according to all the agricultural extension agents were useful because they provided the knowledge and skills required for their work. In addition 68% stated that the training provided technologies and solutions to farmers' problems.

In the decentralised structure it was found in the study that all the agricultural extension agents depended on T&V training for technologies for delivery. Others used additional sources such as previous knowledge indicated by 47% of extension agents, Animal Research Institute and colleagues. In addition the study revealed that the T&V training was organised

once a while indicated by approximately 79% of the extension agents and was considered less useful because it was all theory without practice stated by approximately 58% of the extension agents. The Municipal Director of Agriculture stated that he did not receive any training upon assuming office and listed his training needs as computer skills, financial management and agricultural administration.

Before decentralisation the Ministry of Food and Agriculture was in a better position than now to disseminate technologies to farmers that were likely to meet the needs of farmers because of some level of extension agents and farmer involvement in technology generation. The study revealed that 58 % of extension agents were involved in technology generation while 42% stated that they involved farmers in planning through problem and needs assessment. In addition 64% out of the 58% of extension agents who were involved in technology generation indicated they identified farmers' problems as part of their involvement. Different departments existed and some of them apart from PPMED performed extension services, which together covered all aspects of agriculture. Apart from having the required technologies generated extension agents needed to be equipped with the technologies and the skills for delivery. The study revealed that all the extension agents received some form of training in new technologies but not in practical field experience. Approximately 58% received yearly training while 42% received T&V training. On its usefulness 32% stated that it sharpened their skills and improved their performance while 68% stated it improves their skills and provide new technologies and solutions to farmers' problems. Apart from having the required technologies and equipping extension agents with them, the ability of the extension agent to use the right extension methods as well as available resources for the work and the morale of the extension agent are crucial for successful dissemination of technologies.

The study revealed that all the extension agents used individual and group contact methods such as demonstrations and farm visits indicated by approximately 90% of the extension agents in each case and home visits 47%. A majority of 63% had no problems associated with their work in the old structure only 37% indicated various problems such as inadequate and delayed payment of transport and travelling allowance no means of transport and difficulty in meeting farmers in groups. Field visits were found to be frequent (1-4 times per week) indicated by 74% of the extension agents. Twenty-one percent carried out field visits fortnightly while 5% did so once in a month.

The study revealed that agricultural extension agents were able to identify five problems of farmers before decentralisation. Approximately 32% of extension agents identified diseases in onion among their farmers, 42% identified high cost of inputs, 37% difficulty in accessing tractor services, lack of access to credit facilities was by 47% of the extension agents and 42% poor yields. On the ability to provide solutions to the problems the study revealed that extension agents were able to provide more partial solutions than complete solutions. Only the problem of diseases in onion that majority of extension agents involved provided complete solution. Considering all the cases more extension agents provided solutions than those who did not provide solutions under the old regime. On the acceptance of the solutions by their farmers, many of the extension agents had their farmers accept their solutions than those who did not.

The morale of staff was found to be low. The findings show that 74% of the extension agents were not satisfied with their job. Many reasons were given such as poor working conditions used to classify low salaries, lack of security in cases of sickness on the job, delayed and

inadequate transport and travelling allowance, no properly defined job descriptions, inadequate supply of motorbikes and materials and equipment for work, no uniforms and protective clothing, over delayed promotions and exposure to risks e.g. snakes bite, poisonous chemicals etc indicated by 58% of the extension agents. Lack of competence for unified extension indicated by approximately 16%, lack of social respect for extension agents and the work they do stated by 68% of the extension agents and extension agents are used in loan disbursement for which they lack skills and control stated by 42%.

In the decentralised structure, the Ministry of Food and Agriculture is not likely to be able to reach out to farmers with technologies that meet the needs of farmers. The study revealed that approximately 79% of extension agents were not involved in technology generation. Only 37% of farmers were involved in testing new technologies and 75% out of 21% of extension agents involved in technology generation identified farmers' problems as a part of their involvement in the technology generation process. Training of extension agents in the knowledge and skills required for their work were irregular as revealed in the study by approximately 79% of the extension agents. On the usefulness of the training 58% of the extension agents stated that theory without practice made the training less useful while 42% said it improved their skills and performance.

The ability of the extension agent to use the right extension methods as well as available resources for the work and the morale of the extension agent are important in dissemination of technologies. The study revealed that extension methods and mode of contacting farmers had not changed much in the decentralised structure. All the extension agents used individual and group contact for reaching out to farmers. Extension methods used were found to be farm

visits indicated by approximately 90% of the extension agents, result and method demonstration 84%, home visits 10% while all extension agents used group meetings. The number of extension agents who use home visits before decentralisation reduced from 47% to 10% in the decentralised structure. On the other hand office calls increased from 10% to 21% in the decentralised structure.

In the study agricultural extension agents indicated both resource and non-resource related problems that affected their work under the decentralised structure. The results indicate that 42% of extension agents lacked adequate materials and equipment for demonstration and adequate transport and travelling allowance while 21% had no means of transport and uniforms for identification. In addition 79% of the extension agents indicated inadequate training in new technologies, 32% lack of competencies in new areas and 21% lack skill to transfer technologies. The study also revealed that the Municipal Director of Agriculture had some problems that could affect the work of the extension agents. These are lack of sufficient development officers for the Municipal agricultural development Unit, lack of Subject Matter Specialist backstopping and formation of farmers' groups is not acceptable to farmers.

The study revealed that there were variations in field visits among the extension agents. Approximately 42% of the extension agents when on field visit fortnightly, 10% monthly and approximately 37% made field visits between once and four times a weeks. The results from farmer respondents indicated that extension agents visited 35% of them six times in a month, 30% indicated three times in a month 20% stated eight times in a month and approximately 3% stated four times in a month. With this frequency in field visits 70% of the farmers interviewed were satisfied, 23 % stated that they would like more visits to discuss their

problems while 7% remained indifferent. The Municipal Director of Agriculture stated that he ensured extension agents were supervised.

