FACTORS INFLUENCING WOMEN FARMERS' PARTICIPATION IN EXTENSION ACTIVITIES IN SAVELUGU/NANTON AND TAMALE DISTRICTS NORTHERN REGION GHANA

BY

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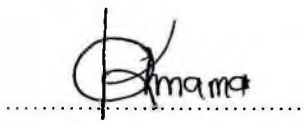
DECLARATION

I, AMAMA KALEEM do hereby declare that, this thesis with the exception of the identified quotations, is the product of my own research, which was supervised by Dr. Joe Geker. None of the materials contained herein, has been presented either in whole or in part for the degree of this University or any other.



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DEDICATION

With love to my mother, Madam Ayishetu Kaleem whose support, and encouragement have laid the foundations of my life and education.

To my husband Habib, and son Nazif, for their understanding during my long absence from home; and to my sister Fati Kaleem who took over the care of my son and niece while I was in School.

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ABSTRACT

The important contribution of Women in the Northern Region of Ghana to Agricultural Production, processing and marketing cannot be overlooked. Available data and personal observation show that women do most of the work on the farm. Women in direct food production either help their husbands on the farm or are themselves owners of farms. Farm activities (such as planting, weeding, fertilizer application, threshing and storage) are done by women. In addition, they are responsible for the time -consuming tasks associated with preservation and processing of farm produce.

This therefore, calls for the delivery of appropriate extension messages to women based on their needs as a result of the roles they perform but this is not the case. Women are often marginalised by extension agents in the Northern Region during extension delivery.

The study was therefore conducted to find out factors influencing women farmers' participation in extension activities (attendance to meetings, field days, excursions, home visits, farm visits, demonstrations).

The survey method was employed to collect qualitative and quantitative data. The target population of the study included all women farmers and extension agents in

Savelugu/Nanton and Tamale districts of the Northern Region of Ghana.

A total sample size of ninety-six women and sixteen extension agents were selected using random sampling technique. Primary and secondary data were collected for the study. Instruments used in collecting primary data were a self-administered questionnaire for field extension agents, and interview schedule for farmers.

Secondary data was collected from annual reports and annual programme of work of the two districts, Regional WIAD office, and Regional Agricultural Extension Office as well as policy documents obtained from the headquarters of the Department of Agricultural Extension Services. The data was analyzed using the Statistical Package for Social Sciences (SPSS)

The findings of the survey revealed that, women contribute immensely towards agricultural production in the study area by engaging in the production of food crops, cash crops, and domestic animals. However, the study revealed that only 30 percent of women in Tamale District were contacted by extension agents. In Savulegu/Nanton District where the IFAD sponsored S.RD.P gave financial support to women for farming and income-generating activities, and where the extension agents were given gender-sensitive training, 50 percent of the women were contacted.

Factors influencing their participation in extension activities are:

- lack of access to productive resources (land, capital, labour)

  socio-cultural factors (such as difficulty in traveling outside their communities, domestic chores, reproductive/childcare responsibilities and off-farm income-generating activities.)

  women farmers do not meet most of the criteria used in selecting contact farmers

  extension agents' perception that women do not have decision-making authority concerning farming within the household as a result, cannot implement recommendations.
- obstacles encountered by extension agents when contacting women due to socio-cultural norms.
- lack of institutional mechanisms in place to ensure that extension agents contact women farmers and

  the absence of policies that aim at integrating women into the agricultural development process.

The conclusions drawn from the findings are that, women farmers contribute significantly to agricultural production by cultivating food and cash crops and vegetables but are rarely involved in extension activities. This is attributed to the fact that:

- Due to lack of access to productive resources (land, labour and capital), they often find it difficult to implement improved farming techniques recommended to them by

extension agents.

- Socio-cultural factors (e.g domestic chores, marital and childcare responsibilities) prevent them from participating in extension activities.
- Women do not meet most of the criteria used in selecting contact farmers (e.g. land ownership, ability to travel outside the community for training courses).
- Extension agents face obstacles when contacting women during their extension duties. This often discourage them from involving women in their extension activities.
- .There are no institutional procedures put in place to ensure that women farmers are reached by extension.

Recommendations are made for policy makers and extension administrators to come out with policies and strategies for integrating women farmers' needs and concerns into the agricultural development process. These include:

institution of credit facilities for women farmers to purchase farming inputs, implements and processing machines.

