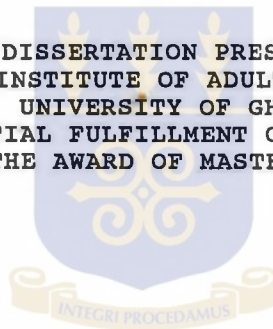


EVALUATION OF THE EXTENSION SERVICES  
OF THE MINISTRY OF AGRICULTURE IN  
PROMOTING SORGHUM PRODUCTION IN  
PONYENTANGA AREA OF WA DISTRICT

BY

KANCHELI WALTER GBIELI

A DISSERTATION PRESENTED TO THE  
INSTITUTE OF ADULT EDUCATION,  
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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE AWARD OF MASTER OF ARTS DEGREE



SEPTEMBER, 1996



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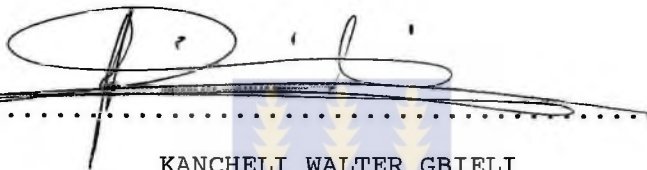
**DECLARATION**

I declare, solemnly and conscientiously, that this dissertation is my own original work. It is a research I have personally conducted in an attempt to partly fulfil the requirements for the award of the Master of Arts Degree in Adult Education, I.A.E (UG).

Where references have been made or cited of other people's views, full acknowledgement has been given.

None of the material contained herein has been presented either wholly or in part to any other Institution for any degree.

SIGNATURE.....



KANCHELI WALTER GBIELI

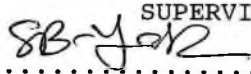
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SUPERVISOR

SEPTEMBER, 1996

**DEDICATION**

Dedicated to Dimbo, my mother, whose absence can never be forgotten.



### ACKNOWLEDGEMENTS

The writer wishes to express his sincere appreciation to Mr. L.K.T. Dorvlo and Mr. S.K. Badu-Nyarko for the objective manner in which they pointed out errors in this dissertation to bring it to its present form.

Due acknowledgement is also given to the authorities whose views have been cited in the study. While any credit in the dissertation goes to the above mentioned people, the writer remains responsible for any errors in the dissertation.

University of Ghana, Legon.

September 30th, 1996



### ABSTRACT

This study is a field survey. Its concerns have been to find out the work of the extension services department of the Ministry of Food and Agriculture (MOFA) in Ponyentanga area in promoting Sorghum cultivation.

The study looked at the way farmers in the Ponyentanga area were equipped and influenced with the relevant knowledge, information and attitude towards improved farming practices. The study critically examined the method of educating farmers by front-line extension officers in order to evaluate its efficacy towards improved farming methods in the area. The values, ideas and beliefs of farmers were examined to find out whether there have been a change in these elements as a result of extension services rendered by the extension officers.

A questionnaire was the research instrument used to find out the extent to which extension officers operated in the area. An interview schedule was also designed for farmers in the same area to check their responses.

Analyses of responses to both questionnaire and interview schedule clearly showed that services rendered by the extension services department of the Ministry of Food and Agriculture in Ponyentanga area were ineffective. They further showed that the methods used by extension officers were inappropriate. As a consequence, there was no change in the ideas, beliefs, attitudes and farming practices of farmers.

It is recommended that retrenched extension officers be re-instated or new officers appointed to assist the technical officer as the area is too large to be managed by one person. It is also recommended that retraining programmes be continued in order to improve the performance of the extension officers. All the extension officers should be equipped with motor cycles to enable them carry out effective out-reach programmes in the target area.

Functional literacy should be incorporated into the extension work to enable the farmers to better appreciate the new techniques of farming introduced to them. Further research in the entire Wa District may provide further information to this study

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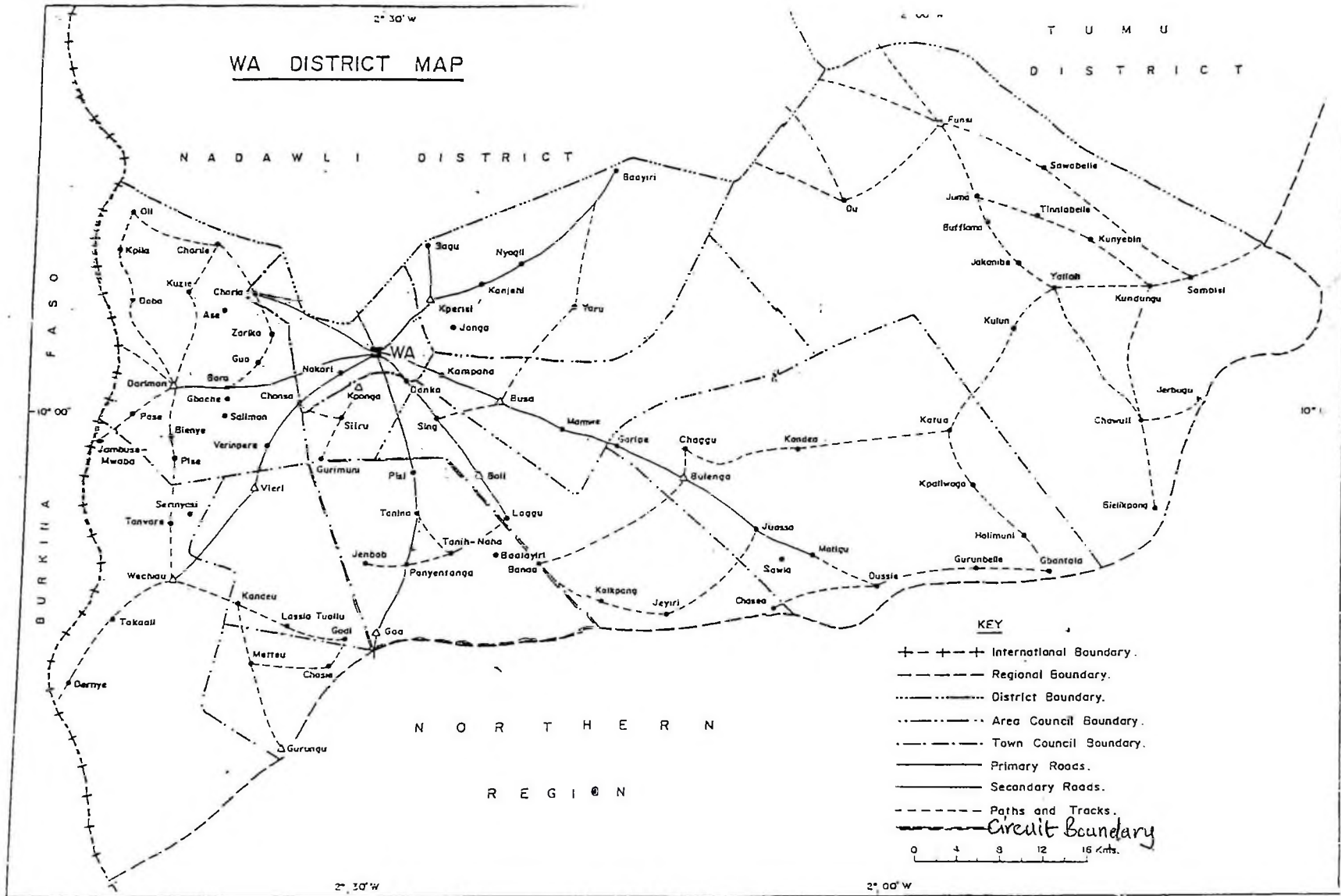
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## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 The Context of the Problem

Sorghum (guinea-corn) is one of the primary crops cultivated in Northern Ghana, particularly in the Upper East and Upper West Regions. The study is an attempt to evaluate efforts being made by the Extension Services Department of the Ministry of Food and Agriculture to improve sorghum production in the Panyentanga Circuit (Map 1). The entire Wa District is divided into fifteen agricultural zones, known as Circuits (Dery 1976). Commenting on issues of development, Mathur (1986), questioned why plans and projects, formulated with so much care, encounter problems in their implementation. This phenomenon is not new in the Ghanaian situation especially in the Circuit of this study - the cultivation of sorghum in the Panyentanga Circuit of the Upper West Region. The government of Ghana through the Ministry of Food and Agriculture has established Extension Service Departments in all the Regions and Districts to monitor and assist the efforts of farmers in crop production. The effectiveness of the various plans and educational methods used by the Extension Services Department to promote the production of sorghum in the Panyentanga Circuit of the Upper West Region is what this study intends to investigate.

In the words of Boateng (1960) farming in the northern savannahs is far more precarious than elsewhere in Ghana. Besides the natural hazards arising from the environment, farmers in the northern savannahs are faced with the difficulty of soil

conservation and also selling their products readily owing to the vast distances which separate them from the large consuming centres for some of their produce. According to Boateng (1960), there is low productivity due to loss of energy which results from the use of simple, rather archaic methods employed in clearing, planting and harvesting.

The Ghana Seven-Year Development Plan (1963-4/1969-70) which was started in the First Republic states that there are some aspects of farming practices in Ghana in which technology needs much improvement. These include shade requirements, proper drainage, the control of pests and weeds, the best times for planting and harvesting, and food storage. All these are matters in the solution of which traditional technology needs to be supplemented by modern scientific research and effective agricultural education. Dressing seeds against insects and fungi can have a marked effect on crop yields. These technological problems are prevalent in the Panyentanga area.

It is further claimed (Boateng, 1960) that farmers in some parts of Ghana do not produce as much as they could because they cannot market their produce at reasonable prices. The construction of feeder roads and other means of access to markets and improvement of village markets have long been a necessity (Boateng, 1960).

Boateng (1960) asserts that losses in stored food due to the depredations of insects, fungi and excess moisture, are greater than generally appreciated. These losses could be reduced to a

minimum by operating proper systems of pest control in silos and stores. The burden of such losses should be lifted off the farmer as far as possible for him to dispose of his crops after harvest.

In an attempt to tackle the above problems associated with crop production, Ghana in its Seven-Year Development Plan (1963-4/1969-70) instituted an Agricultural Development Promotion Plan for the savannah zone to cover cereal crops like: rice, maize, millet and sorghum; legumes and oil seeds: groundnuts, bambara beans, cowpeas and beans amongst others. This laudable Agricultural Development Promotion Plan did not see full implementation when in 1966 a coup d'etat overthrew the Government of the day and as it has always been the case, the plan collapsed together with the government.

The greatest single limitation to the acreage that farmers in Ghana can cultivate lies in the fact that they can only rely on their own physical powers and those of their helpers on the farm. It is asserted that the average farmer in the northern savannah zone cultivates about three acres excluding the land which is lying fallow on account of shifting cultivation. However, population increase in the Panyentanga area has made it impossible for farmers to practise the shifting cultivation system. This means that the soil is overworked, is eroded and easily becomes sterile and unless other means of restoring soil fertility are put in place, low productivity will always be the result. Also the single rainfall season from April to September deposits on the land a considerable amount of water (100cm) which mostly washes away crop nutrients and

is succeeded by a severe dry season which limits crop growth and hampers livestock rearing. Improved varieties and short term credit facilities can help improve productivity.

An experiment in mechanized farming was started in 1949 by the Gonja Development Company in Damongo which ended in 1957 as a failure. The hope was that if the results were positive they would be disseminated by the extension officers to other parts of the then Northern Territories of the Gold Coast.

The failure of vital agricultural development projects affects the progress of the country as a whole and the rural areas in particular. The Panyentanga agricultural operational area is no less affected by these productive drawbacks. It is in this sense that the evaluation of on going projects becomes relevant. In the implementation of a large-scale non-formal education project in Indonesia (Penmas Programmes) a system of continuous evaluation and performance monitoring was introduced to provide an elaborate information needed which could be used to plan for an improved Penmas effort (Centre for International Education, 1982). In a similar vein, a formative evaluation undertaken on sorghum production in the Panyentanga area would provide the needed information which would be used to effectively plan and give proper direction to present and future projects in sorghum production in the area. Initiating a development project is one thing. Successfully implementing the project is quite another thing. It is only when some kind of evaluation of a project is made that one can tell whether the project is worth continuing, improving, or even

abandoning it.

Though other crops like maize, rice, yam, beans and cotton are grown, sorghum is one of the most important staple foods of the people of this Circuit. For this reason, it is widely grown. Sorghum is used in brewing "pito", the popular local drink. During funerals grave diggers are given sorghum in return for their labour. Once in a year, people of Ponyentanga area use sorghum to brew "pito" which is used to perform sacrifice to the "Tengan", the earth god. This sacrifice is always in appreciation of the rainfall, good harvest and other blessings they believe they receive from the earth god. When Son-in-Laws go to help Father-in-Laws in their farms sorghum beer is given to them. Where a person has to choose between growing one crop and other crops, it is often sorghum that is chosen. People from this Circuit who live in other parts of the country still dwell largely on sorghum for their food. Because of the importance of the cereal to the people, efforts are always made to produce the crop in large quantities for people both within and outside the circuit.

Some thirty-five years ago, land in Ponyentanga Circuit was largely forested and very fertile. The farming of sorghum during this period was not difficult. Farmers obtained very large yields from small farm lands. Increase in production was fast enough to keep pace with the growth of population and rising standard of living. Supplies to growing cities and towns were well maintained. Sorghum production was generally satisfactory. Today, production of sorghum in the area is not as good as it was.

## 1.2 Statement of the Problem

The problem this study seeks to address is whether the extension services rendered by the Extension Services Department of the Ministry of Food and Agriculture (MOFA) have been effective in equipping and influencing the farmers of the Ponyentanga Circuit of the Upper West Region to the extent that the people currently have:

- (i) the relevant knowledge, information and attitude which will enable them engage in improved farming practices leading to an improvement in their living standards.
  
- (ii) to find out whether the methods of education that are adopted by the Extension Service Department, have been able to bring about the needed change in the values, ideas and beliefs of the farmers in relation to extension work.

Specific questions the study tries to answer are as follows:

- i. What type of services are rendered to the farmers of the Circuit by the Extension Services Department?
- ii. Are project materials and programme delivery appropriate to user needs?
- iii. What educational methods (teaching and learning) are used in rendering these services to the farmers?
- iv. To what extent has the target group been reached?
- v. How effectively have staffing needs been met?
- vi. Are there any training facilities for extension officers to improve upon their performance?

- vii. Are the traditional farming needs identified by Extension Officers and the field activities they carry out suitable to local conditions?
- viii. Have there been any improvement in traditional farming practices?
- ix. And lastly, if there is any deterioration in farming practices; what accounts for this?

### **1.3 Objectives of the Study**

The objectives of the study are to:

- i. evaluate what activities of the Extension Officers have been effective and what needs improvement.
- ii. determine what has been achieved and what needs to be achieved.
- iii. assess the relevance of the information obtained in relation to the stated goals of the Extension Services Department as a guide for setting future direction for MOFA.
- iv. make suggestions for the efficient and effective performance of the staff of the Extension Services Department.
- v. state the implications of the outcome of the study for the adult educator as a change agent.