It was found in the study that agricultural extension agents were able to identify six problems of farmers. These include diseases in onion indicated by approximately 10% of the extension agents, high cost of inputs 37%, lack of access to credit 42%, difficulty in getting farmland 68%, low prices for farm produce 58% and high interest rates 37%. The study revealed that apart from diseases in onion and lack of access to credit facilities, in all cases of the problems identified, only few extension agents were able to provide solutions the majority could not. For example 68% of extension agents identified the problem of difficulty in acquiring land 10% gave partial solutions while 58% had no solutions. Similarly 37% of extension agents identified the problem of high cost of inputs 16% provided partial solutions and 21% had no solution.

Findings on the acceptance of the solution provided indicated that majority of the extension who provided solutions had their solutions accepted by their farmers. Results obtained from farmers interview also indicate that 30% of the farmers always liked the way extension agents presented information to them while 70% stated that they sometimes. On the method used 75% of the farmers stated that presentation of messages was by talking only. In addition 25% of the farmers indicated they had very cordial relationships with their extension agent while 75% had cordial relationship with their extension agent. On the timeliness with which messages are received, farmers' views were that messages that were timely could be and therefore were considered useful. Messages that were not timely could not be use and therefore were considered not useful.

The morale of staff in the decentralised structure was found to be low. This was revealed by 95% of the extension agents who stated they were not satisfied with their job. Some of the reasons given for lack of job satisfaction include lack of competencies for unified extension indicated by approximately 58% of the extension agents. Poor working conditions stated by approximately 95% of the extension agents include low salaries, lack of security in cases of sickness on the job, delayed and inadequate transport and travelling allowance, no properly defined job descriptions, inadequate supply of motorbikes and materials and equipment for work, no uniforms and protective clothing, over delayed promotions and exposure to risks eg snakes bite, poisonous chemicals etc. Irregular and poorly done T&V training and lack of social respect for the extension agent and the work he/she does stated by nearly 90%. Approximately 53% stated that they are used in the disbursement of loans for which they lack skills and control.

#### **7.4. Implication of findings**

The main source of technologies for delivery in the Ministry of Food and Agriculture in both the old and decentralised structures has been from research institutes. Therefore the Ministry of Food and Agriculture has been involved in the technology generation process of the research institutes to some extent. The study revealed that not all the departments in the old structure were involved in the technology generation process and even those departments involved only made minimal inputs. With the introduction of the decentralised structure of the Ministry of Food and Agriculture, the technology generation process that involved both farmers and extension agents but did not cover all the departments that exist then, deteriorated. Research was seen to dominate the whole research agenda. Considering that the main source of technologies to Ministry of Food and Agriculture in both regimes was research

institutes, it is not possible for the Ministry of Food and Agriculture to have technologies that meet the needs of its farmers in the decentralised structure without the involvement of the users of the technologies in the technology development process in the same period.

The study revealed that the Ministry of Food and Agriculture equipped its extension agents with technologies in both regimes. It further revealed that extension agents did not receive training in practical field experience in both regimes. The training provided was regular and considered useful in the old regime than in the decentralised structure where extension agents thought that the training they received in new technologies was all theory and therefore not useful to them. These revelations therefore suggest that the decentralised structure was not effective in equipping extension agents with knowledge and skills for their job.

In both regimes the study revealed that extension agents used appropriate extension methods in the delivery of messages. In addition field visits were frequent and farmers in the decentralised structure had cordial relationship with extension agents. A hindrance to the Ministry of Food and Agriculture's ability to reach farmers on a timely basis with technologies in both regimes was the T&V extension which did not suit farmers growing several crops at a time. In addition to this there was lack of new technologies for delivery in the decentralised structure.

From the findings and results of the study, the decentralised administrative structure has not improved the delivery of extension services to farmers in the study.



## **7.5. Recommendations**

From the findings of the study the following recommendations are made

1. Technology, the main product of an extension organisation must be demanded by its target population for it to achieve performance. It is in the light of this that the researcher recommends that the technology generation process that existed with the Department of Agricultural Extension Services and the Crop Services Department before decentralisation be revisited such that all technical directorates and farmers will be able to make adequate input into the development of new technologies so research alone does not determine the research agenda.
2. For extension agents to be effective they need both knowledge and skills in rural life and practical field experience and not just new technologies. It is therefore recommended that all in-service for extension agents should always include aspects of agricultural extension and rural sociology.
3. For the District Director of Agriculture to be able to perform his role well, he will require knowledge and skills in extension education and rural sociology and not only in management and administration. It is therefore recommended that the District Director of Agriculture be given regular training in extension education and rural development to assist them in their work.
4. Morale of staff is an important factor in terms of attitude to work and performance. The study found out that the morale of extension agents was low. The researcher recommends that the morale of extension agents in the Ministry of Food and Agriculture be critically examined and issues identified appropriately addressed. This is because extension agents form the bridge between MOFA and farmers and any thing that hinder their performance directly or indirectly impinges on the total performance of MOFA.

5. From the farmers problems identified in the study, new production technologies alone cannot meet adequately the current needs of farmers. It is therefore suggested that the development of technologies go beyond production to include current needs of farmers outside production.
6. The findings from the study supports findings in earlier studies that the T&V extension delivery approach is not timely in the provision messages to farmers who grow several crops at a time. It is recommended that the current T&V being used be modified or an alternative extension approach to delivery be considered.

#### **7.6. Suggestion for further studies**

The study needs to be replicated with a much bigger sample to include many districts and the whole organisational structure. This will help to throw more light on the topic.

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## Appendix 1

### SOURCES OF SECONDARY DATA AND ADMINISTRATIVE INFORMATION.

#### List of personalities contacted.

- Some formal district officers with the Ministry of Food and Agriculture at Tema.
- National director of extension and some senior officers at the directorate of extension services.
- Regional training officer for the Regional Agricultural Development Unit of Greater Accra region.
- Administrators at the head office of Ministry of Food and Agriculture and
- Some staff of Policy Planning Monitoring and Evaluation Department at head office.