- the adoption of group approach to contacting women farmers
- organization of separate functions for men and women so as to enable women feel free to talk or contribute to discussions

selection of extension methods that are convenient for women farmers to attend

criteria for the selection of contact farmers should be reviewed in order to enable women farmers qualify as contact farmers

gender sensitizing training should be organized for extension agents(both male and female) to equip them with the tools /skills necessary to work with women farmers

targets should be set for the number of men and women farmers to be involved in each extension activity conducted by extension agents.

Formats for reporting attendance by sex during extension activities should be designed for extension agents.

Policies formulated by the Department of Agricultural Extension Services(D.A.E.S) should emphasize the need to work with women farmers

The demonstration home concept should be extended to all the districts in the Northern Region since it has proven very effective as a strategy in reaching women farmers in the IFAD/SRDP operational areas and so is the women volunteer approach

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LIST OF ACRONYMS

MTADP	-	Medium Term Agricultural Development Programme
SSA	-	Sub-Saharan Africa
ISSER	-	Institute of Statistical, Social and Economic Research
MOA	-	Ministry Of Agriculture
NGO	-	Non-Governmental Organisation
IFAD	-	International Fund for Agricultural Development
SRDP	-	Smallholder Rehabilitation and Development Programme
WIAD	-	Women in Agricultural Development
T & V	-	Training and Visit System
IFPRI	-	International Food Policy Research Institute
NCWD	-	National Council on Women and Development
NORRIP	-	Northern Region Rural Integrated Programme
D.A.E.S	-	Department of Agricultural Extension Services

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The economies of most developing countries are based on agriculture with sixty to eighty percent of the population living in rural areas. The rate of economic growth in developing countries is closely associated with the rate of growth of Agriculture (MTADP 1990).

The primacy of agriculture in the economy and in the sustenance of the livelihood of the people of Ghana is as true as it is for the rest of sub-Saharan Africa (S.S.A) (MTADP 1990). Agriculture is undoubtedly the largest and an important sector in the Ghanaian economy. About 70 percent of the population live in rural areas where they depend directly or indirectly on agriculture and related activities. In every respect therefore, agriculture has been and will continue to be the primary mover of the Ghanaian economy for some time to come.

Most of the available resources in developing countries consist of land and people. Capital is in limited supply and must be generated through development of agriculture or procured from advanced countries either through credit or foreign investment. Governments of most developing countries prefer to hold foreign investment to a minimum while generating capital through the development of their own resources. Thus agricultural development becomes a prime factor in economic development.

Although there is great variation in the quantity and quality of arable land, climate, water and

other natural resources and ratio of land to people, developing countries have two characteristics in common. Firstly, there is great potential for the development of increased agricultural productivity, and secondly, the potential for developing the human resources is almost unlimited. Almost without exception, crop yields average is far less below those in more economically advanced countries with comparable land and climate. Thus, the difference between actual and potential agricultural productivity is far greater in the less developed countries than in their more technically advanced neighbours.

There is no appreciable difference in the inherent intelligence or capacity of people of different countries or races. Differences in ability arise from environmental factors, one of the foremost of which is education. Studies of the agricultural development process are increasingly recognizing the contribution of education as one of the essential elements in the process. These studies indicate that, economic growth cannot be explained alone in terms of capital accumulation and growth of the labour force but rather, the explanation for a large and possibly a major part of economic growth in investments in the development of human resources through education (Maunder 1972).

Any sharp and continuing acceleration of agricultural productivity requires the breaking away from traditional attitudes toward change. This can be achieved only with the aid of mass education. Thus the development of human resources through education offers not only one of the greatest possibilities for economic advancement, but a prerequisite to the application of the technology required to increase agricultural productivity.

Agricultural extension is only one, although a very important form of education. Rapidly advancing agricultural technology requires continuing education for rural adults regardless of their level of formal education. Governments are increasingly recognizing that this need must be filled through some form of agricultural extension (Maunder, 1972).

Agricultural extension service offers advise on agriculture to farmers, and also supplies them with the necessary inputs and services to support their agricultural production. It provides information to farmers and passes to them new ideas developed by agricultural research stations. Agricultural extension programmes cover a broad area including improved crop varieties, better livestock control, improved water management, and control of weeds, pest, or plant disease. Where appropriate agricultural extension may also help to build up local farmers' groups and organizations so that they can benefit from extension programmes. Agricultural extension therefore, provides the indispensable elements that farmers need to improve their agricultural productivity. There are probably more extension agents involved in agricultural activities than any other aspect of rural live. Given the importance of agriculture and the need to produce food both for the farm family and for the nation as a whole, this emphasis upon agricultural extension is understandable (Oakley and Garforth, 1985).