### **1.4 Assumption of the Study**

It is assumed that the methods of educating the farmers did not succeed in bringing about any meaningful change in the values, ideas, and beliefs with regard to the practices of the people.

### **1.5 Definition of Concepts**

It is important to define all unusual terms that could be misinterpreted. The definitions are intended to help establish a frame of reference with which the reader can approach the problem as handled in this dissertation. These concepts are explained below:

#### **i. Extension Officers**

According to Du Sautoy (1960) Extension Officers are specialists in their own field who are able to see to the roots of a problem and are able to give information about this problem to those who need it. For purposes of this dissertation Extension Officers are functionally defined as people who have special knowledge or skills and who are, by the tenets of their work, obliged to share the knowledge or skill with the farmers. Extension Officers are a critical link between the farmers and Extension Services Department of the Ministry of Food and Agriculture (Du Sauntoy, 1960).

#### **ii. Inservice Training**

The term is used here to mean training that is focused on improving competencies that are necessary to help the field workers to improve their job performance. Learning by doing, when possible and appropriate to the situation, is a very useful learning activity for competency based staff training (Centre for International Education, 1982). The concept "Inservice Training" should be understood in the light of the above definition.

### **iii. Motivation**

The term is used in this dissertation to mean the driving force that stimulates farmers to adopt in their farming practices, the methods, knowledge and attitudes they learn (Cowie, 1993).

### **iv. Agricultural Extension**

Extension work, according to Du Sautoy (1960), aims at putting across, in a manner readily understood by the ordinary person, new and improved techniques which they could use to improve their general standard of life. Applied, extension work helps farmers to learn improved methods of land tillage. Du Sautoy's definition is applicable in this dissertation.

### **v. Evaluation**

Evaluation is the systematic process of collecting evidence and using it to judge the degree of worth or otherwise of a programme. To evaluate is simply to find out changes and growth that have taken place as a result of some experience. The primary purpose of evaluation therefore is to get information to recycle the system. Evaluation may be undertaken in two phases. First, it can be undertaken during the formative stages of a programme to provide planners with feedback so that they can alter and improve the programme. This is formative evaluation. Secondly, it can be undertaken to assess the impact of the total product, comparing observed effects with anticipated or unanticipated effects. This is summative evaluation. In this dissertation, a formative evaluation

is implied (44th Annual New Year School: 1993).

#### **vi. Household**

According to Casely and Lury (1987), a household comprises a person, a group of persons, generally bound by ties of kinship, who live together under a single roof or within a single compound, and who share a community of life in that they are answerable to the same head and share a common source of food. Casely and Lury's definition is applicable in this dissertation except that many households now do not share a common source of food.

### **1.6 Methodology and Sources of Data**

#### **i. The Population**

Twenty-four villages constituted the area of the study. In all, there were three hundred households. Since the head of each household was the one to be interviewed, three hundred farmers constituted the population.

Women heads of households would not answer questions because in the area, men are leaders and have the responsibility to answer questions in connection with the household. In such situations the oldest male in the household was interviewed.

#### **ii. The Sample**

One-third of the three-hundred farmers were selected randomly to serve as a sample population. The three hundred farmers were numbered. The numbers were written on pieces of paper and folded

up. One hundred random selections were made from a hat. After each selection, the rest of the papers were well shaken to mix them up before the next selection was made. The researcher sought the assistance of an officer from the Institute of Adult Education, Wa to do the random selection.

### iii. Research Design

The study has been designed basically as an evaluative survey of the formative type. The interview schedule and questionnaire were used to collect data. It is essentially to describe and illuminate features of services rendered and methods used in rendering these services by the Agricultural Extension Services Department of Wa District. The features of these services and methods used will be judged in terms of their effectiveness considering the goals and objectives of the department.

The context, input, process and product (CIPP) model of evaluation was adopted for this study. The CIPP model of evaluation was developed by Stufflebeam and Guba (1971). They considered that the purpose of evaluation was to provide relevant information to decision makers. The CIPP suggests four parameters of evaluation:

- (a) Context-evaluation - This is an evaluation of what surrounds the system - its environment. Limits of the system of change are identified and separated from its environment by imaginary systems boundaries, but remembering that the environment is ever present and remains a potential influence on our change efforts

within the system we have outlined.

- (b) Input-evaluation - This is an evaluation of what is put into a programme system - men, materials, tools, etc. This parameter helps the evaluator to think of what is going on in the system to bring about the change.
- (c) Process-evaluation - This deals with the "how" of procedures, arrangements, formations, extension and education. Here the consideration is on informational, organizational and the distributive processes leading to change.
- (d) Output-evaluation - This is evaluation of what comes out at the end, that is, the product of the system. In our case, the evaluation is on increased agricultural productivity. With regard to the extension services rendered in Ponyentanga, an evaluation of the component parts of the extension programme will give a true picture of what is actually on the ground.

#### **iv. Research Instruments**

The interview schedule as well as the questionnaire were used to collect data. The persons interviewed were all involved in sorghum farming. The actual interview was focussed on the subjective experiences of these sorghum farmers. Their responses enabled the researcher to test the validity of his assumptions. The Front-line Staff Members answered the questionnaire. In using the interview schedule and the questionnaire, the researcher was mindful of

inaccurate or false data which were likely to arise from:

- (a) Forgetfulness on the part of some respondents.
- (b) Misunderstanding of the questions asked.
- (c) Any deliberate intent to mislead.
- (d) Secondary data or secondhand information were scrupulously examined since their validity could not be taken for granted. To forestall all the above likely problems, the interview schedule was pretested at Sagebaalong and found to be clear to the respondents.

**(v) Design of the Interview Schedule/Questionnaire**

Short, simple questions were asked to ensure easy understanding since the respondents were mostly illiterates. Ambiguous questions were avoided. Questions that were too personal were not asked. Leading questions were avoided and those questions that were asked were arranged in a logical sequence.

**(vi) Significance of the Study**

According to Cowie (1989), significance denotes importance. This study is very important in the sense that its outcome will help the entire Agricultural Extension Services Department in the Wa District in its planning and strategies concerning sorghum production. It will also enable the department to use appropriate methods. The results can be used for comparative studies in other areas of northern Ghana where sorghum is produced.

**(vii) Data Analyses**

Tables, averages and percentages are used in a manner that will communicate the results of the investigation without complex technicalities.

## CHAPTER TWO

### 2.1 Theoretical Framework and Literature Review

According to Fox (1969) new knowledge must fit into existing knowledge, that is, it must have as a frame of reference knowledge that precedes it; which knowledge might have been acquired by trial and error methods used by others; by the experience of others; by authority of others who have excelled in the acquisition of knowledge and by research. The frame of reference upon which new knowledge is built must be based on a particular philosophy that expresses a world view common and acceptable to both the seeker of knowledge (who later becomes the possessor of such knowledge) and those who must benefit from the new knowledge - the recipients. This theoretical framework is centered on agricultural extension as a field work and evaluation as a process of judging the worth of such extension work.

Writing on the concept of agricultural extension, Freire (1985) makes us realise the poverty and limitations of the concept which has prevailed among us for many years in spite of the generosity and good will of those who have dedicated their lives to the work of extension. Freire (1985) points out that the failure of extension officers to achieve lasting results is due, in some cases, to their naive view of reality and more commonly to the marked attitude of superiority and domination with which the Extension Officer confronts the farmer within a traditional agrarian structure. The concept of extension, viewed in this manner leads to actions which transform the peasant farmer into a "thing",

an object of development projects. This use of the farmer does not present him as a being capable of transforming the world. In this concept the farmer is not educated but instead is treated as a depository for propaganda from an alien cultural world. This alien cultural world contains those things which the extension Officer (who is modern and therefore superior) thinks the farmer ought to know in order to become modern also. Freire emphasised this point when he said:

Knowing, whatever its level, is not the act by which a subject transformed into an object docily and passively accepts the contents others give or impose on him or her. Knowledge, on the contrary necessitates the curious presence of subjects confronted with the world. (Freire 1985:87).

From a humanist and scientific perspective one cannot focus on technical capacitation except within the context of a total cultural reality. Farmers' attitudes towards phenomena like soil preparation, planting, harvesting, erosion and manuring are related to their attitudes towards nature, their religious beliefs and their values. As a structure, this cultural totality cannot be affected in anyway of its parts without an automatic reflex occurring in the other dimensions. Thus the extension officer who is an educator cannot bring about a change of peasant attitudes in regard to a particular aspect of life unless he knows their world view and confronts it in its totality.

Operationally, extension in relation to the farmers in Ponyentaga Circuit implies a dialogue situation between the Extension Officer and the farmer. This dialogue leads to a learning

situation in which both the extension officer and the farmer acquire some knowledge for the development of agriculture and the improvement of their communities.

## 2.2 Literature Review

The study reviewed literature in the area of agricultural extension and evaluation. Relevant experience on sorghum production and agricultural production generally is locked up in the minds of people since the farmers are mostly illiterate and have no documents on farming methods used and quantitative levels of production. Due to this handicap, the use of literature of a rural background are brought to bear on the literature reviewed.

According to Du Sautoy (1960) extension services rendered to a community or group of people becomes a form of social development. Such a development deals with simple things and unsophisticated people. Government efforts to assist unsophisticated people to develop themselves started in this country (Ghana) as early as 1948 (Du Sautoy, 1960). The type of persons that social development is usually directed at, according to Du Sautoy, is often naturally conservative and therefore, finds it difficult to accept change. The perceptions, attitudes, values and beliefs of such persons always need re-orientation if they are to benefit in any human activity leading to progress through self-help. This re-orientation is a kind of education which must be undertaken by both those proposing it and those it is intended to help. In the case of this dissertation, the extension officer and

the farmers whose welfare he seeks to promote must all be engaged in the education and learning processes.

In 1951, The Gold Coast Plan for Mass Literacy and Mass Education had this to say about a mass education programme for the country:

Prominent in a mass education campaign must be an attack on illiteracy, ... passive reception of ideas or information is not enough; every programme should be designed through the stimulation of initiative or the encouragement of local self-help to lead to action either by individuals or by the community or both (Du Sautoy, 1960:3).

What is most important to the Gold Coast Plan for Mass Literacy and Mass Education is self-help. The second important thing is that the initiative should come from the people themselves and not imposed from above. The third notable issue is that there must be a process of stimulation by the community development organization, in this case the extension services department, to break apathy and to show the people that what they want can be achieved if they are prepared to exchange ideas and help themselves.

According to Du Sautoy (1960) in trying to assist unsophisticated people, attention must be paid to their social circumstances. Besides, people must be accepted as they are and their customs and beliefs must be known. The extension officer should find the best way of ensuring the farmers' interest in a venture and pursue that, rather than rigidly follow a pre-conceived line of action. In all cases, the extension officer must be close to the farmers under his control and rise with them as their standard of development and needs increase. Progress should be

achieved step by step. The tendency on the part of some extension officers to direct farmers too openly in what they themselves think the farmers should have rather than what the farmers want needs redress. In guiding people to what they need, attention must be paid to what they actually want.

Since the extension officer is dealing with farmers of different political views he has to be careful in his political utterances and affiliations so that he does not divide his clients. Mixing politics and extension work is not healthy for any development effort. In the dissemination of information among farmers care has to be taken. If the relationship between the extension officer and the farmers is not cordial, the farmers will ignore him or her and his or her information; for example, having arranged for the arrest of some farmers of the operational area over a squabble, the extension officer will not find it easy to gain the confidence of all the farmers.

These methodological approaches as expounded by Du Sautoy (1960) are very relevant to the rendering of extension services. Freire's (1985) view of understanding the peasant farmer in the totality of his cultural world view and dealing with him in that cultural context is also very relevant.

According to Bhola (1979) input is what is put into a programme system. The input parameter helps us to think about what is going into the system to bring about change. In terms of input the Extension Services Department in its operation in the Ponyentanga Circuit has to contend with the right type of extension

officers, materials like fertilizer, drugs, improved seeds, agro-chemicals, hand tools like hoes, cutlasses and pick-axes and then also, bullock ploughs and tractors. The expertise of the extension officers and all other relevant information should be made available to the farmers at the right time.

The environment in which a programme is launched has an influence on that programme. The success of a programme, therefore, depends to some extent on how the environment is being manipulated. According to Bhola (1979) the context of a system is what surrounds that system - its environment. Bhola (1979) maintains that in dealing with problems of the environment (what he calls context) we use our social eye. This is done by identifying the limits of a system of change, separating that system of change from its environment by imaginary system boundaries. Such an environment is ever present and remains a potential influence on our change efforts within the system.

In the words of Frain (1981), the environment surrounding an organization is an embodiment of such cardinal factors as economic, legal, political, social and technological issues which have a bearing on the organization. These environmental factors continue to change at an unabated pace thus calling for the most sensitive monitoring of such changes and the most accurate assessment of their implications for organizational activity.

The quality and calibre of an extension worker have an impact on the type of extension services rendered. Du Sautoy (1960) says that there are three essential ingredients in rendering extension

services. These are good selection of staff, good training of staff and good organization. The extension officer must have a respectable personality and enthusiasm. To arouse enthusiasm in others the extension officer must have it himself or herself and be convinced that what he or she is teaching is right. The extension officer who cannot by himself or herself implement his or her own ideas cannot definitely inculcate them in others. The extension officer should be trained to understand the world of human beings so that he can relate well with them. This calls for a certain amount of maturity in the officer. Apart from possessing enthusiasm and belief in what he is doing, the extension officer must not be afraid of hard work and must be willing to live and travel extensively in primitive conditions. He must, above all, be adaptable and able to improvise.

Cole (1979) says that the first function of adult education is to inspire both a desire for change and an understanding that change is possible. Cole (1979) stresses that there is also the need to learn how to participate in and influence the decision-making process. It is in this light that the extension officer as a change agent must have some influence on his clients.

Participation in the extension services is a very important element in all development programmes requiring change. According to Mathur (1986), participatory schemes are often launched without sufficient prior preparation in a hurry to produce quick results. The task of anticipating problems in the field and making provisions for dealing with unexpected situations are simply side-

tracked. Those concerned with the making of development plans tend to forget that participation cannot be achieved by plans formulated in isolation in central offices away from the people concerned. In designing a participatory approach for rural development in Mexico, Echenique observed:

The official agencies, whose inertia is evident, mostly act along their old hide bound traditional lines, defining what is to be done, how it should be done, and who is to benefit, without having any specific knowledge of the real social and cultural context in which they are operating. Limited to superficial view... that the peasants know nothing of technology, projects and serious things of that kind (Mathur, 1986:29).

Any programme that is designed with this kind of attitude may not enjoy the co-operation of potential beneficiaries. Freire (1985) emphasises that any programme of change must use educational methods that make the learners critically aware of their false consciousness and of their social condition. In becoming aware, they should reject many of the myths erected by the ruling elite that prevent them (the learners) from having a clear perception of their own social reality. Having undergone a process of demythologization learners should act upon the world to endeavour to create a better society.