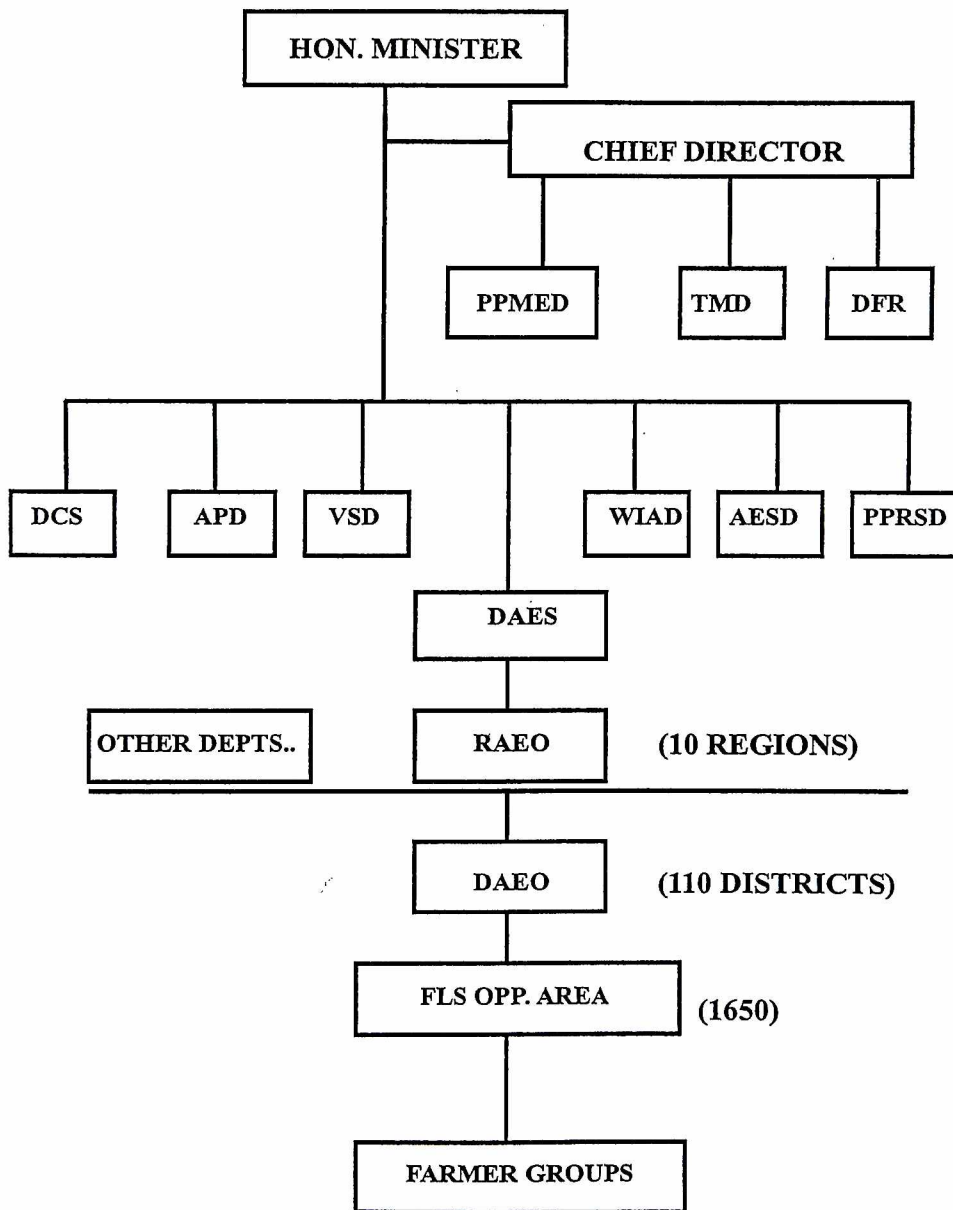
#### List of documents and report consulted.

- Management review of the ministry of agriculture established under a decentralised unified extension system.
- Medium term agricultural development programme (MTADP)
- Current organisational chart of MOFA
- Ministerial directive on the unified agricultural extension under the national agricultural extension project of the medium term agricultural development programme (MTADP)
- Agricultural extension policy: directorate of agricultural extension
- Strategic plan of MOFA
- Agricultural services sector investment programme
- Accelerated agricultural growth and development strategy in support of Ghana's vision 2020.

- Some RELC reports from some of the zones.
- MOFA's handbook on decentralization
- Job descriptions for district directors and agricultural extension agents.
- The policy of decentralization, evolving role of the ministry of food and agriculture. Case study of Ghana.
- Impact evaluation of the national agricultural extension project (NAEP).