Rural extension is concerned with the whole family, and extension programmes should cater for the needs and interests of the different members of the family, for farming is an occupation that involves the whole family. The farmer, his wife and children share in the daily and

seasonal round of caring for the animals, planting, cultivating, harvesting and marketing of the crops. The responsibility of feeding the family and protecting the health of children concerns both the mother and the father (Oakley and Garforth, 1985).

Farm activities are so interwoven with those of the home that, if extension education is to be effective, it must serve the entire family. Any programme aimed at changing patterns of activity in a rural society needs to take into consideration the woman's influence in the home, in the village, and in national affairs. ''If you educate a man, you educate an individual. If you educate a woman, you educate a family''. This old proverb is true today.

Improved agricultural production is basic to both economic and social development, and here the wives of farmers have great influence. A woman may not always attend a village meeting with her husband, but her influence goes with him. This influence can change a village. Her interest and attitude plus her labour help determine what production will be on a farm. Behind every man is a woman who helps him carry out improvements or hinder him in making changes because she does not understand (Maunder, 1972).

Governments and donors alike have realized that, one of the critical factors in revitalizing agricultural production in Africa is to raise the productivity of African women farmers. As a result, many governments, non-governmental organizations (NGOs) and international organizations adopted strategies to improve opportunities for women. Notable among these are:

- The World Bank which has identified women in development as a priority and has integrated this concern into its analytical work and lending operations. Thus as many as one out of every five operations approved by the Bank in 1989 included specific recommendations for assisting women (World Bank 1990).
- The IFAD sponsored Agricultural and Rural Development Project which has specific components of support to women where they are given credit for crop production, off-farm income generating activities (weaving, soap making, and marketing of agricultural produce).
- The Sasakawa Global 2000 Agricultural programme in Ghana which is actively collaborating with Government Agencies (such as the Extension Services Department of the Ministry of Food and Agriculture) in ensuring that technologies for production, storage and utilization reach the female farmer.

At the government level, the attempt to reach women farmers was the introduction of the Home Economics Programme in 1971. This programme was later expanded into the Home extension programme. The activities of the unit included home management and sanitation, nutrition and diet improvement, income generation and the cultivation of vegetables and legumes. This was later changed to Women Farmers Extension Programme. This change was to give the necessary emphasis on the important role of women in the agricultural production efforts. However the main activity areas virtually remained the same with some expansion into utilization and post-harvest activities (Korang-Amoaku, 1996). The name Women Farmers Extension unit was again changed to the Women In Agricultural Development (WIAD) with

an expanded role of ensuring increased participation of women in agricultural production (Korang-Amoaku, 1996).

1.2 Statement of the problem

The important contribution of African women to production, processing and marketing of agricultural produce has been widely documented. Available data and personal experience show that, women do most of the work on the farm and increasingly have become the key decision-makers.

The role of women in the social and economic life of Ghana is similar to the emerging global picture of the primacy of women in the economic development of low-income countries (M.T.A.D.P 1990). According to the 1984 census, there are 6.4 million women in Ghana, just over half of the total population. Seventy percent of this live in the rural areas and are engaged in farming (M.T.A.D.P 1990). They process and market all the grains and staple starchy foods and constitute about 30 percent of heads of household. Women in direct food production either help their husbands on their farms or they are themselves owners of farms. In addition to agricultural activities, women traditionally have the central role of managing households and do most of the work for the household to function. Women prepare all the food for the household. They grind, fetch water, and collect firewood. Women are the principal providers of care for the household members particularly children and the elderly. They are also responsible for the caring of ill members of the household, and most medical care in the rural areas is done at home, principally by women. Sexual division of labour in

food production is both task and crop specific. Usually, land clearing which is considered tedious is done by men and older boys in the family. Farm activities such as planting, weeding, fertilizer application, harvesting, processing and storage are done by women. In addition they are responsible for the time consuming tasks associated with preservation and processing of food (Nettey 1978 cited in N.C.W.D, 1978).