Extension work in the Ponyentanga Circuit seems to be centred mainly on men. The fact that females are more than their male counterparts in the whole of the Upper West Region as well as in the Wa District, and the fact that they also exceed the men in the rural areas significantly makes their exclusion from the change process a grave developmental problem (Ghana, 1984). Women are very

powerful in influencing their husbands' in family life and in moulding their attitudes and dispositions in the direction they like. If women are left out in the developmental process, the men will certainly fail.

Clark (1979) reporting on the failure of most women's programmes in Kenya and the Philippines asserts that it was done to the exclusion of their men. This view is laudable because for a really integrated and community-wide support to prevail, women should be involved in all extension education. In all cases, learner-determined priorities should be the starting point of all extension education because it is not always the case that the expectation of the villagers is consistent with the needs of "developers".

The level of interest among farmers in a given area will determine the level of participation. This then calls for motivation on the part of change agents. According to Katz and Kahn (1978); the Maslow need hierarchy explains the point. The model (1943;1954) assumes a hierarchy of human needs ranging from biological needs through security to self-actualization.

Basic to motivation theory is the thesis that the motives at the bottom of the hierarchy are imperative in their demands and, until those demands are met, they make the higher order needs relatively ineffective. Once these lower level needs are assured satisfaction, the higher level needs take over and become all important.

Motivation could be obtained by way of abundant inputs in the system. The inputs could be in the form of bullock ploughs, hoes, cutlasses, fertilizers and relevant information. These inputs, given at the right time and at subsidized prices, can elicit community participation among the farmers in the Ponyentanga Circuit. But motivation is a double-edged sword in the change process. The extension officer himself needs to be motivated in order to do his work well. He needs a means of transport in order to be mobile and at least a moderately decent place to lay his head. According to Mathur (1986:72):

There must be sufficient incentive to attract the right people for rural postings... Real commitment to project goals can produce results despite ill-conceived structures and untrained manpower. While poorly motivated managers will achieve little with the best of training and the most appropriate structures.

Mathur (1986) further stressed that a monitoring system can serve to maintain control over the field staff without undue interference in their sphere of delegated routine and day-to-day working, and can help to motivate them to perform better. In this connection a system of supervision not based on<sup>2</sup> fault finding could ensure effective field work. Cooperative associations among farmers could also help to reach the farmers easily.

Bhola(1979) states that the output of a system is the product of that system. In terms of the Extension Services Department in the Ponyentanga Circuit, a knowledgeable farmer, a well experienced extension officer and increased agricultural productivity are some of our expected products.

If programme outputs are to meet programme objectives and goals, then certain factors have to be considered seriously. Credit facilities made available to farmers can create incentives for involvement and community participation. According to Bhola (1979), it will also encourage field workers to tackle their work with enthusiasm. In this light, the FAO Report, 1975 may be considered very relevant. At the conference, efforts were made to provide assistance to small scale farmers. The conference recognised that in most developing countries Small-Scale farmers form the bulk of the population and that their number is so large that both for economic and social reasons there must be a national effort to increase the production of the small farmer sector. The conference further recommended that for the purpose of directing assistance to that category of farmers which needs it most urgently, governments and credit institutions concentrate their efforts on those farmers who at present are marginal to social and cultural life. The conference also recommended that governments ensure easy physical access to agricultural credit either by means of cooperatives or by networks of branch banks.

For programme outputs to make sense, statistical figures either in connection with increased productivity, greater achievement or more acquired knowledge, should reflect the reality. Invariably, the Ministry of Agriculture often comes out with high production figures of some important crops to create the impression that some achievement has been made. Most often, these production figures turn out to be highly provisional and do not reflect the

reality on the operational ground (Ghana Economic Survey 1969). The production figures for sorghum and other food crops in Ghana between 1964 and 1969 created the impressions that some agricultural gains had been made in 1969 over and above those of 1968 (Ghana Economic Survey 1969). However, the estimated production figures turned out to be highly provisional. In the light of such impressions; programmes that would have otherwise been improved, or even stopped altogether, would continue because the impression about them have been derived from baseless assumptions. A true picture of a system's output helps to put any given programme on the right perspective.

Abugri (1992) reported from Wa in the Peoples Daily Graphic (issue No 12885 of May 1, 1992, p.16) that some agriculturists in the Upper West Region had suggested that Urea Chemical fertilizer introduced to farmers a few years ago must be stopped. Abugri (1992) reported that large stocks of Urea fertilizers from previous farming seasons remained unsold throughout the Upper West Region because many farmers preferred ammonium sulphate. The farmers were reported to have complained about the application of Urea which was cumbersome and ineffective in terms of crop yields.

Guaranteed prices for farmers' products will help farmers themselves to contribute greatly towards the improvement of their conditions. It is in this connection that section II, article (d) of the 1975 FAO World Conference on credit for farmers in development countries is very important. The article reads in part:

That governments ensure the participation of small farmers in the formation of agricultural credit policies, and to this end encourage the development of cooperatives, farmers' groups or organizations capable of influencing policy decisions, and generally promote effective farmer representation on the boards of agricultural credit institutions. (FAO Report, 1975:12).

Seed breeding to improve seed quality is an important issue in crop production. Through various breeding methods, data on yield reducing factors on sorghum was provided in 1967 in the Annual Report of the Crop Research Institute (1970:32-34). These factors were:

- Seed - set failure
- Smut (*sphacelotheca sorghii*)
- Striga and stemborer
- Midge (causing seedless heads)
- Leaf sports and Lodging
- The effect of humidity.

All these yield-reducing factors have been and are still found in the Ponyentanga area. Fighting yield-reducing factors and improving performance are not easy things. They involve money. Government budget however deals with a large number of departments. Moris (1977) suggests that field staff should anticipate that they will need to lobby for their share of the budget. Fieldstaff also need to develop a cooperative spirit among themselves and get engaged in team work as this is very important for the successful implementation of any extension project.

Paper qualification is not enough for improving performance in extension work. Moris (1977) says that people must demonstrate their knowledge in the field. Moris emphasises that supervisors should resist unnecessary transfers or the use of posting for punishment.

Extension work is intended to help people. However if the extension work is considered first before the people, much may not be achieved. Kottak (1991) believes that people should come first at all stages of the development projects that affect them. He asserts that putting people first in development interventions means eliciting the needs for change that they perceive. It also means using rather than opposing existing groups and organisations. When people are not put first, (non-participatory approach) project implementation becomes problematic.

Extension work demands some respect for farmers. Thrupp (1993) asserts that the dimension missing from most accounts of farmer-first approaches is the basic personal attitude of the outsider professional (extension officer) to the farmer. Thrupp (1993) asserts that often there is an underlying conviction that the modern specialized knowledge of the outsider has a universal validity and application which should override whatever farmers know. The attitudes, demeanour and behaviour which go with this belief prevent learning from farmers.

Reversals of behaviour and attitude, to respect of farmers as a people and the desire to learn from them, are essential complements of the farmer first approaches.

learning process.

The relationship between the extension worker and the farmer has great implication for the success of extension work. According to Kidwai (1973), an adult educates himself. The extension worker is not his teacher, he is only a friend, adviser and a helper. Kidwai (1973) asserts that the most important object of the education of the adult is to enable him to face the real conditions of life and to solve his practical day-to-day needs. For the adult, education is secondary and his profession is primary. Normally the adult can spare time for education only during his leisure, which is the only time when he can have recreation and rest. The extension worker who disregards these factors is bound to have problems in his work.

Effective extension work would have succeeded in eliminating these factors. According to Katz and Kahn (1978), to be effective means literally to have effect but more than that is usually meant. When it is said that something is effective, what is meant is that it has effect that is desired. Even though this unitary concept of effectiveness is inadequate in explaining Complex Organisations, it serves to indicate what we can think about as good or bad in the extension work that is going on in the Panyentanga area.

The success of any programme of education for adults, according to Cole (1979) depends on the degree to which the learners are made central to the process. According to Cole (1979), effective teaching must start from a consideration of the needs and interest of the learner. In this connection the extension officer in the Ponyentanga area should make himself conversant with the psychology of farmer learning. He should further establish from this psychology, the conditions which will enable the farmer to benefit from an educative experience.

Extension work may be hampered by some extension workers themselves due to their attitude and the way they think of these farmers. In the minds of these extension officers, they stereotype and condemn the farmers. They say: 'You can't teach an old dog new tricks.' (Cole 1979:31). It is established that modern research has disproved this. It has been shown that given suitable conditions, older persons can go on learning so long as they are not senile. Older persons may actually be better than younger persons at grasping the implications of certain types of information and that persons who have kept on learning throughout life perform better than those who have ceased to make any conscious learning effort (Cole 1979). In this connection, the mind and attitude of extension workers in the Ponyentanga area towards their farmers can be altered through inservice training programmes.

According to Cole (1979) sociological changes among farmers have serious implication for extension work. An adult goes through life in a series of changing social roles. A person in the social

role of a father is expected to behave in certain ways as his children grow up, and he learns to expect this behaviour of himself. In Ghana, as a person grows older, he will command greater respect, from his children and from other members of society. In this connection, it is necessary for the extension officer in the Ponyentanga area to make allowance for the social situation of the farmers. A middle-aged person who is a grandfather, a councillor, or the owner of a large house, will not take kindly to being treated without the deference such a role entitles him to. It is established that many people drop out from agricultural extension projects because persons younger than themselves treat them as school children (Cole: 1979).

The teaching of children (Pedagogy) is different from the teaching of adults (Andragogy). According to Knowles (1973) andragogical theory is based on at least four main assumptions which have serious implications for adult learning. Changes in self-concept assumes that as a person grows and matures his self-concept moves from one of total dependency to one of increasing self-directedness. When this occurs the individual develops a deep psychological need to be perceived by others as being self-directing. Thus, when he finds himself in a situation in which he is not allowed to be self-directing, he experiences a tension between that situation and his self-concept. His reaction is bound to be tainted with resentment and resistance.

The role of experience according to Knowles (1973) assumes that as an individual matures he accumulates an expanding reservoir of experience that causes him to become an increasingly rich resource for learning. Accordingly, in the technology of andragogy there is decreasing emphasis on transmittal techniques of traditional teaching and increasing emphasis on experiential techniques. These tap the experience of the learners and involve them in analyzing their experience.

According to Knowles (1993) adults are ready to learn those things they "need", that is, tasks required for the performance of their evolving social roles. Where adults are made to learn things that are irrelevant to their needs, they react negatively to the learning process. In this connection, the extension officer who lacks a fuller understanding of the psychology of learning, will not go far in his or her extension work.

Orientation to learning is an important factor in extension work. According to Knowles (1973), children have been conditioned to have a subject-Centered Orientation to most learning, whereas adults tend to have a problem-Centred orientation to learning. While the child's time perspective towards learning is one of postponed application, the adult, comes into an educational activity largely because he is experiencing some inadequacy in coping with current life problems. The adult wants to apply tomorrow what he learns today. In this connection, if the adult farmer is made to learn things he cannot apply immediately to solve his current problems, he or she may not be interested in the

learning process.

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## CHAPTER THREE

### SECTION A

#### 3.0 The Study Area

##### 3.1(i) Location

The area lies between longitudes  $2^{\circ} 15'$  and  $2^{\circ} 31'$  west of the Greenwich Meridian and latitudes  $9^{\circ} 45'$  to  $10^{\circ}$  north of the equator.

##### 3.1(ii) Geology and Soils

According to Boateng (ed), (1968) the rocks in the Panyentanga area were at one time so hot inside the earth that they were pushed up to the surface of the earth's crust, gradually cooling to form very hard rocks containing crystals. These very old igneous rocks are called granite. The area is covered entirely by this rock formation beneath the soils.

The entire area of study is covered with groundwater lateritic soils. The soils are developed over both the voltaian shales and granites (Dickson and Benneh, 1988). The principal characteristic is the presence, at generally shallow depths below the surface of the soil, of a more or less cemented layer of ironstone, called iron pan. Rain water does not penetrate easily through this iron pan. The top layers of the soil therefore become water logged right up to the surface in the rainy season, but dry out in the dry season. In colour, the soils range from combinations of yellow and brown to yellow and grey. The texture is that of silty or sandy loam and coarse sandy-loam. The soils are poor in organic matter and nutrients (Dickson and Benneh, 1988).

### **3.1(iii) Physical Features**

The entire area is marked by land rising from 1000-2000 feet. On either side of the area the land falls below 500 feet above sea level. The area is generally a plateau with interspersing low hills and high hills. The major rivers in the area are the Nyuprusi (Nyumpulsi) and Degbeli. These two rivers branch off from the Felin river, a major tributary of the Kulpawn (Kulkpong) river. The Nyumpulsi takes its source from the Wa highlands at two points; first, in the north at a point between Kadoli and Pirisi and secondly, at a point to the south at Kunfabela. The waters run to the Felin river through to the Kulkpong and finally enter the White Volta River. There are other major streams like the Gangaobao between Sonuori and Ga, Bakpeng between Kongolimo (Tomayiri) and Sagebaalong, Pureebaa at Ponyentanga and Daman-baa between Bechuuyiri and Sagebaalong. These all empty their waters in the Black Volta River in the western part of the area (Boateng, 1968; Ghana Map, 1974: Scale 1:600,000). The important point about these rivers and streams is that they create transportation difficulties to extension officers during the rainy season.

### **3.1(iv) Rainfall**

According to Dickson and Benneh (1988), the mean annual rainfall in the area of study is hundred centimeters. It has a single rainfall season from May to August. The rest of the year is a long period of dry season. According to Boateng (1968), the rainfall is very variable from year to year and within seasons. The torrential

nature of the rainfall causes soil erosion. The mean annual temperature of the area is twenty-seven degrees Celsius.

### **3.1(v) Vegetation**

According to Varley and White (1958) the vegetation of the area is completely of the Guinea-Savannah type. This starts as woodland interspersed with grassland. The original character of this vegetation has been completely changed by bush fires, usually started in the dry season by hunters and other causes. As a result, the only trees that survive are those which have thick bark and root suckers which throw up new shoots when the fire has burnt out. Each successive bush burning reduces the trees and increases the area given over to grass, and since man has been burning the bush for many centuries, it is hard to guess what the original vegetation was really like.

### **3.2(i) Agricultural Activities**

The primary agricultural activity in Ponyentanga area is sorghum farming. All other activities such as yam farming, rice farming and groundnut farming were secondary to sorghum cultivation.

### **3.2(ii) Political Authority**

Traditionally, each village in the Ponyentanga area is ruled by a sub-chief and his council of elders. All cases in connection with land are referred to the landlord (Tendana) for interpretation. The Wa-Naa who is paramount chief of the Wa District, exercises

complete control over all the sub-chiefs and people of the area. While the landlord is responsible for all land matters, the acquisition of land must also seek the consent of the chief in the area. The nature of land acquisition makes the involvement of the Tendanas and the chiefs in extension work imperative as they can stop any project that is going on in any part of their land.