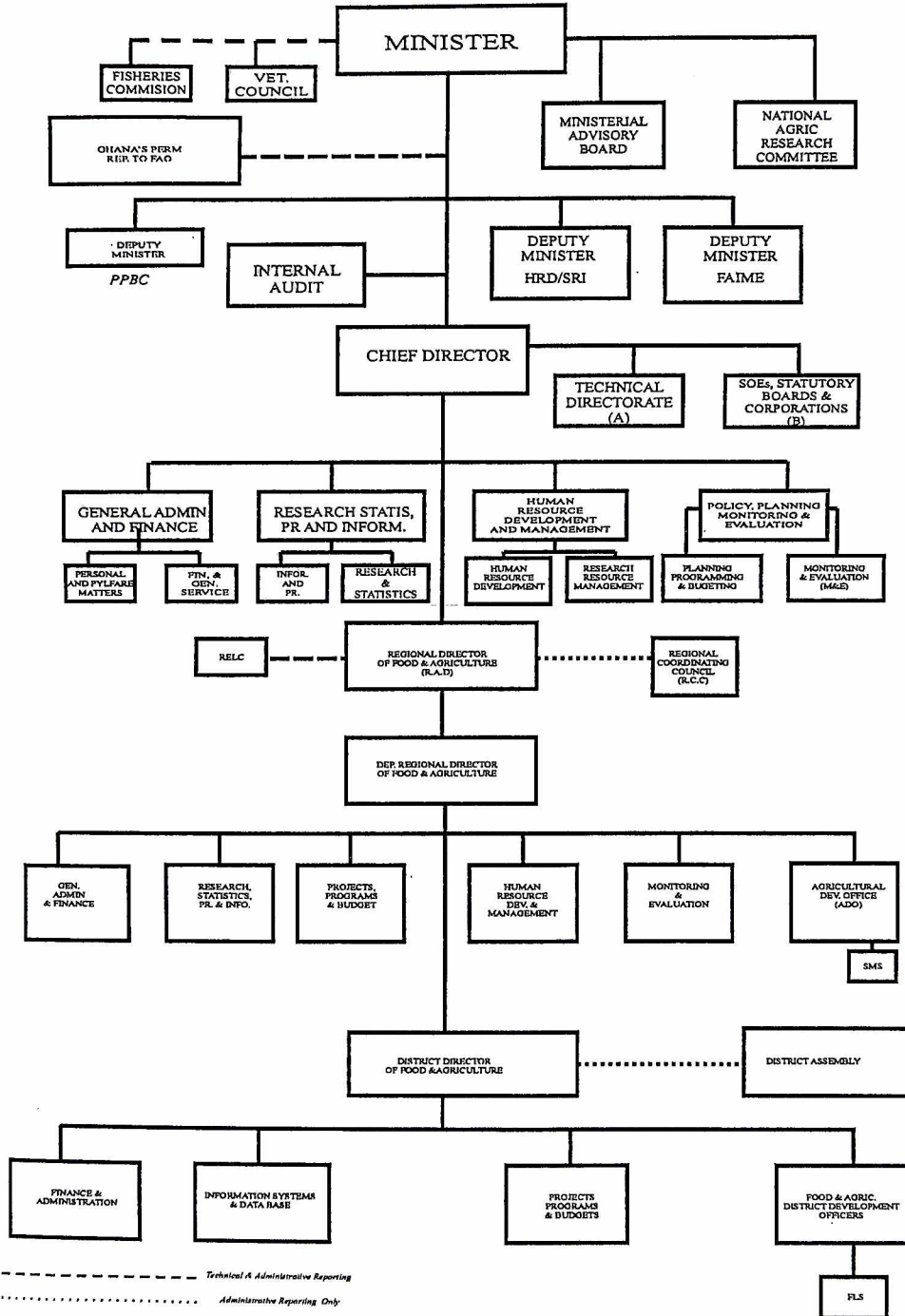
# APPENDIX 2A

## SIMPLIFIED ORGANIZATIONAL STRUCTURE OF MINISTRY OF FOOD AND AGRICULTURE



# APPENDIX 2B

## THE NEW ORGANOGRAM OF MOFA



Ratio 1:8

32 Annex

**Appendix 3A**

**QUESTIONNAIRE ON THE IMPACT OF DECENTRALIZED MINISTRY OF FOOD  
AND AGRICULTURE ON EXTENSION DELIVERY**

**A STUDY OF TEMA MUNICIPALITY IN THE GREATER ACCRA REGION**

TO BE ADMINISTERED TO: Municipal Director of Agriculture

PURPOSE OF STUDY: This study is to enable me prepare and submit a thesis to the Department of Agricultural Extension, Faculty of Agriculture, University of Ghana, Legon in partial fulfilment of requirements for M.phil. degree in Agricultural Extension

Please kindly answer the questions below and be sure that your responses will be treated in confidence.

Questionnaire number:-----

Name of respondent (optional):-----

Town /village:-----

**A. PERSONAL INFORMATION**

1. Sex:-----
2. Educational qualification :-----
3. Professional status:-----
4. Years of working experience:-----
5. Your department before decentralization :-----
6. Status before decentralization:-----

**B. KNOWLEDGE GENERATION.**

7. Are you in any way involved now in the generation of technologies for your district?-

A. Yes [ ]                      B. No [ ]

8. If no who are involved? Name them.-----

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-----

9. If yes describe your involvement:-----

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10. Is your involvement the same as what existed before your appointment as district director?

A. Yes [ ]

B. No [ ]

11. If no state what the involvement was before your appointment and indicate any difference(s).-----

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12. List up to ten major agricultural technologies that were introduced to farmers in your district during the NAEP period prior to decentralization of MOFA and indicate their sources.

Technical areas	Technologies introduced	Major sources



13. Comparing the decentralization period to the NAEP period have the sources of technologies changed? A. Yes [ ] B.No [ ]

14. If yes what are the new sources of technologies?

Technology	Sources.

15. Does your district source for technologies outside MOFA?

A. Yes [ ] B. No [ ]

16. If yes explain the procedure involved -----  
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-----

17. If no why?-----  
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-----

18. Did your district source for technologies outside MOFA during the NAEP period

A. Yes [ ] B. No [ ]

19. If yes indicate the procedure involved.-----  
-----  
-----

20. If no why?-----  
-----  
-----

21. Do you source for technologies from within MOFA during NAEP and the decentralization period? Indication yes or no in correct column below.

DURING NAEP	DURING DECENTRALIZATION.

22. Explain your answer to Q.21 for the NAEP and decentralization periods.

During NAEP-----  
-----  
-----

During decentralization -----  
-----  
-----

23. If you answered yes for any period in Q. 21 describe the procedure put in place for sourcing technologies from within MOFA.

During NAEP-----  
-----  
-----

During decentralization.-----  
-----  
-----

24. If before and during decentralization you source for technologies within MOFA, is there any difference(s) between the procedure used?