Women in the Northern Region of Ghana like their counterparts in the other parts of the country, contribute in diverse ways toward agricultural development. They are directly involved in the production of food and cash crops, livestock, processing and marketing of agricultural produce. In the production of food crops, these women are found as important helpers of their husbands on the family farms, or are apportioned part of their husbands cleared land from which they are expected to produce food crops such as staples, vegetables, and the pulses.

Some of the women, with the help of their children, are able to work and manage their own farms to produce food for both home consumption and sale. The income from the sale of farm produce is invested in trading or rearing of animals. Part of the income is used to purchase their personal needs and contribute to household expenditures. Some women do not have farms but are involved in food production as seasonal farm workers for a wage (Koyiri, 1996). Women in the Northern region also have the traditional responsibility of processing, storing, and marketing of farm produce. In the field of food processing and preservation, the women play maximum role. Without their involvement in processing farm produce, much of the food

produced would go waste particularly during the peak season when food is in abundance. Women process food crops into various forms thus, reducing post harvest losses and ensuring food security at the household level. Among food crops processed locally are the cereals, legumes, root crops, fish, meat and vegetables. They continue to use traditional techniques of processing for instance, threshing and winnowing is by hand. Milling of grains is the only processing operation that has been mechanized to the advantage of women in the rural areas. In some remote areas, women still use the traditional grinding stone for milling. Vegetable drying is a form of food processing and preservation, which is being undertaken by women to forestall shortages during the dry season.

Rearing of small animals such as sheep, goats pigs and poultry in the savannah zone is mostly done by children and women. However this activity is poorly managed by women due to inadequate knowledge of husbandry practices and lack of access to veterinary services (Koyiri, 1996).

This therefore calls for the delivery of appropriate extension messages to both men and women based on their needs as a result of the roles they perform but this is not the case. The farmer contacted by extension agents is usually a man. Literature shows that women are neglected by extension agents. For instance, Gizari and Mirikoozani (1995) observed that, women are engaged in a wide range of agricultural activities in many developing countries, yet they continue to be systematically marginalized, undervalued, and unrecognized. Extension records in Ghana have confirmed this assertion as shown in Table 1.

Table 1. Coverage of Women farmers by Extension Services - June 1987

Region	No of villages covered	No of women farmers	No of women farmers covered	Percentage Coverage
Greater Accra	134	26074	4654	17.85
Central	132	161650	9920	6.14
Western	42	171937	1371	0.80
Eastern	114	257017	7825	3.04
Volta	671	183336	26500	14.45
Ashanti	148	308547	3523	1.14
Brong Ahafo	20	205526	912	0.44
Northern	60	73499	2075	2.82
Upper East	60	89666	6212	6.93
Upper West	87	72174	3700	5.13
TOTAL	1468	1549416	66692	4.30

Source: MTADP, MOA, 1990.

The table confirms my own observation as a District Extension Supervisor. On the average, only about 4.3 percent of women farmers are contacted by extension officers in the country. In the Northern Region where the study was conducted, only 2.82 percent of the women were

covered. Due to the lack of contact with extension agents, women are compelled to use traditional methods of farming which affect their productivity. If they are given attention by extension agents, they could increase their productivity. The extremely low coverage of women farmers therefore, forms the basic problem of this study.

1.3 Research Questions

1. What factors influence Women Farmers' participation in extension activities?
2. How can women farmers' participation in extension activities be enhanced?

1.4 Objectives of the study

In the light of the stated problem, the main objective of this study is to determine the factors influencing women farmers' participation in extension activities.

The specific objectives of the study are to:

(i) Examine the contribution of women to agricultural production in the study area

(ii) Identify the criteria used by extension agents in selecting contact farmers.

(iii) Determine extension agents' perception about women's role in agricultural production.

(iv) Identify the obstacles extension agents encounter while involving women in extension activities.

(v) Identify the factors that inhibit women farmers' participation in extension activities

(vi) Determine the institutional mechanisms put in place to ensure that women are reached by extension.

1.5 Justification for the study

A study to find out factors influencing women farmers' participation during extension delivery in the Northern Region of Ghana is worth undertaking. This is because currently there is no study specifically devoted to women farmers' access to extension services. Even though some studies have been undertaken on women, they are on different aspects of women and development such as the study carried out by Nabila and Beneng (cited in NCWD 1978) on ''Modern roles of women in the economic and social development of Northern Ghana'' and that on the'' Role of women in rice production in Northern Ghana'' by Gbedemah(1978 cited in N.C.W.D (1978).