From the perspective of modern government each village in the area has Unit Committees which deal with matters in connection with law and order. These committees are answerable to one of the three Assembly Members to whom they are directly responsible. The three Assembly Members were elected from Ponyentanga, Tanina and Jenbob. The Assembly Member from Ponyentanga is literate while the other two are illiterate. The Assembly Members are answerable to the District Chief Executive. Here again, Extension officers will have to involve these Assembly members in their work as opinion leaders of their people.

### **3.2(iii) Water Supply**

There are eight bore-holes scattered over the eight locations in the Circuit. Besides these bore-holes, water is obtained from streams and ponds which dry up during the long drought period. Some people in the circuit don't drink the water from the bore-holes because to them, it is tasteless. Invariably such people get infested with guinea-worm.

### **3.2(iv) Health Facilities**

There is only one small private clinic at Ponyentanga which caters for minor ailments in the circuit. All major cases are referred to the Wa Government hospital which is over 20 miles away from some of the villages. Quack-doctors have seized this opportunity to be operating in the circuit. All ailments are attributed to the wrath of the gods who must be pacified for good health to be restored. Occult consultation is, therefore, very common in the circuit. Herbal medicines are also very common. The houses in the circuit are quite dispersed and have no problem of space. However, most people do not clean around their houses thus creating a serious sanitation problem. Extension officers could include health education in their programmes to fight superstition. Unattended ailments among farmers could lead to potential loss of labour.

### **3.2(v) Transport and Communications**

A trunk road runs through the circuit almost diagonally from north east at Pisi to South west at Nyoli where it enters the northern region. There are no other roads in the circuit. The villages are linked to the trunk road through paths and tracks. The Catholic Mission has undertaken the construction of a few minor roads to link some of the villages to the main road. Travel by foot is still the practice for most people especially women. Most men use bicycles. Headportorage is still used to convey goods from one part of the circuit to the other.

There is no post office in the circuit. The village teachers and catechists serve as postal agents who accumulate enough letters and sent them to Wa for postage any time their duty compels them to go there. Similarly, they collect accumulated letters from the Wa post office for distribution to their owners on market days in the villages when they are likely to meet them.

### **3.2(vi) Commercial Centres**

There are three large markets located at Pisi, Ponyentanga and Nyoli. The circuit has a week of six days and these markets come on once every week. The peasant farmers sell their food products at these market centres to middle persons who are mostly Wala women. These women buy the food products from the farmers, store them and resell them to the same farmers during the "hungry season" for a profit. Each of the villages has its own small market day where the people gather to buy and sell as well as exchange ideas.

### **3.3.0**

### **SECTION B**

#### **3.3(i) Sorghum Cultivation**

According to Martin and Leonard (1970), sorghum is commonly called guinea-corn. It is a coarse grass with culms 2 to 15 feet high. The culms are similar to those of corn or maize. Sorghum plants can easily be differentiated from that of maize because of the sawtooth margins of their leaves. Some varieties of sorghum have sweet juicy pith in the stalks; others are juicy but not sweet. There are

others still which lack both juice and sweetness. Botanically, this crop belongs to the crop known as Andropogoneae and crop family gramineae.

The annual sorghums have many varieties, namely, grain sorghum, sorgo, broom-corn, and another called the Sudan-Grass. The Sudan-Grass is typically found in West Africa. It found its way to Ponyentanga circuit through the movements of traders and slaves (Martin and Leonard, 1970).

One variety of the Sudan-Grass is the Kafir which is the type found in the Circuit. The general name of sorghum in Ponyentanga Circuit is "Kyi".

Other variety names include:

- |                     |             |
|---------------------|-------------|
| a. Pokuore la tuore | d. Hamara   |
| b. Kyere            | e. Kondaboo |
| c. Gyebara          | f. Murifii  |

### 3.3 (ii) Suitable Conditions for Sorghum Cultivation

According to Martin and Leonard (1970), Cobley (1965), Sorghum is grown in warm or hot regions that have summer rainfall. The crop can also be grown in hot irrigated areas. The most favourable mean temperature for the growth of sorghum is 26.7 degrees Celsius. The minimum temperature for growth is 15.6 degrees Celsius. Sorghum is able to withstand extreme heat better than some crops. The crop needs an average annual precipitation of 42.5cm to 62.5cm. During periods of drought, the plant remains dormant but resumes growth as soon as there is sufficient rain to wet the soil. It is this

characteristic of the crop that enables it to survive in dry areas. For this same reason, it is referred to as crop camel. The leaves and stalks of the crop wilt and dry more slowly. This enables it to withstand drought much longer.

The crop is grown successfully on all types of soil including that found at Ponyentanga. In most seasons the highest yields are obtained on heavy soils (soils with organic matter and plant nutrients). It is able to withstand a considerable amount of soil salinity. Besides being resistant to drought and heat, it also resists grasshoppers, rootworms and corn-borer injuries to a larger extent.

### **3.3(iii) The Importance of Sorghum to the People of Ponyentanga**

In an area where the staple food of the people is a single crop, it is not an overstatement that such a crop is their life-wire. The people of Ponyentanga area use sorghum to brew sorghum beer. This sorghum-beer is the most common beer amongst the people. It is brewed in many houses almost daily for people to drink. The local beer, which the people call "daa" or pito gives them enough energy to cope with their daily spine-breaking work in the hot sun. The pito is also sold at affordable prices so that everybody can get access to it in order to sustain himself or herself. Even children cling to it when times are hard and other sources of food are completely absent.

Sorghum is also used to prepare "Tuonzanfi", T.Z. for short. After the sorghum grain is removed from the plant, it is used to

provide forage and hay for animals. As these animals feed on the forage their dung mix with the fodder to provide green manure. The stalks are used to provide shade in the market places to protect people from the effects of the severe sun. The stalks are also used as fuel when brewing the pito. The malt produced from the brewing process is used as animal feed especially for pigs. The malt is, therefore, sold to poultry keepers and those engaged in animal husbandry.

During difficult times, the elders drink the sorghum-beer and leave whatever food is available for the children. Sorghum is, therefore, very important for the people. Its absence in a crop culture like that at Ponyentanga can cause problems, quarrels, fights, etc. As Martin and Leonard (1970:6) say of crop cultures:

Crop culture will always be an important industry because crop products are essential to the existence of man. It has been stated that a man who goes without food for 24 hours will quarrel; One who is denied food for 48 hours will steal; and one who is without food for 72 hours will fight. Thus the difference between peace and anarchy in most countries is a matter of only a few days without food.

### **3.3(iv) Traditional Agricultural System in Ponyentanga**

Sorghum used to be commonly planted alone but because of shortage of land in the Circuit it is being inter-cropped with beans, bambara beans, groundnuts and maize. In fact, the mode of sorghum production in the Ponyentanga area is one that leaves much to be desired. Already, there is struggle for land as all the available land to the various clans has been used up. The fringes of farms

are obstinately altered by competing farmers. This brings about petty squabbles in which might reigns.

Malthus noted this same problem of insufficient food for an increasing population in 1798 and stressed that population increase should not be above the maximum supply of food. When this is the case, such crude checks as war, famine, pestilence and premature mortality come in to control population. (Martin and Leonard, 1970). In our world today when there is a hard struggle against war in favour of peace, when premature mortality is greatly reduced by improved scientific technology and all forms of pestilence are fought, it behoves us all to fight famine by making researches to find empirical solutions to our survival issues such as this dissertation intends to do.

#### 3.4.0

#### SECTION C

##### 3.4(i) The Ministry of Food and Agriculture

##### 3.4(ii) Historical Background

The present Ministry of Food and Agriculture indeed evolved from the botanical department at Aburi. According to Anyane (1963) the first curator of the agricultural and industrial gardens at Aburi was William Crowther who was appointed to this office on 15th February, 1890. Development was rapid and by 1903, large-scale nursery trials had been undertaken at Accra, Ada and Keta where experimental farms were established. Others were established at Labolabo (105 acres) and Anum (27 acres) in Volta District. By

1907, an agricultural station was established at Asuansi in the Central region. One station was opened in Tamale in 1909 to develop cotton. Many other sub-stations were opened but the one opened in Wa to take care of the Panyentanga area was in 1918.

The establishment of an agricultural station in each region and substations throughout the country helped to introduce to the farmer new crops and improved methods of cultivation. It also facilitated the distribution of improved plants and seeds and offered facilities for training local subordinate staff, like the extension officers at Panyentanga.

While colonial efforts at improving agricultural development as expounded by Anyane (1963) were essential and very important, they would appear to be weak in many respects. This was so because colonial agricultural development efforts were directed mainly towards improving the cultivation of cash crops which were of direct interest to the colonial masters rather than the peasant farmers. Any agricultural extension effort that does not seriously develop the staple food crops of the peasant farmer might not succeed.

### **3.4(iii) Departments**

The Ministry of Food and Agriculture has eight different departments to cater for improved work among farmers and hence improve food production. The departments are:

1. Agricultural Extension Services Department
2. Animal Health and Production Department

3. Crop Services Department
4. Policy Planning, Monitoring and Evaluation Department
5. Fisheries Department
6. Plant Protection and Regulatory Service Department
7. Agricultural Engineering Service Department
8. Women In Agricultural Development Department (WIAD)

The department solely responsible for contacting farmers is the Extension Services Department. In fact, the farmers 'operate' the soil while the extension officers 'operate' the farmers. The important issue at stake is whether the farmer does his work well and most importantly, whether the extension officer does his part of the work well.

Since my main concern is on the Agricultural Extension Services Department, I shall discuss its staffing in the Wa District and in the Ponyentanga area in particular.

The entire district is divided into fifteen areas. Each of these areas is headed by a technical officer known as "Front-Line Staff". At the district office, there is the district extension officer and two supervisors. Each of the fifteen areas used to have four field assistants but all have been retrenched as at now. The Ponyentanga Circuit has only one Front-Line Staff with no field assistant. The position of field assistant is however not abolished.

**3.4(iv) Agricultural Extension Services Department:****Wa District Personnel Management Chart.**

DISTRICT EXTENSION OFFICER

SUPERVISORS

TECHNICAL OFFICERS

FIELD ASSISTANTS

The District Extension Officer issues directives which are implemented by two supervisors. The two supervisors supervise the work of the fifteen front line staff members (Technical Officers). The front line staff members are in direct contact with the farmers in their operational areas.

**3.4(v) The Role of the Extension Services Department**

The role of the extension services department is to ensure that farmers, through extension officers, are educated on the following:

- (a) Good land preparation
- (b) Fertilizer and Soil fertility
- (c) Good seeds and timely planting
- (d) Proper and effective weed and disease control
- (e) Good timely harvesting

- (f) Proper processing and good storage
- (g) Achievement records and cost of production
- (h) Preparation of farm budget.

The extension services department of the Ministry of Food and Agriculture is also to ensure that extension officers visit or contact farmers and disseminate ideas on the above areas of crop production. There is only one Technical Officer in the Ponyentanga Circuit. He has been given a motor-cycle for his trekking rounds. Despite this elevation from "feet to bike" many of the roads are just too bad even for a motor-cycle especially in the wet season. The implication is that most farmers become inaccessible to the Technical officer. The necessary information is therefore not given.

In the face of these problems in the Ponyentanga Circuit the Extension Services Department cannot be of much assistance to the farmers even if extension officers with the requisite technical skills are sent there unless the basic problems confronting them are resolved.

Mathur (1986) also expressed his concerns towards farmer - extension officer relationship as:

... most administrators are firmly of the view that they alone know all about development, and that only their answers to development problems are the right ones. The one role that they are willing to concede for the people is that of acting as recipients of services offered by government agencies set up to promote development.

### 3.5 The Work of the Technical Officer

Ponyentanga and its surrounding villages were ear-marked as an area for extension service work. Thus within the last ten years, extension officers were sent there to help in the development of sorghum production.

The Technical Officer in Ponyentanga is the closest agricultural officer to the farmer. He visits the farmers in their houses and in their farms to guide and counsel them on new farming methods. He also directs the attention of farmers to improved varieties of new seeds that would give better yields. He measures the sizes of the farmers' farms and keeps record of their total outputs at the end of the farming season. The Technical Officer in Ponyentanga also undertakes projects with the farmers in the cultivation of various crops to show them how best they could apply the methods to their advantage. He makes reports about farming disasters like pests or insects destroying crops, and various crop diseases that may infect an area. It was with the above objectives in mind that the Technical Officers were introduced in the Ponyentanga Circuit.

## CHAPTER FOUR

### 4.0 PRESENTATION AND ANALYSIS OF DATA

#### General Introduction

According to Kerlinger (1993), analysis is the ordering, the breaking down of data into constituent parts in order to obtain answers to research questions and to test research hypotheses. He asserts that the analysis of research data, however, does not in, and of, itself provide the answers to research questions. Interpretation of data is necessary. To interpret is to explain, to find meaning. Interpretation takes the results of analysis, makes inferences pertinent to the research relations studied, and draws conclusions about these relations. The researcher who interprets research results searches them for their meaning and implications (Kerlinger, 1964; 1973).

Chapter four is divided into two sections, (A and B), in line with the structure of the questionnaire and interview schedule. In section A, the personal data (biographical characteristics) of the extension officers and the farmers shall be critically analyzed. Findings and conclusions from studies already made-theories, shall be used to support and explain the relevance of these biographical characteristics to the study. Section B shall be devoted to a critical analysis of front line information from the extension officers whose work is being evaluated, and information from the

farmers.

## SECTION A

### 4.1 CHARACTERISTICS OF PARTICIPANTS

#### (i) PROFILE OF THE EXTENSION OFFICERS

According to Robbins (1989), when individuals enter an organization, they are a bit like used cars. Each is different. Some are "low mileage" - they have been treated carefully and have limited exposure to the realities of the elements. Others are "well worn", having experienced a number of rough roads. This simile, according to Robbins, indicates that people enter organizations with certain characteristics that will influence their behaviour at work. The more obvious of these are personal or biographical characteristics such as one's age, sex, and marital status; one's personality characteristics, one's values and attitudes; and one's basic ability levels. These characteristics are essentially intact when an individual enters the work place, and, for the most part, there is little management can do to alter them. Yet they have a very real impact on employee behaviour

The questionnaire on the extension officers helped to gather information on their social characteristics. These characteristics form the social environment upon which the study has been based. According to Dewey (1996), a being whose activities are associated with others has a social environment. What he does and what he can do depend upon the expectations, demands, approvals, and condemnations of others. Thinking and feeling that have to do with

action in association with others are as much a social mode of behaviour as is the most overt cooperative or hostile act. The social characteristics of the extension officers form a social medium that nurtures and shapes their external habits of actions.

There was one Technical Officer in the Circuit. The implication of this to extension work is that the physical ability of the Technical Officer may be affected. According to Robbins (1989), ability is an individual's capacity to perform the various tasks in a job. Physical ability, according to him, is that ability required to do tasks demanding stamina, dexterity, strength, and similar skills. Extension work demands stamina, manual dexterity, leg strength, and similar abilities the absence of which may affect job performance.