- A . Yes [ ] B. No [ ]

25. If yes state the differences.-----  
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PROBLEMS OF MUNICIPAL DIRECTOR / KNOWLEDGE REQUIED BY MUNICIPAL  
DIRECTOR OF AGRICULTURE

26. What are your problems as a district director of Agriculture in-charge of extension activities in your district?-----  
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27. Did you receive training on your appointment as district director of agriculture?

- A. Yes [ ] B. No [ ]

28. If yes list the topics covered in your training.-----  
-----  
-----

29. Have you received any other training since becoming a district director of Agriculture?

- A. Yes [ ] B. No [ ]

30. If yes indicate the type of training and the training topics.-----  
-----  
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31. If your answer to Q. 29 is yes , where you involved in determining the training?

A. Yes [ ]

B. No [ ]

32. If no did the training meet your needs? Explain.-----

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33. Are you able to assist your AEAs in their extension work?

A. Yes [ ]

B. No [ ]

34. If no why?-----

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35. If yes explain how you are able to assist them. -----

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36. Name five major extension problems of your AEAs and how you assisted them to solve these problems.-----

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STRUCTURE: Chain of command (planning, supervision, decision-making and control); division of work (responsibilities) and co-ordination of effort (meetings organised to ensure all flow together).

CHAIN OF COMMAND - PLANNING.

37. Did the district have goals: During NAEP?-----

During decentralization.?-----

38. How did you arrive at these goals?-During NAEP -----  
-----  
-----During  
decentralization-----  
-----  
-----

39. Who are involved in setting goals for your district? During NAEP -----  
-----During  
decentralization -----  
-----

40. Who determines the indicators /standards of goal attainment?  
During NAEP -----  
-----During  
decentralization-----  
-----  
-----

41. Are you as a district director involved in the setting of standards /indicator s of goal attainment? A. Yes [ ] B. No [ ]

42. If yes explain your involvement -----  
-----If no  
why?-----  
-----  
-----

43. During the NAEP period was you involved in setting standards / indicators of goal attainment? A. Yes [ ] B. No [ ]

44. If no why?-----  
-----

45. If yes explain your involvement.-----  
-----

46. During the NAEP and decentralisation periods what strategies did you adopt for achieving district goals and objectives?

NAEP period-----  
-----

Decentralisation period-----  
-----  
-----

47. Who were involved in the programme planning?

Those involved	What they do

48. Have the process of programme planning changed in the decentralization period?

A. Yes [ ] B. No [ ]

49. If yes indicate the new process of planning your programmes?-----  
-----

50. Identify those involved in the new process of planning and what they do.

Those involved	What they do

51. How would you describe the type of planning you had in the two periods with regards to your work?

A. Planning during NAEP period is better than the decentralization period. [ ]

B. Decentralization planning is better than NAEP planning. [ ]

C. There is no difference between the two periods. [ ]

CHAIN OF COMMAND – SUPERVISION

52. How many supervisors did/do you have in your district?

During NAEP-----

During decentralization -----

53. How many extension agents does each supervisor supervise?

During NAEP -----

During decentralization -----

54. How often does a supervisor visit each extension agent on the field on the average?

During NAEP -----

During decentralization -----

55. If there is any difference (s) in your answer to Q. 54 explain?-----

-----  
-----  
-----

56. What activities does a supervisor do to ensure that those supervised accomplish their jobs?

During NAEP-----

-----

During decentralization -----

-----

57. Who supervised the district extension officers during the NAEP period and what did it entail?-----

-----

58. During the decentralization of MOFA who supervises the municipal director of agriculture and what do they do?

Title of supervisor	What he/she does as a supervisor

59. Is there any difference(s) between the kind of supervision given to municipal heads during the NAEP and decentralisation periods? A. Yes [ ] B.No. [ ]

60. If yes state the differences -----

-----

CHAIN OF COMMAND – MANAGEMENT CONTROL

61. Who are involved in the monitoring of activities in the municipality?

During NAEP-----

-----

During decentralization -----

-----

62. Is municipal head involved in the monitoring?

During NAEP----- A. Yes [ ]      B. No [ ]

During decentralization ----- A. Yes [ ]      B. No [ ]

63. If your answer is no for any period in Q. 71 explain?-----

-----

-----

-----

64. If yes to Q 71 describe your involvement during NAEP and decentralization

During NAEP-----

-----

During decentraliation-----

-----

65. Does the monitor give you feedback based on the monitoring of your activities during NAEP and decentralization?

During NAEP A. Yes [ ]      B. No [ ]

During decentraliation A. Yes [ ]      B. No [ ]

66. Is there any difference in the way your activities are being monitored now compared to the NAEP period?      A. Yes [ ]      B.No [ ]

o/. If yes state the difference. -----  
-----

68. What is your opinion about monitoring in terms of you performing your duties in the two periods?-----  
-----

DIVISION OF WORK – RESPONSIBILITIES

69. Please indicate your functions as a Municipal Director of Agriculture

-----  
-----  
-----  
-----

70. Have your responsibilities increased or decreased compared to the NAEP period?      A.  
Increased. [ ]                      B. Decreased.[ ]

71. Explain your answer to Q.70 with regards to performing your field duties.-----  
-----  
-----

CO-ORDINATION OF EFFORT

72. Do you have office meetings during NAEP and decentralization?

During NAEP    A. Yes [ ] B. No [ ]

During decentralization.    A. Yes [ ] B. No [ ]

73. If yes with whom do you have your office meetings during NAEP and decentralization?

During NAEP -----  
-----  
-----

During decentralization -----  
-----  
-----

74. How often do you have your office meetings?

A. Once a week. [ ]

C. Once in a fortnight [ ]

B. Monthly [ ]

D. Others (specify)-----

75. Who organises the office meetings?-----  
-----  
-----

76. What is the purpose of the office meetings?-----  
-----

77. Apart from office meetings what other meeting do you attend? Indicate by completing the table below.

Title of meeting.	Purpose of meeting.	Participating bodies (eg. Institutions, organizations, Departments etc.)