Apart from the knowledge that it will contribute to the existing literature on the issue, it will provide policy options for planners and policy makers for the integration of women's concerns into agricultural development. It will also provide strategies for extension agents to work effectively with women farmers.

Major transformations are occurring which, whatever the culturally ideal position of women and men in the society may be, are changing household formations and patterns of obligations rapidly and substantially. Thus, women are becoming directly responsible for providing the needs of the households. These include the provision of clothing, medical care, education for children and the provision of basic necessities. In the Northern region of Ghana, especially in the rural areas of Dagbon (the dominant ethnic group), it is the responsibility husbands to

provide grains or starchy staples (such as maize, sorghum, millet or cassava) while cooking wives provide soup ingredients (e.g fish, cooking oil, salt and vegetables.) for the preparation of the family meal. Since the grains provided by husbands contain mainly carbohydrates, it is the soup ingredients provided by the wives which supply the proteins, vitamins, mineral salts, and other nutrients that the body requires to remain healthy. In other words the nutritional status of the farm family is determined by the quality of soup ingredients that the woman provides. In order to prepare balanced diets therefore, the woman's income must be substantial. Since a greater proportion of women in the rural area depend on agriculture for their livelihood, there is the need for them to acquire improved technologies of agricultural production so as to raise their incomes to address their financial obligations within the household. This can be achieved through the adoption of improved farming practices. Agricultural extension service which is the agency that is charged with the responsibility of offering advice, information, and improved technologies to farmers therefore, need to serve women. Improving women's access to extension services will go a long way to increase their productivity, which will result in higher incomes and a better standard of living of not only the women, but also their children and the farm family at large. In this regard, the goal of extension, which aims at raising the standard of living of the farm family through increased productivity and incomes, will be achieved.

Women played an important role in agricultural production as farm assistants or partners to their husbands in the past. Today, women are farmers in their own right. In playing the role of farm owners they take all decisions concerning the farm enterprise. Thus women have

become decision makers in that case, cultivate crops of their own choice, decide on what proportion of the produce to consume and what proportion to sell and what to do with the proceeds of the farm. Extension agents therefore, need to assist women farmers. A study aimed at determining the factors influencing women farmers' participation in extension activities is therefore justified.

1.6 Definition of concepts

The following definitions attempt to clarify how certain concepts are used in this study.

CONCEPT OF PARTICIPATION: According to the dictionary definition, participation is the act of taking part in something, or an activity e.g. meeting, discussions, competition or becoming involved in something or an activity.

Participation and involvement are sometimes used interchangeably but some researchers are of the opinion that, participation and involvement should be differentiated. Those of this stand see participation as taking part actively in decision-making process, and citizen involvement as the awareness of policies through consultation. While participation implies sharing, involvement connotes a sense of belonging.

For the purpose of this study, the dictionary definition is adopted. In this regard, participation in extension activity is the act of taking part by farmers in extension activities.

INDICATORS OF PARTICIPATION : Attendance to meetings, field trips, farmers' day cerebration s, visit to the office and home of extension agents and taking part in demonstations.

INVOLVEMENT: The act of extension agents inviting women farmers to take part in extension activities. It means including farmers in their programmes.

ACCESS TO EXTENSION SERVICE: The act of farmers getting extension services. It is

the opportunity to obtain extension services.

EXTENSION CONTACT: Act of extension agents meeting or getting in touch with women farmers and communicating with them, (advising or transferring technologies and/or information to them. as well as identifying their needs and assisting them to address those needs). The contact can be on a face-to-face basis, or on telephone or radio.

EXTENSION ACTIVITIES: These are activities which extension agents conduct in order to transfer knowledge, information, skills, technology, or offer an advice to farmers. They are conducted for farmers to interact in order to bring about changes in attitude, behaviour or practices of farmers. These activities are carried using the various extension teaching methods like demonstrations, group meetings, farm visits, home visits, field days, excursions, and farmer fora.

WOMAN FARMER : A woman farmer refers to any woman who engages in agricultural production be it crop, livestock , or fish production.

BARRIER: Things that prevent farmers from participating in extension activities or make it difficult for extension agents to involve women farmers in their activities. .