Research on the requirements needed in hundreds of jobs has identified nine basic abilities involved in the performance of physical tasks. These include:

- (a) Dynamic Strength - the ability to exert muscular force repeatedly or continuously over time.
- (b) Trunk Strength - the ability to exert muscular strength using the trunk (particularly abdominal) muscles.
- (c) Static Strength - the ability to exert force against external objects.
- (d) Explosive Strength - the ability to expend a maximum of energy in one or a series of explosive acts.
- (e) Extent flexibility - the ability to move the trunk as far as possible.

- (f) Dynamic flexibility - the ability to make rapid, repeated flexing movements.
- (g) Body Coordination - the ability to coordinate the simultaneous actions of different parts of the body.
- (h) Balance - the ability to maintain equilibrium despite forces pulling off balance
- (i) Stamina - the ability to continue maximum effort requiring prolonged effort over time (Fleishman 1979:82-92).

Extension work demands some or all of the above basic physical abilities. However, individuals differ in the amount to which they hold each of these abilities. High employee performance is likely to be achieved when management has ascertained the extent to which a job requires each of the nine abilities and then ensures that employees in that job have those abilities. One Technical Officer is not likely to have all the nine physical abilities in large amounts to ensure effective performance.

The highest level of education attained by the Technical Officer and one of the retrenched field assistants was Agricultural Certificate<sup>1</sup> while three field assistants had only the Middle School Leaving Certificate. Educational attainment has serious implications for satisfactory job performance of the extension officers. It is acknowledged that everyone has strengths and weaknesses in terms of intellectual ability that make him or her relatively superior or inferior to others in performing certain tasks or activities (Tyler, 1974).

From management's standpoint, the issue is not whether or not people differ in terms of their abilities. The issue is how people differ in abilities and using that knowledge to increase the likelihood that an employee will perform his or her job well. Intellectual abilities are those needed to perform mental activities. Some of the more relevant dimensions making up intellectual abilities include number aptitude, verbal comprehension, perceptual speed, and inductive reasoning. All these are enhanced by education. The higher the education, the more refined these elements of intellectual ability become. From evidence collected in the field, the low level of education of the front-line extension officers may, to a larger extent, affect satisfactory job performance.

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1. *An Agricultural Certificate is a certificate awarded to a person who has undergone three years agricultural training in an Agricultural Institute in Ghana.*

Also only one extension officer had a motor cycle. The other four had bicycles which they used in their work. When these vehicles were out of order, the officers had to walk to their clients because of the remoteness of their places to other vehicular traffic. Poor means of transport makes it difficult for the extension officers to reach out to the target groups. In this way, the effectiveness and efficiency in the education of farmers are affected. The ability to supervise and ensure that what is taught is maintained is also affected. However well farmers know themselves and monitor their own work, they still need guidance from others from time to time. They also need an observer of their work who could give them some constructive and critical appraisal. According to Roberts (1991), everyone needs positive feedback and appreciation of the work they have done. Since farmers cannot effectively and efficiently prescribe for themselves how to improve upon their work, poor monitoring is likely to make them go back to their old practices.

#### **4.1 (ii) Age.**

The age distribution of the five extension officers has important implication for extension work. Data collected from the field showed that the Technical Officer was within the age range of 51-55. Two field assistants were within the age range 21-25. One field assistant was within the age range 26-30 and another within the age range of 36-40.

Age is respected in the Circuit where the study was conducted and people are more likely to listen to adults than to children and adolescents. According to Robbins (1989), the older you get, the less likely you are to quit your job.. However, there is a wide spread belief that productivity declines with age (Robbins, 1989). It is often assumed that an individual's skills- particularly speed, agility, strength, and coordination - decay overtime, and that prolonged job boredom and lack of intellectual stimulation all contribute to reduce productivity. The skills of older persons may also become obsolete with new technology-computer literacy, for example (Robbins, 1989). In this regard, the age of the Technical Officer (51 years as reported by himself) may affect his physical and mental abilities. This may affect his effectiveness in his job performance.

#### **4.1 (iii) Religious and Gender Issues.**

People who share the same religious denomination and gender often share common traits in thought and action. All the extension officers were Catholics and males. The issue of gender brings to the fore some debates as to whether females perform as well on jobs as do males. Evidence suggests that there are few, if any, important differences between males and females that will affect their job performance. According to Powell (1988), there are, for instance, no consistent male-female differences in problem-solving ability, analytical skills, competitive drive, motivation, leadership, sociability, or learning ability.

In spite of Powell's Observation, psychological studies by Maccoby and Jacklin (1974) found that women are more willing to conform to authority and that men are more aggressive and more likely than women to have expectations of success. Also, evidence consistently indicates that women have higher rates of absenteeism than do men (Flanagan, Strauss, and Ulman, 1974). The most logical explanation for this finding is that our society has historically placed home and family responsibilities on the female. When a child is ill or someone needs to stay home to await say the plumber, it has been the woman who has traditionally taken time off work.

#### **4.1 (iv) Marriage and Extension Work**

Two of the extension officers were married and three were single. There are not enough studies to draw any conclusions as to the effect of marital status on job effectiveness and efficiency-productivity. But consistent research indicates that married employees have fewer absences, undergo less turnover, and are more with their jobs. According to Garrison and Muchinsky (1981), marriage imposes increased responsibilities that may make a steady job more valuable and important. Thus, it may very well be that conscientious and satisfied employees are more likely to be married (Garrison and Muchinsky, 1981).

#### **4.2 PROFILE OF THE RESPONDENT FARMERS**

An Interview Schedule also elicited information about the social characteristics of the farmers whose farming methods have been

the target of influence. In all, one hundred farmers including one woman located in eight villages were interviewed. Table 1 is a distribution and gender of respondent farmers.

**TABLE 1**

**Distribution and Gender of Respondent Farmers.**

Location	MALES		FEMALES		TOTAL	
	No.	%	No.	%	No.	%
Nensooteu	20	20	-	-	20	20
Kalsegraa	13	13	1	1	14	14
Oloyiri	12	12	-	-	12	12
Taambile	12	12	-	-	12	12
Daribaateu	12	12	-	-	12	12
Bechuuyiri	10	10	-	-	10	10
Maaduteu	10	10	-	-	10	10
Jenbob	10	10	-	-	10	10
Total	99	99	1	1	100	100

$N = 100 = 100\%$

Majority of the farmers were from Nensooteu and Kalsegraa. There was only one female respondent from Kalsegraa. The mode of choice of the eight villages and the reasons why there was only one woman among the respondents are already explained on page 9 of this dissertation. All those interviewed were people aged between 40 and 60 years. They were either married or widowed as the responses to question two in the interview schedule show in Table 2.

TABLE 2  
Marital Status of Farmers

MARITAL STATUS				
LOCATION	NO. OF FARMERS	MARRIED (%)	WIDOWED (%)	TOTAL (%)
Nensooteu	20	20	-	20
Kalsegraa	14	10	4	14
Oloyiri	12	11	1	12
Taambile	12	12	-	12
Daribaateu	12	12	-	12
Bechuuyiri	10	10	-	10
Maaduteu	10	10	-	10
Jenbob	10	10	-	10
Total	100	95	5	100

N = 100 = 100%

Table two shows that ninety-five percent (95%) of the farmers were married while five percent (5%) including the only woman were widowed. Farming activities seems to be a process involving couples and families rather than individuals. According to Kimmel (1974), change in status and resocialization involves reformulating the whole range of social ties-to one's children, relatives, friends and work partners. In this regard, the five percent widowed respondents may be affected in their job performance as it sometimes takes years for widowed people to readjust to normal life's activities (Kimmel, 1974).

Family size of households range between two and ten as indicated by responses to question three in the interview schedule. Educationally, all the hundred farmers were illiterates. Their parents (Father and Mother) were also illiterates. The fact that all the respondent farmers and their parents were illiterates should not be seen as a surprise because the illiteracy trends in Ghana are indicative of this fact.

According to Dorvlo (1993), the 1984 Ghana Population Census showed that there were 2,556,654 illiterate adults in Ghana. It also indicated that there were 63 female illiterate adults in every 100 female adults, and 41 male illiterate adults in every 100 male adults. Dorvlo (1993), further states that a projection made recently by the world bank for the Government of Ghana states that there are 5.6 million illiterate adults. He states that according to this projection, there are 82 female illiterate adults in every 100 female adults, while there are 57 male illiterate adults in every 100 male adults in Ghana. Dorvlo emphasizes that in Ghana, about 40% of children of school-going age do not go to school for various reasons and that this percentage rises as one goes from the south to the north of the Country. It is, however observed that people's techniques of doing things, their beliefs, values and attitudes are shaped to a large extent by their level of education.

According to Miller (1969), a change from one state to another of any of these bases for behaviour requires some conviction that present techniques, beliefs, values and attitudes

are inadequate. This conviction however, is a product of education. The farmer who lacks education may not realize that his beliefs, values, attitudes and techniques of doing things are inadequate for his personal development and continuous survival. Illiteracy with its accompanying superstition is a hinderance to agricultural education and other agricultural innovations. It is in this connection that Dorvlo (1993) states that literacy efforts should liberate the minds of both the educators and educatees and effect favourable social change. This, according to him, means the qualitative transformation of man and his environment.

According to Cass (n.d.), the characteristics of adults who have little or no ability in the skills of communication indicate some of the underlying needs that must be met in preparing to work with them. Programmes must sufficiently arouse their interest in order to motivate and encourage them to continue participating in them. Robbins (1989) emphasizes this point by saying that no group can exist without communication: the transference of meaning among its members. It is only through transmitting meaning from one person to another that information and ideas can be conveyed. An idea, no matter how great, is useless until it is transmitted and understood by others. Lack of communication skills can neither help a farmer to properly transmit an idea nor enable him to understand the implication of an idea. The religious background of the respondent farmers is shown in Table 3.

TABLE 3

## Religious Background of Farmers

RELIGION	%
Catholics	4
Muslims	6
Traditional Religion	90
Total	100

N = 100 = 100%

From table 3 above, four percent (4%) of the farmers were christians, six percent (6%) were Muslims while ninety (90%) were practising traditional religion. According to Du Sautoy (1960), the receptivity of the human mind is limited and one must never forget the quality of one's audience, for the rural communities, among whom the extension worker is most commonly found, are notoriously conservative. In this connection, it is best to introduce new ideas one at a time and allow them to be absorbed. The extension worker in an illiterate community should have the teaching of literacy as one of his weapons. Du Sautoy (1960) stresses that though literacy is not an end in itself, the task of the educator (Technical Officer) is greatly eased if he is able to make use of the written as well as the spoken word.

Disperse farming is the general practice in the Circuit. The nearest farms are a kilometre away from the farmers' houses while the farthest farms are five kilometres away. Farmers walk to these farms and back to their homes everyday. This is because majority are too poor to buy bicycles. This is likely to affect

their physical abilities and lead to a reduction in work output.

The sizes of farms in acres per year is shown in Table 4.

TABLE 4  
Farm Sizes in Acres Per Year

SIZES OF FARMS IN ACRES PER YEAR

Location	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	Total (%)
Nensootzu	6	6	4	4	-	-	-	-	20
Kalsegraa	2	5	4	3	-	-	-	-	14
Oloyiri	1	6	2	3	-	-	-	-	12
Taambile	-	2	3	3	2	2	-	-	12
Daribaateu	-	3	3	2	1	2	-	1	12
Bechuuyiri	1	5	3	1	-	-	-	-	10
Maaduteu	-	-	-	-	-	2	6	2	10
Jenbob	1	2	4	3	-	-	-	-	10
Total	11	29	23	19	3	6	6	3	100

N = 100 = 100%

The highest acreage of sorghum cultivation was at Daribaateu and Maaduteu where in all, three farmers cultivated between thirty six and forty (36-40) acres of sorghum. It is generally observed that majority of the farmers (82%) cultivated between one and twenty (1-20) acres of sorghum while 18% cultivated between twenty one and forty (21-40) acres of sorghum. It is further observed that the 18% of the farmers who cultivated 21-40 acres of sorghum were from only three locations - Taambile, Daribaateu, and Maaduteu. Maaduteu is the only location where the farmers

have high sorghum cultivation in acreages between twenty six and forty acres. These high cultivation figures, however, do not attract good attention from the extension officers as the general response of farmers in this village to question 16 indicated that the extension officers never visited them. While it was found that there were many sorghum diseases in this village (Maaduteu) including "Kamara, Kadandulo, were and Mareku", nothing was done about these diseases as the responses of the farmers to question eleven (11) of the interview schedule indicated. The probable reason for the high cultivation figures might be that farmers just try to increase their acreage so that after the sorghum diseases have destroyed some of the crops, they can still have something for themselves.

Despite the efforts of the farmers the sorghum yield is not always much as shown by the production figures in Table 5.

TABLE 5  
Number of Bags of Sorghum Per Year

## NO OF BAGS OF SORGHUM IN THE YEAR

LOCATION	% OF FARMERS	1-5	6-10	11-15	16-20	TOTAL %
Nensooteu	20	3	13	3	1	20
Kalsegraa	14	-	11	2	1	14
Oloyiri	12	-	8	4	-	12
Taambile	12	2	8	2	-	12
Daribaateu	12	4	4	3	1	12
Bechuuyiri	10	3	7	-	-	10
Maaduteu	10	-	-	-	-	-
Jenbob	10	2	4	3	1	10
Total	100	14	55	17	4	90

$$N = 100 = 100\%$$

Table 5 above shows that 14% of the farmers in the Circuit produce between one and five (1-5) bags of sorghum in the year. Fifty-five percent (55%) of the farmers in the Circuit produce between six and ten (6-10) bags of sorghum. Seventeen percent (17%) produce between eleven and fifteen (11-15) bags of sorghum while only four percent (4%) produce between sixteen and twenty (16-20) bags of sorghum. At Maaduteu, estimates of annual sorghum harvest could not be given in terms of bags but barns. Ten percent of the farmers located in this area claimed that they filled a barn each of sorghum but the number of bags that could

fill a barn could not be estimated.

Sorghum cultivation is not just a set of random activities. As a system, it entails a set of interrelated activities which must all be carried out properly in the farming cycle if success is to be achieved. Effective land usage and disease control can make a difference between good and bad harvest. It is in this sense that extension officers have to widen their influence to cover all the farmers in the circuit in order to re-shape the farmers' mode of operation on their sorghum farms.

Farmers' responses to questions 44 and 45 of the interview schedule in the Circuit generally indicate that at harvest, a bag of sorghum costs 20,000.00 and 32,000.00 during the lean season. This means that the following amounts could be earned by the farmers if their bags of sorghum were converted into physical cash as shown in Table 6.