78. Are you provided with the resources you require for your work of the Municipal Agricultural Development Unit? Indicate by completing the table below

Resources.	Indicate adequately provided, not provided or partially provided as it apply.	Resource provided on time (tick against resource).	Comments.
Fund  Means of transport.  Office accommodation.  Teaching aids.  Materials and equipment for demonstration.  Others (specify)			

**Appendix 3B**

QUESTIONNAIRE ON THE IMPACT OF DECENTRALIZED MINISTRY OF FOOD  
AND AGRICULTURE ON EXTENSION DELIVERY

A STUDY OF TEMA MUNICIPALITY IN THE GREATER ACCRA REGION

TO BE ADMINISTERED TO: Agricultural extension agents.

PURPOSE OF STUDY: This study is to enable me prepare and submit a thesis to the Department of Agricultural Extension, Faculty of Agriculture, University of Ghana, Legon in partial fulfilment of requirements for M.phil. degree in Agricultural Extension

NOTE: Please answer the questions below; responses will be treated in confidence.

Questionnaire number: -----

Name of respondent (optional): -----

Town/village: -----

A. PERSONAL CHARACTERISTICS.

1. Sex:-----
2. Educational status:-----
3. Years of working experience in MOFA:-----
4. Department before the decentralization of MOFA-----
5. Position before the decentralization of MOFA -----

B. KNOWLEDGE GENERATION.

6. Are you involved in the generation of technologies for farmers?

During the NAEP period?----- A. Yes [ ]      B. No [ ]

During the decentralization period?----- A. Yes [ ]      B. No [ ]

7. If your answer is yes for any of the periods or in both periods in Q.6 indicate your involvement?-----

6. What technologies did you take to farmers last year (2001)? List them and their sources.

Technical area	Technology.	source

9. Are the technologies that you have indicated in Q.8 above the same as those you were taking to farmers during the NAEP period? A.Yes [ ] B.No [ ]

10. If yes why are the technologies the same?-----  
-----

11. Do you source for technologies outside MOFA in the NAEP and decentralization periods?

During NAEP period?----- A. Yes [ ] B. No [ ]

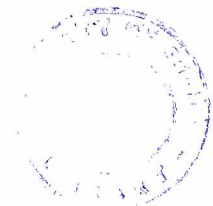
During decentralization period?-----A. Yes [ ] B. No [ ]

12. If you did not source for technologies outside MOFA in any period indicated in Q.11 state why?

NAEP period-----  
-----

Decentralization period-----  
-----  
-----

13. If your answer is yes for any period in Q.11 indicate the source(s) of technologies and the procedure for sourcing the technologies.



Period	Source of technologies	Procedure for sourcing technologies.
NAEP		
Decentralization		

PROBLEMS OF FARMERS /KNOWLEDGE REQUIRED BY FARMERS.

14. Identify five major problems facing farmers you interact with during the NAEP period.

Technical area	Problems

In your estimation how many of the problems in Q. 14 have you tackled successfully?

-----  
-----

15. What happened to the problems that you could not tackle successfully?-----

-----

16. Identify five major problems facing the farmers you interacted with in the last farming season (2001)?

Technical area	Problems

17. How many of the problems indicated in Q. 17 did you tackle successfully?-----

-----

18. What are you doing about those problems that could not be tackled?-----

-----

-----

19. Describe the procedure you use to tackle problems during NAEP and the decentralization periods?

NAEP period -----

-----

Decentralization period -----

-----

20. Indicate any difference(s) in the procedure you used for tackling problems during NAEP and the decentralization periods -----

-----

21. Do your farmers accept the solutions that you provide for their problems?

A. Yes [ ]

B. No [ ]

C. Sometimes [ ]

22. Explain your answer to Q.21 -----  
-----  
-----

23. Did your farmers accept the solutions that you provided for their problems during the NAEP period? A. Yes [ ]      B. No [ ]      C. Sometimes [ ]

24. Explain your answer to Q. 23 -----  
-----  
-----

AGRICULTURAL EXTENSION AGENTS (AEAs) PROBLEMS / KNOWLEDGE  
REQUIRED BY AEAs.

25. Did you face any problems doing extension work under the unified extension system during the NAEP period? A. Yes [ ]      B. No [ ]      C. Sometimes [ ]

26. If no or sometimes explain-----  
-----  
-----

27. If yes state the problems and indicate any solution(s) that was adopted.

Problems	Solutions adopted

28. Do you face any problems doing extension work under the decentralized unified extension system? A. Yes [ ]      B. No [ ]      C. Sometimes. [ ]

29. If no or sometimes explain?-----  
-----

30. If yes indicate problems and any adopted solutions.

Problems	Solutions adopted.

31. During the NAEP period have you been receiving in-service training on extension work?

A. Yes [ ]

B. No [ ]

32. If no how are able to work effectively?-----

-----  
-----

33. If yes indicate the training topics and how useful they have been to you (use 1996 as reference year)

Training topics	Usefulness.

34. In the decentralization period are you receiving in-service training on extension work?

A. Yes [ ]

B. No [ ]

35. If no how are able to work effectively? -----

-----  
-----

36. ii) yes indicate the training topics and how useful they have been to you (use 2001 as reference year)

Training topics	Usefulness.

37. Who were your trainers during NAEP and the decentralization periods?

NAEP period.-----

-----

Decentralization period -----

-----

38. How did the trainers select their training topics during the NAEP period?-----

-----

39. How does your current trainers select their training topics?-----

-----

40. Are you currently involved in the selection of training topics?

A. Yes [ ]                      B. No [ ]

41. If yes explain your involvement -----

-----

42. Were you involved in the selection of training topics during the NAEP period?

A. Yes [ ]                      B. No [ ]

43. If yes explain your involvement -----

-----

44. How often was the training? -----

45. What type training was it?

NAEP period -----

Decentralization period-----

46. Do you visit your farmers in the NAEP and decentralization periods?

NAEP period A. Yes [ ] B. No [ ]

Decentralization period A. Yes [ ] B. No [ ]

47. How often do you visit your farmers?

NAEP period -----

Decentralization period -----

48. Do you schedule meeting days and time with your farmers?

NAEP period A. Yes [ ] B. No [ ]

Decentralization period A. Yes [ ] B. No [ ]

49. If yes are the farmers given the opportunity to determine the days and time?

NAEP period A. Yes [ ] B. No [ ]

Decentralization period A. Yes [ ] B. No [ ]

50. How do you contact your farmers?

NAEP period -----

Decentralization period -----

51. What methods do you use in delivering messages to farmers, indicate method and frequency of use. This question covers the NAEP and decentralization periods.