**TABLE 6**

**Level of sorghum Income Per Year**

NO. OF FARMERS	AMOUNT IN CEDIS	
	HARVEST TIME	LEAN SEASON
14	20,000-100,000	32,000-160,000
55	120,000-200,000	192,000-320,000
17	220,000-300,000	352,000-480,000
4	320,000-400,000	512,000-640,000

N = 90 = 90%

Table 6 above shows that during harvest time ninety percent (90%)

of farmers in the Circuit could earn between twenty thousand and four hundred thousand cedis (20,000-400,00). During the lean season the ninety percent (90%) of the farmers could earn between thirty two thousand and six hundred and forty thousand cedis (32,000-640,000). Unfortunately the farmers do not earn the amounts indicated in the lean season. This is because the sorghum is mostly sold to market Queens and Pito Brewers during harvest time as indicated by farmers' responses to question 47 of the interview schedule. It means that for every bag of sorghum sold during harvest time, a farmer loses twelve thousand cedis he or she would have earned during the lean season. Ten percent (10%) of the farmers could not estimate their sorghum in terms of bags.

Effective work however depends on motivation. Armstrong's (1994) reinforcement theory suggests that successes in achieving goals and rewards act as positive incentives and reinforce the successful behaviour, which is repeated the next time a similar need arises. Because of the exploitation of the farmers in the circuit by market Queens and Pito Brewers, these farmers do not get sufficient funds to attend to the numerous problems in their farms like Sorghum diseases, land cultivation and weed control as shown by their responses to question forty-two of the interview schedule in table 7.

Table 7

Level of Expenditure on Sorghum Farming in the Year

LOCATIONS									
Amount in Thousands of Cedis	Nensoota	Kalseg-raa	Oloyiri	Taambile	Daribaa-teu	Bechuu-yiri	Maadu-teu	Jenbob	Total
	%	%	%	%	%	%	%	%	%
Below 100	4	2	6	3	5	7	6	7	40
100-200	4	6	2	7	3	3	4	3	32
201-300	-	3	-	2	1	-	-	-	6
301-400	-	1	-	-	1	-	-	-	2
401-500	-	1	-	-	1	-	-	-	2
501-600	-	1	-	-	1	-	-	-	2
Total	8	14	8	12	12	10	10	10	84

$$N=100 - 16 = 84 = 84\%$$

From Table 7 above, it is observed that forty percent (40%) of the farmers in the Circuit spent below one hundred thousand cedis on their Sorghum farms. Thirty two percent (32%) of them spent between hundred thousand cedis and two hundred thousand cedis on their sorghum farms. Also, twelve farmers in all spent between two hundred and one thousand cedis (201,000.00) to six hundred thousand cedis (600,000.00) on their sorghum farms. From the table, seventy two percent (72%) spent up to two hundred thousand cedis (200,000.00) on their sorghum farms. In all, sixteen (16) farmers in the circuit did not provide estimates on expenditure on their sorghum farms.

Considering the fact that there were numerous sorghum diseases in the circuit (wombile, kamara, Nyirkpolinkpor, Kadandule and Were)

as responses to question ten of the interview schedule indicated, the above levels of expenditure seem not to reflect the real expenditure levels adequate for effective sorghum farming. This view seems to be confirmed by responses to question fifty two of the interview schedule which indicated that most farmers sold their goats, guinea fowls and other crops to self-finance their Sorghum.

People normally expect to get something for engaging in an activity. Where this is lacking, there is no motivation for continuous engagement in that activity. Expectancy theory, as originally developed by Vroom (1964), states that for there to be a heightened motivation to perform, individuals have to feel able to change their behaviour, feel confident that a change in their behaviour will produce a reward, and value the reward sufficiently to justify the change in behaviour. It is in this connection that extension officers could help farmers as under-performers to improve their performance in sorghum farming. Managing under-performers according to Fisher (1995), is a positive process which is based on feedback throughout the year and looks forward to what can be done by individuals to overcome performance problems.

## SECTION B

### 4.3 Front-Line Information

#### Introduction

Section B is a test of the assumptions in this study that the methods of educating the farmers in the Ponyentanga Circuit did not succeed in bringing about any meaningful change in the values,

ideas, beliefs and farming practices of the people. It does this by trying to find answers to questions raised under the statement of the problem in chapter one of this study. A critical examination of the responses of extension officers is made and compared with responses made by farmers in the circuit to either confirm their validity or otherwise. The implication for extension work of conclusions and inferences drawn from the various responses will be stated using theories to back them up.

#### **4.4. Production Techniques Of The Farmers**

A technique is a method of doing or performing something. According to Leigh (1988), Force Field Analysis (FFA) is a technique that helps to analyse situations that you want to change. Using it you can tackle seemingly immovable obstacles to change. The Force Field Analysis assumes that at any given moment, any situation in an organisation is in a state of equilibrium. In like manner, around the farmer there are some dynamic tensions between whole sets of counteracting forces that maintain the status quo in the way the farmer operates his farm. Change is possible only when one or both of the following occur; restraining forces weaken and driving forces strengthen.

In this connection, extension officers can strengthen those driving forces that farmers have and weaken those restraining forces of farmers which prevent adoption of innovation. According to responses from the extension officers, some techniques were applied to improve upon farmers productivity using various

educational methods. According to all the five extension officers, farmers in the Circuit were introduced to bullock or donkey ploughs. All the respondent farmers used the cutlass, the traditional hoe, the dibble stick and small axes. None of them employed the bullock or donkey plough or made use of a tractor.

All the five extension officers indicated that the educational methods they employed included individual home and farm visits, lecture meetings and group discussions. Also, farmers' Associations, Demonstration farms and market place contact were used as mediums of instructing farmers in the Circuit. Film shows were not used and farmers never went to the extension officers for consultation. The extension officers' claim that the above educational methods were used do not wholly conform with the farmers' responses on this issue as shown in Table 8.

Table 8

Farmers' View of Educational Methods used by Extension Officers on them.

Educational Method used	Location			Total
	Nensooteu	Bechuuyiri	Jenbob	
	%	%	%	%
Individual Home Visits	-	4	10	14
Individual Farm Visits	-	4	10	14
Lecture Meetings			10	10
Group Discussion	-		10	10
Farmers go to Officers	-			-
Farmers Associations	20*	10*	10*	40
Demonstration Farm	-		10	10
Film Shows	-			-
Market Place Contact	-	4	10	14
Total	20	22	70	112

\* Defunct Farmers' Associations and Demonstration Farms

Table 8 above shows that all educational methods except two were applied at Jenbob. Film shows were not applied at any of the

locations including Jenbob. Farmers in Jenbob also never went to the extension officers personally for consultation. Responses from farmers' in Jenbob also indicated that both the Farmers' Association and Demonstration Farm were defunct. Individual home and farm visits were also carried out to four percent (4%) of the farmers at Bechuuyiri as shown in Table 8. There was a defunct Farmers' Association at Bechuuyiri. At Nensooteu there was a defunct Farmers' Association. A possible explanation for the concentration of work at Jenbob might be its nearness to Ponyentanga (Map 1) where all the extension officers lived. Nothing was done at kalsegraa, Oloyiri, Taambile, Daribaateu and Maaduteu. This contradicts the claim by extension officers that educational methods intended to improve upon farmers' performances were carried out in all the eight locations in the circuit. According to Amstrong (1994), efficient programme delivery depends on effective process - how individuals behave in carrying out their work - the behavioural competencies they bring to fulfilling their accountabilities. It would appear the delivery of the educational methods in the circuit were not effective. Farmers would therefore continue to practise their old farming methods.

No matter how good educational methods may seem, if they were planned without an initial immersion with farmers, the tendency to reject some or all of these methods is always great (Mathur, 1986). The Farmers' Associations and Demonstration Farms created by the extension officers at Nensooteu, Bechuuyri and Jenbob as

shown in Table 8 above were without consultation with the farmers. The farmers who had their own local groupings based on clan, friendship associations and age-group formations saw the new Farmers' Associations as rival groups and, therefore, rejected them and they became defunct. A bit of immersion would have helped the extension officers to identify the already existing local groupings which could have been used in much the same way as the newly created Farmers' Associations.

Farmers' responses indicated that even though market place contact was applied and covered some farmers at Bechuuyiri and Jenbob, it was the least preferred method of educating the farmers. This was because people were likely to over indulge themselves at the market and therefore could hardly remember what they were told by extension officers. While farmers' responses showed that they would have liked film shows, this method of educating farmers was not applied at all in any of the locations in the circuit. According to Brookfield (1983), immersion is necessary to find out what farmers want and not what the extension officers think is good for the farmers. This further confirms the inadequacy of the delivery of the educational methods that were used by the extension officers. The outcome of this kind of approach to educating farmers is that they may remain in their old ways.

Increased production in sorghum demands improved seed varieties. It is already noted in chapter three that there is about hundred centimeters of rainfall in the circuit. The total

rainfall has been declining because of ecological degradation and the pattern of rainfall has been changing resulting in shorter rainy seasons. In view of these changes, there is also the need for short duration seed varieties to cope with climatic changes. Generally however, long duration sorghum seed varieties are still grown in the circuit as shown in Table 9.

Table 9

SORGHUM VARIETIES SOWN IN THE CIRCUIT

SORGHUM VARIETIES				
Location	Kyere	Murifii	Pokoore La Toore	Total
Nensoogeu	20	-	-	20
Kalsegraa	10	-	4	14
Oloyiri	12	-	-	12
Taambile	7	5	-	12
Daribaateu	6	6	-	12
Bachuuyiri	-	10	-	10
Maaduteu	10			10
Jenbob	10			10
Total	75	21	4	100

N = 100 = 100%

From Table 9 above, the common local sorghum varieties are "Kyere" (75%) and "Murifii" (21%). Four percent (4%) of the farmers sow the local variety called "Pokoore la toore." None of the respondent farmers in the Circuit sowed "Kondaboo" which is the shortest

variety of sorghum in the Poyentanga area. Many of the respondent farmers go in for the longest duration varieties. In most cases however, the rains stop around October, so for the 75% of the farmers who go in for "Kyere," the longest variety of sorghum in the area, there is always the likelihood of little or no harvest at all. It is in this direction that the extension officers could influence the farmers' choice of seed varieties to be in line with the rainfall pattern. The inability of the farmers to adapt to a short variety of sorghum is likely to affect sorghum productivity in the circuit in view of the declining rainfall.

The responses of the extension officers indicated that farmers in the circuit were not prepared to change their long duration sorghums for short duration varieties. The reasons for this attitude are shown in Table 10.

TABLE 10

Reasons For Farmers' Inability to Change their Sorghum Varieties.

Reasons for Farmer's inability to change their sorghum varieties	TYPE OF EXTENSION OFFICER					
	Technical Officer		Field Assistant		Total	
	No	%	No	%	No	%
(i) Don't trust the reliability of new varieties	1	20	4	80	5	100
(ii) Kyere is good for pito while others are not	1	20	4	80	5	100
(iii) We have inherited the long varieties from our grandfather	1	20	4	80	5	100
TOTAL	3	60	12	240	15	

N = 5 = 100%

Table 10 above shows that the technical officer and the four field assistants did not agree to the suggestion that there were no alternative sorghum varieties in the Circuit. They all however, indicated that the farmers did not trust the reliability of the alternative varieties. According to them, the opinion of farmers was that while Kyere was good for pito, other varieties were not good for pito. It can be inferred from this reason that the farmers cling to long duration varieties because of their economic value. All the extension officers also cited the farmers as having said that they inherited the long duration varieties from their grandfathers and could not therefore change them. These reasons basically relate to issues of attitude - because our grandfathers cultivated long duration sorghum, we must continue to cultivate it. Attitudes are evaluative statements - either favourable or unfavourable concerning objects, people or events. They reflect how one feels about something. They are acquired from parents, teachers and peer group members. The attitudes of farmers are formed in the same way. Attitudes are important to groups and individuals because they reflect and affect the way people behave and work.

According to Robbins (1989), people seek consistency among their attitudes and between their attitudes and behaviour. This means that individuals seek to reconcile divergent attitudes and realign their attitudes and behaviour so that they appear rational and consistent. It is from this perspective that the

extension officer could create the foundation for farmers to realign their attitudes. According to Festinger (1957), any form of inconsistency is uncomfortable and people will often seek to do what they consider to be normal. In a similar way farmers will cling to what has been practised over the years by their grandparents. It is for the extension officers to convince the farmers in the Circuit that what was normal practice at one point in time may not always continue to be normal practice for all times. However, it appears the extension officers have not been able to convince the farmers in this regard as farmers' responses to question eleven (11) of the interview schedule indicate in Table 11.

#### Methods of Disease Control by Respondent Farmers

Methods of disease control	%
By Consulting the gods	26
Nothing is done	74
Total	100

N = 100 = 100%

Seventy-four of the respondent farmers did nothing about diseases affecting their sorghum while twenty-six people consulted their gods to control their sorghum diseases for them. None of the farmers used insecticides nor had any other method to control their sorghum diseases. Four of the extension officers confirmed the notion that the farmers did nothing to control their sorghum diseases while only one officer said they used insecticides. From the interview

schedule, it was established that prohibitive prices of insecticides also made it impossible for farmers to use them as a means of disease control. The implication of this for extension work is that sorghum diseases will remain uncontrolled. This will lead to reduced productivity in sorghum cultivation, which will further lead to reduced incomes generated from sorghum. The general outcome will be poverty which will lead to a vicious cycle of under-performance of sorghum farmers in the Circuit.

#### **4.5 Farm Management**

Despite the adaptive characteristics of man as a biological organism, resistance to change is an endemic feature of behaviour, and this is what makes the effective implementation of change one of the most intractable problems that interventionists can encounter. The control and organization of sorghum farms in terms of change is therefore not a mere haphazard activity. The ability to introduce change with minimum resistance is a key managerial skill, since change is a necessary way of life for all organizations (BPP, 1995).

It is relatively easy and straight forward to implement change on machines or materials, or even on animals, but it is much more arduous to cope with people because their responses are far less programmed or much less programmable. "Lead them to water in an effort to make them drink, and some, misunderstanding your message, may swim away. Others may give your message the 'file and forget' treatment" (BPP, 1995).

It is often the case that those who are spurred to action may take a sip and then try to hold your head under. Those who comply obediently may respond with inertia or resistance on the next occasion. Some may be more interested in activating you than being activated by you. The implication of these factors on the work of extension officers is the concern of this section.

Effective farm management depends on a number of factors. Assistance to farmers in farm management is one of the factors. Some form of assistance was given to farmers in Jenbob and Bechuuyiri. At Jenbob ten percent (10%) of the respondent farmers received assistance in the form of lectures on good timely harvest, proper processing and good storage of sorghum, and achievement records and cost of production. At Bechuuyiri, four percent (4%) of the farmers were given some assistance in the form of lectures on good seeds and timely planting. Four percent (4%) of the farmers were also lectured on good timely harvest, proper processing and good storage of sorghum as well as achievement records and cost of production. No form of assistance was rendered in the other settlements. Also, farmers were not assisted in anyway concerning land preparation, artificial fertilizer and soil fertility, proper and effective weed control and the preparation of a farm budget. In all, only forty-six percent (46%) of the respondent farmers in the Circuit were assisted in one form or the other. Sorghum farm management is a dismal activity covering only two locations in the Circuit. The implication of this to the extension officers is that work has not been effectively done. To the farmers, the old ways of

doing things are largely maintained as fifty-four percent (54%) of the respondent farmers never received any form of assistance. The effect of this on sorghum cultivation is reduced productivity.

#### **4.6 APPLICATION OF NEW TECHNIQUES**

The essence of new techniques is their application in work situations. According to Danks (1995), technological progress can change working materials, methods and practices. Applying new techniques should increase output, reduce cost and also help to overcome problems of boredom and job dissatisfaction. It should ensure efficiency in the work of peasant farmers, enhance survival and growth in their work. All these lead to higher standards of living. Any intervention that does not facilitate the acquisition of new techniques and their application will tend to leave the subjects on whose behalf it was made, worse off than they were before. Table 12 shows the extent to which new farming techniques were applied in the Ponyentanga Circuit.

TABLE 12

Adoption of New Techniques by Farmers in Panyentanga Circuit

Application of New Techniques by farmers	LOCATIONS								Total
	Nensoo-teu	Kalse-graa	Olo-yiri	Taam-bile	Daribaa-teu	Bechuu-yiri	Maadu-teu	Jen-bob	
	%	%	%	%	%	%	%	%	%
Use of animal droppings	20	14	12	12	12	10	10	10	100
Use of traditional barns	20	14	12	12	12	10	10	10	100
Total	40	28	24	24	24	20	20	20	200

N = 100 100%

All the hundred respondent farmers in the circuit used animal droppings in their sorghum farms. All the hundred respondents processed and stored their sorghum in traditional barns.

All other new techniques were not applied at all by the respondent farmers. The use of animal droppings may not be as effective as the use of artificial fertilizer. Responses to probing questions revealed that farmers generally did not use artificial fertilizer because of its high price. At one location (Bechuu-yiri) besides the high cost, fertilizer was not used because the farmers claimed it aggravated high levels of soil salinity. Responses to further questions revealed that the farmers themselves were able to process and store their sorghum without insects destroying them. The traditional barns were particularly protective in this regard.

The inability of the respondent farmers to apply proper land tillage is due to their lack of proper farm implements. Responses from farmers indicated that they could not afford the price of bullock or donkey ploughs or tractor services. The absence of some of these implements however affects the good preparation of farm land which also affects productivity.

The inability of farmers to sow their crops in rows is attributable to attitude as responses indicated - the way their grandfathers sowed their sorghum is the way they are also doing it. Extension Officers by their training, should have been able to influence this attitude but this has not been the case. Records of achievement and cost of production are useful because they lead to effective farm planning and farm budget preparation. All these techniques were however not applied by all the farmers in the Circuit.

It may be inferred that illiteracy is a contributory factor to this because an illiterate cannot prepare records by himself or herself. This points to the need for functional literacy among the farmers. According to Titmus (1989), the value of being able to read and write lies not in itself, but in other skills and knowledge to which it opens the way.

Generally, farmers in the Circuit did not seem to accept the influences of the extension officers as shown by responses of extension officers in Table 13.

TABLE 13

Extension Officers' View of Farmers' Acceptance of their Influences.

Kind of influence by Extension Officers in the circuit	Farmers' Attitude to influences As Reported by the extension Officers							
	Very willing		Very Reluctant		Not willing at all		Total	
	No	%	No	%	No	%	No	%
(i) Report cases of sorghum diseases to extension officers	2	40	1	20	2	40	5	100
(ii) Farmers to discuss their problems with extension officers	2	40	3	60	-	-	5	100
(iii) Farmers accepted new methods of land preparatio	1	20	4	80			5	100
(iv) Sowing in rows and spacing between rows and between crops	1	20	4	80	-	-	5	100

N = 5 = 100%

Forty percent of the extension officers claimed that the farmers were willing to report cases of sorghum diseases. One of them claimed that the farmers were very reluctant to make a report and two claimed that the farmers were not willing at all to make a report. Two of the extension officers indicated that the farmers were very willing to discuss their problems with them. It also shows that three of the extension officers claimed that the farmers were very reluctant about having their problems discussed. Regarding the issue that farmers accepted new methods of land preparation, only one of the officers claimed the farmers very willingly accepted this. Four of the officers asserted that the

farmers were very doubtful about the benefits of accepting the new methods of land preparation.

Regarding sowing in rows and spacing between rows and between crops, one officer claimed the farmers were very willing to sow in this way. About four of the officers claimed that the farmers were very doubtful about the effectiveness of this method of sowing sorghum. The general trend in Table 13 as indicated by the extension officers, is that the farmers were either very doubtful or not willing at all to be influenced by them. Where there is doubt and unwillingness, there is no commitment. In this connection, it is inferred that the farmers were not committed to the new techniques and that their old practices predominated their work life in their cultivation of sorghum. This conservation does not allow for increased productivity in sorghum cultivation.

Only ten percent of the respondent farmers (all in Jenbob) said the presence of the extension officers had helped them to improve their farming methods. Ninety percent of them asserted that the presence of the extension officers did not help them to improve upon their farming methods. This is a direct challenge to the efforts of the extension officers in the Circuit which calls for effective monitoring and performance measuring.

According to Danks (1975), a measure of performance in an organization is essentially a quantitative or qualitative statement which is used to evaluate progress and to assist management in decision taking. To measure performances however, it is important to understand what motivates workers and give them job satisfaction.

The more people enjoy their job and working environment, the more likely they are to work harder and take a pride in what they do. If workers are bored then they may be unhappy and therefore gain little job satisfaction (Danks, 1995). In that connection, the effectiveness with which the needs of the extension officers were met, may have a direct relationship with their performance. Responses to a question by the extension officers showed that all the five of them stayed in Panyentanga instead of spreading themselves at various locations in the Circuit. This was because accommodation could not be obtained in the other villages. The Ministry of Food and Agriculture did not also provide staff residence in this Circuit. This contributed to the difficulty in reaching out to the target group.

It was established that the District Extension Officer in Wa (The District Boss), visited the Technical Officers and their Field Assistants once in a year. There were avenues for the front-line extension officers to train and improve upon their performance in the field but most of the in-service training programmes were geared towards agro-forestry. It should be pointed out, however, that though agro-forestry is within the realm of agricultural practice, it is somehow distant from the immediate needs of the sorghum farmer in the Panyentanga Circuit.

**CHAPTER FIVE****5.0 SUMMARY AND CONCLUSIONS**

According to Craig and Metze (1986), programme evaluation is not research. Rather, it is the process of judging whether a programme is achieving or has achieved its intended goals. The process of evaluation therefore involves the informed judgement of the operation of the programme and its effects. In this connection, chapter four will determine the worth or value of the extension services rendered in the Ponyentanga Circuit.

The basic concern of this dissertation has been centred on the methods of educating farmers in the Ponyentanga Circuit. The dissertation presupposed that the methods used did not achieve their objectives. Its assumptions have been that the values, ideas, beliefs and the farming practices of the farmers did not change as a result of the influence of these methods on them. Relevant knowledge and information were, according to these assumptions, not effectively transmitted to the people. Attempts were made to evaluate the efficacy of the various methods used to educate the farmers in Ponyentanga Circuit. Parameters for the evaluation have been based on whether methods used and services rendered succeeded in effecting the necessary change in farming practices.

**5.1 PARAMETERS FOR EVALUATION****(i) An Issue of Effectiveness**

In terms of staffing requirements, it was established in chapter four section A that there was only one Technical Officer in the

Circuit. Four of his Field-Assistants had all been retrenched at the time of this study. The implication of this to extension work is that the physical ability of the Technical Officer may be adversely affected. Robbins (1989), indicates that there are nine physical abilities necessary for effective job performance. It was also established in the same chapter that one extension officer was not likely to have all the nine physical abilities in large amounts to ensure effective performance.

It was further established that the educational levels of the extension officers were very low ranging from middle school leaving certificate to an agricultural certificate. This has serious implications for satisfactory job performance of the extension officers. Low education means low intellectual abilities which leads to ineffective mental activities involving number aptitude, verbal comprehension, perceptual speed, and inductive reasoning (Tyler, 1974).

It was found that transportation was a problem as only the Technical Officer had an official motor cycle. The four field-assistants had bicycles and when these vehicles broke down, they had to walk to their clients because of the remoteness of their places to other vehicular traffic. It was noted in chapter four that poor means of transport made it difficult for the front-line extension officers to reach out to the target groups. This affects the effectiveness and efficiency of the education of farmers.

Illiteracy was found to be a great problem as all the respondent farmers in the Circuit were illiterates. It was also

found that all the hundred respondent farmers in the Circuit had illiterate parents (father and mother). Not only this, many persons in the entire Circuit, characteristic of the north, are typically illiterate. Dorvlo (1993) vividly explains the illiteracy problem in that part of the country. It is the contention of the evaluator that people's techniques of doing things, their beliefs, values and attitudes are shaped to a larger extent by their level of education. It was however found that the front-line extension officers did not incorporate functional literacy into their work as a means to an end.

It was shown in Table 3 that 90% of the respondent farmers were practising traditional religion. The contention of the evaluator is that traditional religion goes with superstition and conservatism which is an obstacle to change and development. Further, the change agents-front-line extension officers - did not seem to have effectively influenced the farmers enough to eradicate these obstacles to change and development as shall be discussed subsequently.

From chapter four it was indicated that all the five front-line extension officers used various educational methods on the farmers. These included individual home visits, individual farm visits, lecture meetings, group discussions and market place contact. The front-line extension officers also claimed that they had established farmers' associations and demonstration farms in all the eight locations in the Circuit. The claim however did not tally with the farmers' responses. The education of the farmers was largely

concentrated at Jenbob and partly at Bechuuyiri where only 14% of the farmers were covered as indicated by the data in Table 8 in chapter four. The few demonstration farms in Nensooteu, Bechuuyiri and Jenbob had become defunct because of lack of consultation with the farmers at the time they were being initiated. In locations like Kalsegraa, Oloyiri, Taambile, Daribaateu and Maaduteu, nothing was done at all. These locations however covered 60% of the respondent farmers while even those areas that were covered did not have all the respondent farmers influenced by these educational methods. An example is Bechuuyiri where only four out of ten respondent farmers were covered by the educational methods in use as indicated in Table 8.

We cannot talk of effectiveness in the use of educational methods when over 60% of the respondent farmers were never influenced by them. Effective and efficient programme delivery depend on effective process (Armstrong, 1994).

It was established in chapter four section B that the pattern of rainfall in the Circuit was changing because of ecological changes. The extension officers should have been able to convince the farmers to adopt the short duration sorghum varieties. This inability to influence farmers leads them to continue to practise their old ways of sorghum cultivation.

The farmers' attitude was largely responsible for their inability to change to new ways of doing things. The farmers did not trust the reliability of new varieties, and Clung to outmoded varieties they had inherited from their granfathers. According to

the front-line extension officers, the farmers also claimed that the varieties they were using at the time of the study (all long duration varieties) were good for brewing pito while others were not. Twenty-six percent of the respondent farmers resorted to occult consultation and the invocation of the spirits of their ancestors and their gods to protect their sorghum from crop diseases. It was also found that 74% of the farmers did practically nothing about diseases affecting their sorghum. None of the farmers used insecticides. In all these, the extension officers would seem to have failed to apply their technical skills and knowledge to arrest the adverse situation.

Effective farm management seems to have eluded both the extension officers and the respondent farmers in the Circuit as the data in Table 12 indicated. The extension officers were unable to assist the farmers on effective land preparation, the use of artificial fertilizer, proper and effective weed control, and the preparation of farm budgets. Also, only 46% of the farmers were assisted in some form of effective farm management - good timely harvest and the preparation of achievement records and cost of production. Four percent (4%) of the farmers were also assisted in the acquisition of good seeds and in timely planting. All the assistance took the form of lectures. Generally, 54% of the farmers were not assisted at all in the Circuit on all the above issues. In this situation, farmers cling to their old ways of doing things and this leads to reduced productivity.

Learning new methods of doing things and applying these new methods are two different issues. It was discovered that the respondent farmers did not apply the new methods they were taught. The data on Table 13 showed that farmers never did sowing by rows and never practised ridging. Artificial fertilizer was not used and proper land tillage was absent. Compost manure was not used. Keeping records of achievement and cost of production as well as preparation of farm budgets were all not put into use. All the farmers, however, resorted to the use of animal droppings.

Finally, ninety percent (90%) of the respondent farmers in the Circuit claimed that the presence of the front-line extension officers had not helped them in anyway in their sorghum cultivation as already stated in chapter four. The "field examiners" - the farmers - had passed judgement! This judgement would seem to be confirmed as the motivational level of the extension officers was very low. There were accommodation problems as well as poor means of transport. A troubled worker is a dissatisfied and ineffective worker.

**(ii) An Issue of What was Achieved or not Achieved.**

In terms of achievement, the staffing itself was woefully inadequate as all the four field assistants to the technical officer in the Circuit were retrenched. Re-instating these field assistants has to be considered seriously. Transportation problems are also yet to be overcome if any achievements are to be made. There have hardly been any achievements in services rendered and educational

methods used to change farmers' attitudes, ideas, values and beliefs. No achievement has also been made in reaching out to the target group as shown in the analyses. What was achieved was the in-built retraining programmes for extension officers. Four out of the five extension officers were all retrained to improve upon their performance.

In so far as innovation is concerned, the extension officers did not attain any measure of achievement. Instead, the respondent farmers themselves would seem to have achieved something in this direction when they replaced artificial fertilizer with organic manure to prevent soil salinity and overcome the problem of finding money to meet the high price of the artificial fertilizer.

There has not also been any achievement in increasing sorghum yields because of the impoverished land, the reduced rainfall and crop diseases affecting the sorghum. Methods of sowing sorghum remain conservative and wasteful. No better cropping methods have yet been practised. Record keeping is vital in helping to calculate capital expenditure on sorghum farming and also to determine gains made per farming season. The extension officers were not able to help farmers solve this problem as they did not incorporate functional literacy in their extension work. Generally we cannot talk of total achievement as all farmers experienced hunger in the households at certain periods of the year.

### (iii) An Issue of What Needs Improvement

From the analysis, it is quite clear that the responses to both the questionnaire and the interview schedule have confirmed the assumptions and issues raised in this dissertation. That is, the extension officers did not succeed in using educational methods effectively.

They have failed to equip and influence sufficiently the farmers of the area with the relevant knowledge and information. The attitudes, ideas, values and beliefs of these farmers have, therefore, remained unchanged. There has been no improvement in the farming practices of the farmers and the living standards of the farmers have remained the same.

The investigation has shown that many things need to be improved. First of all, either the retrenched extension officers are re-instated or new officers are appointed to assist the technical officer as the Circuit is too large to be managed by one person. The retraining programmes should continue to be organized in order to improve the performance of the extension officers. All the extension officers should be equipped with motor cycles to enable them carry out effective out-reach programmes in the target area. It is also important to provide accommodation at the area of study so that officers will be motivated in their work. The extension officers should spread their visits and field activities among the various locations instead of concentrating on one selected location.

Group meetings are very important to the extension officers and farmers. It was established during the investigation that farmers have their own cluster groups ranging from two to forty persons in some cases. These groups normally go to help their individual members each day. After the day's work, they gather to discuss problems concerning their farm work.