NAEP Period		Decentralization Period	
Frequency of use	Extension method	Frequency of use	Frequency of use

STRUCTURE: Chain of command (planning, supervision, and management control); division of work (responsibilities) and co-ordination of effort (meetings organised to ensure all flow).

CHAIN OF COMMAND - PLANNING

52. Do you have goals/objectives for your operational area in NAEP and decentralization periods?

NAEP period A. Yes [ ] B. No [ ]

Decentralization period A. Yes [ ] B. No [ ]

53. If yes indicate how you came by the goals/ objectives in the NAEP and decentralization periods?

NAEP period -----  
-----

Decentralization period -----  
-----

54. Who are involved when goals/ objectives are being set for your operation area? List them for the NAEP and decentralization periods.

NAEP period -----  
-----

Decentralization period -----  
-----

55. Do you have indicators to determine the achievement of your goals/ objectives in the NAEP and decentralization periods?

NAEP period A. Yes [ ] B. No [ ]

Decentralization period A. Yes [ ] B. No [ ]

56. How did you come by these indicators?

NAEP period -----

Decentralization period-----

57. Do you plan your activities during the NAEP and decentralization periods?

NAEP period A. Yes [ ] B. No [ ]

Decentralization period A. Yes [ ] B. No [ ]

58. Whom do you involve when planning your activities during NAEP and the decentralization periods?

NAEP period		Decentralization period	
Those involved	What they do	. Those involved	What they do

59. Since the decentralization began have you changed the process of planning your activities? A. Yes [ ] B. No [ ]

60. If no indicate your planning process -----  
-----

o i. it yes indicate the previous and current planning processes

Previous planning process -----  
-----

Current planning process -----  
-----

62. How would you describe the type of planning you had in the two periods with regards to your work?

-----  
-----

#### CHAIN OF COMMAND - SUPERVISION

63. Do you have somebody who visits and assist you in your work as a supervisor?

During NAEP period A. Yes [ ] B. No [ ]

During decentralization period A. Yes [ ] B. No [ ]

64. If yes for any of the periods in Q. 64 indicate the number of times your supervisor visited you. -----

65. If you had supervisors during NAEP and the decentralization periods indicate what they do during visits?

NAEP period -----  
-----

Decentralization period -----  
-----

66. Apart from visits what other assistance does your supervisor give you to make you effective and efficient in accomplishing your job in the decentralization period?-----

67. Apart from visits what other assistance did your supervisor give you to make you effective and efficient in accomplishing your job in the NAEP period?-----

68. How will you rate the quality of supervision you received in the two periods? Indicate by completing the table below.

Quality of supervision.	Period in question.	
	decentralization	NAEP
Very good supervision.		
Good supervision.		
Fairly good supervision.		
Poor supervision.		

#### CHAIN OF COMMAND - MANAGEMENT CONTROL

69. Are your activities monitored on the field during the NAEP and decentralization periods?

During NAEP period A. Yes [ ]                      B. No [ ]

During decentralization period A. Yes [ ]                      B. No [ ]

70. Who monitor your activities in the NAEP and decentralization periods?

During the NAEP period -----

-----

During decentralization period?-----

-----  
71. Are you involved in the monitoring of your activities during the NAEP and decentralization periods?

During the NAEP period    A. Yes [ ]            B. No [ ]

During decentralization period    A. Yes [ ]            B. No [ ]

72. If yes indicate your involvement during NAEP and the decentralization periods

NAEP period -----  
-----

Decentralization period -----  
-----

73. Do you receive feedback based on the monitoring of your activities during the NAEP and decentralization periods?

NAEP period    A. Yes [ ]            B. No [ ]

Decentralization period    A. Yes [ ]            B. No [ ]

74. What is your opinion about monitoring in terms of you performing your duties in the two periods?-----  
-----

DIVISION OF WORK- Responsibilities

75. Complete the table below by listing your responsibilities in periods indicated

NAEP period	Decentralization period

76. How would you describe your ability to satisfy your farmers based on your responsibilities in the NAEP and decentralization periods. Tick in table below.

NAEP period	Decentralization periods
I am able to satisfy them always	I am able to satisfy them always
I am able to satisfy them sometimes	I am able to satisfy them sometimes
I am not able to satisfy them	I am not able to satisfy them

### CO-ORDINATION OF EFFORT

77. Did you have office meetings during NAEP and decentralization periods?

NAEP period? A. Yes [ ] B. [ ]

Decentralization period? Yes [ ] B. [ ]

78. How often did you have your office meetings in NAEP and decentralization periods?

NAEP period -----

Decentralization period -----

79. Who organises the office meetings in NAEP and decentralization?----- NAEP

period -----

Decentralization period -----

80. Who attend the office meetings in NAEP and decentralization?-----

NAEP period -----

Decentralization period -----

81. What is the purpose of the office meetings in the decentralization and the NAEP periods?

State in table below.

NAEP period	Decentralization period

82. How would you rate the effectiveness of co-ordination of effort in terms of performing your duties in the decentralization and the NAEP periods?

NAEP period -----

Decentralization period -----

83. Give reasons for your ratings.

NAEP period -----

Decentralization period -----

### RESOURCES

84. Are you provided with the resources you require for your work? Indicate by completing the table below.

Resources	Indicate adequately provided, not provided or partially provided against the appropriate resource.	Comments.
Motorbike. Transport and travelling allowance. Teaching aids. Materials and equipment for demonstrations. Field uniforms/protective clothing. Others (specify).		