These "natural" groupings are so vital to the farmers that they see other forms of groupings as a threat to their own. The extension officers could make use of these "natural" groupings to discuss farmers' problems with them. The farmers are already experienced people in the work they do so when they reject decisions from the extension officers, the officers should see it as an opportunity for them to learn from the farmers the reasons for rejecting their decisions. This will enable the officers to adjust their decisions to suit the situation confronting them.

In recommending farming materials to their farmers, the extension officers should consider their economic status and local conditions in which these farmers find themselves. All the farmers expressed a desire for financial assistance since they were all financing their sorghum farms themselves with a lot of difficulty. The extension officers should redouble their efforts in linking their farmers to existing credit facilities. The terms of advancing loans should meet the pockets of the farmers. The method of sending messages to farmers through opinion leaders at market and funeral places should be stopped. This is because these leaders have not been able to perform the functions required of them.

Illiteracy is a serious draw back as all the respondent farmers came from illiterate homes and were themselves illiterate. If the extension officers could liaise with functional literacy programme officers, they could make the farmers functionally literate.

This will enable the farmers to better appreciate the new techniques of farming introduced to them.

## **5.2 The Implication of the Outcome of the Study for the Adult Educator as a Change Agent.**

The extension officer as a front-line member of staff is also an educator of the adults he or she comes into contact with in his or her field of work. Since his or her aim is to equip and influence farmers to adopt certain methods of farming as against other practices which he or she considers to be less useful, he or she is also a change agent.

The investigation has proved clearly that the objectives of the extension officers as set by themselves were not achieved. While it was established in one situation that out-reach programmes failed partly because of bad roads, rivers, streams and poor transportation system, the failure was largely due to poor human relations between the extension officers and their clients.

Questions administered to both respondent farmers and extension officers indicated that neither the extension officers nor the farmers visited one another on a personal basis. In chapter two section 2:1 of this dissertation, Freire (1985) was quoted as having pointed out that the failure of extension officers to achieve lasting results was due, in some cases, to their naive view of

reality. Freire pointed out that the marked attitude of superiority and domination with which the technician confronts the farmer within a traditional agrarian structure could lead to failure. In this vein, our extension officers have an obligation not to raise themselves over and above the farmers whose welfare they seek to address. The farmers will listen to the extension officers when they see them as partners in human development rather than as masters whom they have to serve.

The extension officers have a responsibility to help their clients to transform their own world. It is only in this way that the farmers will come to appreciate what the extension officers are doing for them. The extension officers will have to explore the cultural world of their farmers and see what cultural elements could be linked to the ideas they are presenting to their clients. According to Freire (1985), farmers' attitude towards phenomena like soil preparation and erosion, planting, harvesting and manuring are related to their attitudes toward nature, their religious beliefs and their values. From Freire's (1985) point of view, the extension officer who is an educator cannot bring about change in the attitudes of farmers unless he knows their world view and confronts it in its totality. For successful extension work to be carried out among farmers, there must be a dialogue situation between the extension officers and the farmers.

In this way, the dialogue will lead to a learning situation in which both the extension officers and farmers will acquire some knowledge for the development of themselves and their communities.

### 5.3 Issues For Further Research

The investigation was limited to the Ponyentanga Circuit alone. A sample of the area was studied. A research of the educational methods used and services rendered by extension officers in the entire Wa District or elsewhere could better confirm the results of this study. The study was based on households as units of production and consumption (Casely and Lury, 1987) in which the heads of the households were used as respondents. In my operational definition, a household, according to Casely and Lury (1987:163) comprised a person, or group of persons generally bound by ties of kinship, who live together under a single roof or with a single compound, and who share a community of life in that they are answerable to the same head and share common source of food. An investigation could be made into the nature and type of households that currently exist in the Circuit and how each category affects agricultural production. Parameters for checking whether the household is still a homogeneous unit could begin with such elements as household income, consumption and expenditure, labour force and employment, housing, water supply, nutrition and educational activities.

It was discovered that a cultural problem of gender existed. Women heads of households would not answer questions because in the Circuit, men are leaders and have the responsibility to answer questions in connection with the household. An investigation into gender relations could reveal important gender issues especially in the post-Beijing era of Women's empowerment.

It was also discovered that the respondent farmers were from illiterate households and were themselves illiterates. An investigation could be made into the activities of the Non-Formal Education Division (NFED) to see whether farmers are involved in the functional literacy programme currently going on in the country.

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**APPENDIX A****QUESTIONNAIRE FOR FRONT-LINE MEMBERS OF STAFF**

1. This questionnaire is not aimed at finding "faults" with Extension Officers. It is purely an academic exercise aimed at finding out problems in connection with extension services in the Ponyentanga area. It is hoped that the findings would help both farmers and the extension services department to set new strategies for the future.
2. Please be specific and answer the questions as accurately as you can.
3. You may not discuss any part of this questionnaire with your fellow staff members before you have filled it in. We are interested in your personal viewpoints.
4. Where answers or ideas are suggested tick the option that truly reflect your disposition.
5. Where "other-specify", is provided, you are required to state any other answers or ideas that may not be included in those suggested.
6. Thank you in advance for your co-operation.

**SECTION A: PERSONAL DATA**

1. Name of your village:.....
2. Name of your sub-station:.....
3. Gender (a) Male (b) Female
4. Age:.....

## 5. Marital Status

- (a) Single
- (b) Married
- (c) Divorced/Separated
- (d) Widowed



## 6. Religion

- (a) Catholic
- (b) Muslim
- (c) Traditional Religion

## 7. State your highest level of education.....

**SECTION B: FRONT-LINE INFORMATION**

8. For how long have you been in your present station?.....

9. Are you resident in your station? (a) Yes (b) No

10. If no, how do you come to your station to do your work?  
.....

11. Do you have a means of transport? (a) Yes (b) No

12. If yes, what type is it?

- (a) Bicycle
- (b) Motor-Cycle
- (c) Car

13. How many villages are under your sub-district?.....

14. How many of these villages are you able to visit in a month?  
.....15. Are there roads connecting the villages in your station?  
.....

16. Describe briefly the nature of the roads.....  
.....
17. Are there any difficulties in your attempt to visit these villages? (a) Yes (b) No
18. If yes, what are some of the difficulties?.....  
.....
19. How many times has your District Supervisor visited you this year?.....
20. How many times has your District Extension Officer visited you this year?.....
21. Have these visits been regular the previous years? (a) Yes (b) No
22. If the visits have not been regular what is the reason for this irregularity?.....
23. What method(s) do you use to contact your farmers?  
(a) Individual home visits  
(b) Individual farm visits  
(c) Both (a) and (b) above  
(d) Lecture meetings  
(e) Group discussions  
(f) The farmers come to me  
(g) All (ie. a - f)
24. How do you get your farmers informed about meetings?.....  
.....
25. Indicate as appropriate. The area under your control is:  
(a) Manageable

- (b) Too large for me
- (c) Too small for me
26. How willing are farmers to discuss their problems with you?
- (a) Very willing
- (b) Not very willing
- (c) Not willing at all
27. If farmers are not very willing or not willing at all, what do you think is the reason for that?.....
28. Do you have any demonstration farm in your area?
- (a) Yes (b) No
29. If yes, how do you use it to educate farmers?.....
- .....
30. List any three (if any) in-service training courses you have had while on the job as Extension Officer?
- (a).....
- (b).....
- (c).....
31. What three things do you consider to be very important in land preparation for sorghum planting?.....
- .....
32. To what extent have farmers accepted your methods of land preparation?
- (a) Very willingly
- (b) Very doubtfully
- (c) Very unacceptably

33. Sowing in rows and spacing between rows and between crops is a good principle in agricultural practice. To what extent have farmers in your area accepted this principle?
- (a) Very willingly
  - (b) Very doubtfully
  - (c) Very unacceptably
34. What is the common sorghum variety cultivated in your sub-district?.....
35. Is this variety of long duration or short duration?.....
36. Are your farmers prepared to change this variety?
- (a) Yes (b) No
37. If yes explain. If no, what do you think is the reason?  
.....
38. Are there any improved varieties of sorghum in your area?
- (a) Yes (b) No
39. If yes, list them.....
40. Do your farmers use artificial fertilizer in their sorghum farms? (a)Yes (b) No
41. If no, what do you think is the reason?.....
42. Do they use other forms of fertilizer? (a) Yes (b) No
43. If yes, What are the other forms? If No, What is your advice on this issue?.....
44. Have farmers taken the advice given them? (a) Yes (b) No
45. What has been your advice to farmers on the type of implements used on their farms?.....
46. Have they accepted this advice? (a)Yes (b)No

47. How do farmers in your area control sorghum diseases?
- (a) By using insecticide
  - (b) By consulting their gods
  - (c) Nothing is done about it
  - (d) Other-Specify.....
48. What do you tell farmers in connection with crop diseases?  
.....
49. How do they accept it?
- (a) Very willingly
  - (b) Very unwillingly
  - (c) Other - Specify:.....
50. In your opinion are farmers in your area able to afford the money to buy insecticide? (a) Yes (b) No
51. Do you consider the price of fertilizer to be reasonable for the average farmer in your area? (a) Yes (b) No.
52. What is the average acreage of the average farmer in your area for all crops?.....
53. What is the acreage for the average farmer for sorghum?  
.....
54. Do you consider that at the end of the farming season the farmers make: (a) a gain (b) a loss  
Give reasons for your answer.....
55. Are there any channels through which farmers in your area get financial assistance? (a) Yes (b) No
56. If yes, What are some of these channels?.....

57. Do you consider that your presence in the Panyentanga area has helped to improve the lot of the farmers there?

(a) Yes (b) No

58. If yes, give reasons.....

59. If no, explain for the lack of impact.....

.....  
.....

## APPENDIX B

## INTERVIEW SCHEDULE FOR FARMERS

This interview schedule is purely an academic exercise aimed at finding out problems in connection with extension services in the Panyentanga area. It is hoped that the findings would help both farmers and the Extension Services Department to set new strategies for the future.

## SECTION A: PERSONAL DATA

Your name is not necessary, only state as applicable to your case below:

1. Name of Village?.....
2. Marital Status.....
  - (a) Single
  - (b) Married
  - (c) Divorced/Separated
  - (d) Widowed
3. Size of household?.....
4. Religion
  - (a) Catholic (b) Muslim (c) Traditional religion
  - (d) Other- specify.....
5. (i) Education; (a) Never attended school
  - (b) Ever attended School
 (ii) If you ever attended school, state your highest level of education?.....



6. (i) Education of father (a) Literate (b) Illiterate  
(ii) Education of mother: (a) Literate (b) Illiterate  
(iii) State highest level of education of parents:  
(a) Father.....  
(b) Mother.....

**SECTION B: FRONT-LINE INFORMATION**

7. What variety of sorghum do you farm?  
(a) Kyere  
(b) Kondaboo  
(c) Murifii  
(d) Pokoore la toore  
(e) Other-specify.....
8. What acreage of sorghum do you farm every year?.....
9. What is the nature of the land on which you farm?  
(a) Hilly  
(b) Valley  
(c) Plateau  
(d) Other-Specify.....
10. What are the most dangerous diseases affecting sorghum in your area?.....
11. How do you control these diseases?  
(a) Insecticide  
(b) By consulting the gods  
(c) Nothing is done about it  
(d) Other-specify.....

12. Is there any farmer's association in or near your village?  
(a) Yes (b) No
13. If there is an association what are its functions?.....
14. Do you have an Agricultural Extension Officer in your area?  
(a) Yes (b) No
15. If yes, how long has he/she been in your area?.....
16. How many times have you met him?.....
17. How many times have you personally been to him?.....
18. What was your reason for going to him?.....
19. How many times has he/she come to you?.....
20. What was his/her reason for coming to you?.....
21. Does the Extension Officer hold group meetings for farmers in your area? (a) Yes (b) No
22. If yes, how does he/she get you informed about the meetings?  
.....
23. What does he/she usually tell you at these meetings?.....
24. Has the presence of the extension officer in your area helped you in any way to improve upon your farming methods?  
(a) Yes (b) No
25. If yes, explain how.....
26. If no, give reasons.....
27. How do you like the methods you are taught by this Extension Officer?  
(a) Very much  
(b) Not very much  
(c) Not at all

28. What is the reason for your choice in question 27 above?  
.....
29. Is there any demonstration sorghum farm in your area?  
(a) Yes (b) No
30. If yes, for how long has the demonstration farm been in your area?.....
31. Is the Extension Officer always prepared to listen to your views on sorghum farming? (a) Yes (b) No
32. If no, what do you think is responsible for his attitude?  
.....
33. If you plant sorghum with other crops what is your reason for doing that?.....
34. Do you apply fertilizer on your sorghum? (a) Yes (b) No
35. Do you apply fertilizer to your other crops? (a) Yes (b) No
36. If no, what is your reason for not using fertilizer on your sorghum?.....
37. If yes, have you realized any increase in your yield?  
(a) Yes (b) No (c) Not very much
38. Do you use other forms of fertilizer on your sorghum?  
(a) Yes (b) No
39. If yes, state the other forms of improving the soil for fertility.....
40. If no, why is it so?.....

41. How do you sow your sorghum?
- (a) on small mounds
  - (b) in rows on ridges
  - (c) on flat ground in all directions
  - (d) other-specify.....
42. How much cost do you incur in a planting year for example labourers, planting etc.....
43. State in number of bags your annual yield in sorghum?.....
44. What is the current price of a bag of sorghum?.....
45. What is the price of a bag of sorghum during the "hungry season"?.....
46. Where do you sell your sorghum?
- (a) in the house
  - (b) in the market
  - (c) other-specify.....
47. Who are your regular customers?
- (a) Pito brewers
  - (b) Wala women
  - (c) Other-specify.....
48. Is your sorghum able to last the whole year? (a)Yes (b)No
49. Would you say that sorghum farming is a profitable venture?
- (a) Yes (b) No (c) Not very much
50. Has the presence of the Extension Officer in your area accounted for any successes you have made in sorghum farming so far?.....

51. In what other areas has the Extension Officer been of help to you?.....
52. Indicate any source of financial assistance you get in your sorghum farming?
- (a) Self-financing
  - (b) Bank loans
  - (c) Other-specify.....

## APPENDIX C

**INSTITUTE OF ADULT EDUCATION  
UNIVERSITY OF GHANA**

Telephone: 775430  
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P.O. Box 31  
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Ghana

Our Ref: .....

Your Ref: .....

August 23, 1994.

**TO WHOM IT MAY CONCERN**

Mr/Mrs/Miss..... **KANCHELI WALTER GBIELI**.....

is a student taking the MAM.Phil in Adult Education course and is doing research in connection with his/her dissertation/thesis. The exercise requires contacting institutions and organizations for material and data.

I should be very grateful if you would give the help he/she requires, in case your organization is contacted.

A handwritten signature in cursive script, appearing to read 'Akwayena'.

C. Akwayena  
Head, Teaching & Research Unit.