MORALE OF STAFF

85. Are you satisfied with your job as an extension agent? A. Yes [ ] B. No [ ]

86. If No why?-----

-----

87. If Yes give reasons -----

-----

88. What do you suggest if done will give you job satisfaction?-----

-----

-----

### Appendix 3C

QUESTIONNAIRE ON THE IMPACT OF DECENTRALIZED MINISTRY OF FOOD  
AND AGRICULTURE ON EXTENSION DELIVERY  
A CASE STUDY OF TEMA MUNICIPALITY IN THE GREATER ACCRA REGION OF  
GHANA

TO BE ADMINISTERED TO: Farmers in the Tema municipality

PURPOSE OF STUDY: this study is to enable me prepare and submit a thesis to the Department of Agricultural Extension, Faculty of Agriculture, University of Ghana, Legon in partial fulfilment of requirements for M.phil. degree in Agricultural Extension.

NOTE: Please answer the questions below; responses will be treated in confidence.

Questionnaire number :-----

Name of respondent (optional):-----

Town/village:-----

#### A. SOCIO- ECONOMIC CHARACTERISTICS

1. Sex:----- age:-----
2. Educational status:-----
3. Marital status-----A. married [ ] B. single [ ] C. widowed.[ ]
4. What type of farming system do you practice on your farm?
  - a) Mix cropping (growing more than one crop on the same land without row spacing)
  - b) Sole cropping (only one crop planted on the land)
  - c) Agro-forestry (food crops and tree crops)
  - d) Mixed farming (raising both crops and livestock)
  - e) Inter-cropping (growing more than one crop on the land in rows)
  - f) Others (specify)



B. EXTENSION DELIVERY (KNOWLEDGE GENERATION).

5. Have extension agents been visiting you?

A. Yes [ ]                      B. No [ ]

6. If yes indicate the frequency of visits per month. -----

7. Are you satisfied with the number of visits made to you by the extension agent? Explain.--

-----  
-----

8. Do you discuss with your extension agent what your problems are?

A. Yes [ ]                      B. No [ ]

9. How often is the information he brings you able to solve your problems?

A. Always [ ]                  B. Sometimes [ ]                  C. Never [ ]

10. Messages on what does the extension agent bring to you?

-----

11. Are the messages you received useful to you?

A. Yes [ ]    B. No [ ]

12. If No why?

-----  
-----

13. If Yes explain the usefulness of the messages

-----  
-----

14. What messages in your opinion would you like to receive from your extension agent

-----

PROBLEMS OF FARMERS

15. Do you like your extension agent?

A. Yes [ ]

B. No [ ]

16. Give reasons for your answer

-----  
-----

17. How will you describe your relationship with your extension agent?

-----

18. Do you like the way your extension agent introduces new information to you?

A. Yes [ ]

B. No [ ]

19. Give reasons for your answer to Q18

-----  
-----

20. Are the messages you receive from your extension agent timely enough to meet your needs? A. Yes [ ] B. No [ ] C. Sometimes [ ]

21. Give reasons for your answer to Q. 20

-----  
-----

PROBLEMS OF AGRICULTURAL EXTENSION AGENT

22. What do you think are some problems that affect your extension agent in his/her work? ---

-----  
-----

23. Does your extension agent live in your community? A. Yes [ ] B. No [ ]

24. If No why?-----

-----

25. Where does your extension agent always meet you?

-----

26. How does your extension agent pass on information to?

-----

-----

27. How does your extension agent contact you?

-----

28. Does your extension agent have a motorbike? A. Yes [  ] B. No [  ]

29. If No how does your extension agent visit you? -----

-----

#### KNOWLEDGE REQUIRED BY AGRICULTURAL EXTENSION AGENTS.

30. Are you able to communicate effectively with the extension agent who visits you?

Explain.

-----

31. Does your extension agent sometimes seek some knowledge and skills from you? Explain.

-----

32. Do you have confidence and trust in the extension agent in your area? Explain.

-----

-----

33. What do you think the AEA must know about you and your agricultural activities to be able to help you?-----

-----



STRUCTURE: chain of command (planning, supervision, decision making and control);  
division of work (responsibilities, specialisation and geographical coverage in terms of target  
population).

CHAIN OF COMMAND – planning.

34. Does your extension agent involve you in planning agricultural activities?

A. Yes [ ]                      B. No [ ]

35. If Yes explain your involvement -----

36. Have you ever been involved in a planning session for the Ministry of Agriculture?

A. Yes [ ]                      B. No [ ]

37. If yes indicate the year in which you were involved.-----

CHAIN OF COMMAND – supervision.

38. Do you know anybody as a supervisor for the extension agent in your area?

A. Yes [ ]                      B. No [ ]

39. If your answer is yes in Q.38 indicate what the supervisor does when on visits?

-----

DIVISION OF WORK- Responsibilities of AEA.

40. What are the things that the extension agent does anytime he/she visit you? -----

-----

-----



## APPENDIX 3D

### INTERVIEW CHECK LIST

#### INTERVIEW GUIDE FOR MUNICIPAL CHIEF EXECUTIVE

1. Do you have any formal relationship with the Department of Agriculture in your district?  
Yes or No.
2. Describe your relationship with the Department of Agriculture in your district.
3. Which is the main occupation for the people of your district?
4. Do you have any plans for promoting agricultural production from its current level to a higher level? Explain.
5. How will you go about promoting agricultural production in your district.

#### INTERVIEW GUIDE FOR THE MUNICIPAL ASSEMBLY SUB- COMMITTEE ON AGRICULTURE

1. Is the department of Agriculture in the district represented on your sub-committee? Yes or No.
2. What role does the department of agriculture play on this committee?
3. What is the relationship between the district assembly and the department of agriculture?
4. What support does the district assembly offer to the department of agriculture?
5. What contribution does the department of agriculture make to the district assembly?