CONTACT FARMER: This is a farmer whom the extension agent has selected to pass technical advice to other farmers. The contact farmer functions as a liaison between the extension agent and the people and acts as a pioneer with new methods and help influence neighbours. He helps to organize local extension groups, assist directly in the spread of new ideas and practices by demonstrating them in his field, and generally serve as a point of contact between the agent and the farmers. By enlisting their help, the extension agent will have a

chance to reach far more farmers than he could on his own. The contact farmer is viewed as a teacher in the farming community. Through this leadership process, he wields some amount of social influence over others.

PERCEPTION: Perception is the way events are recorded and interpreted. Different words create different images in people's minds. It is the way extension agents interpret the role or importance of women in relation to agricultural production.

HOUSEHOLD HEAD: This is the head of a household(comprising one or more farm families)who take decisions on matters affecting the household in consultations with other adult male members of the household. He ensures that the food security needs as well as the welfare and social obligations of the household are met.

COOKING WIVES: These are married women in the household who have attained a cooking status. Before a woman attains this status, she must have been married and given birth twice. Cooking wives are mostly the wives of household heads. A non-cooking wife is a married woman who has not yet attained a cooking status. This can either be the wife of a household head who has not yet given birth twice, or the wives of a junior male (a man who is not a household head). It is only after the wives of the household head retire (due to old age) that wives of dependent men or junior males take over the cooking of the family or household meals (usually lunch and supper). Dependents are people within the household who are being fed and catered for by the household head

EXTENSION DELIVERY: It is the process by which extension agents provide or send

extension messages to farmers. The messages could be in the form of information or technologies on crop production, animal production, crop utilization, or home management.

1.7 Limitations of the study.

Mostly in sub-Saharan Africa, surveys suffer from various shortcomings such as errors in sampling, age misreporting and definitional errors. This study can not be isolated from these common shortcomings

i) The presence of other people (husbands, opinion leaders, children) might have influenced the responses. For instance an aged and widowed woman whom the researcher interviewed, always asked the son in whose house she resided, to answer certain questions on her behalf. In order to obtain genuine answers, the son was persuaded to leave the place so as to enable the mother to answer the questions herself. Another respondent always looked at the face of the husband before answering certain questions.

(ii) Some of the respondents thought something in the form of credit, inputs or other material gains were to follow after the interview as such they gave answers which they felt would please the research. This was detected and respondents persuaded to provide frank answers and they complied.

Despite these setbacks, the researcher tried as much as possible to ensure that valid responses were obtained.

1.8 Organization of the Chapters

The research report is made up of seven chapters.

- The first chapter contains the introduction which comprises the background to the study, research problem, objectives of the study, definition of terms/concepts, and limitations to the study.

- Chapter two is a brief review of literature related to the study. In this chapter, studies done on women farmers access to productive resources(land, credit, labour, appropriate technology, education and extension services) are reviewed. Also reviewed the gender of the extension agent and contact with women farmers, reasons why women are not fully integrated into extension programs, the criteria for the selection of contact farmers
- In chapter three, the methods used in collecting data sampling techniques, the choice of the study area and methods used in analyzing the data are described. Chapter four describes the study area.

- The core of the research is embodied in chapter five in which the main findings of the survey has been presented and the interpretations made.
- In the fifth chapter, conclusions are drawn and recommendations made.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Literature on women farmers' participation in extension activities in Ghana is scanty as such the researcher had to review that of studies conducted in other sub-Saharan African countries.

2.1 The importance of Women in Agricultural Production.

In the past, most discussions and policy decisions concerning agricultural production omitted any serious consideration of women's role in agriculture. In 1985, the world conference on women in Nairobi Kenya, highlighted the crucial role of women as farm managers and farm workers all over the world. Women constitute about one-forth of the industrial labour force of the developing world and an even higher proportion in many of the expanding export industries of East Asia and Latin America (Walker, 1990).

The International Labour Organization estimates that in Africa, 78 percent of females are economically active in agriculture compared to only 64 percent of males (Buvinic and Lycette, 1988 in Saito and Weideman 1990). Some evidence from some sub-Saharan African countries will suffice. In Zambia a random sample of farm households in three provinces indicated that during the farming season, women contributed 53 percent of the total hours of labour in agriculture compared to men's 47 percent (Due and Mudenda, 1984 cited in Saito and Weidemann, 1990). Studies in Malawi have reported that 50-70 percent of all agricultural work was done by women and 69 percent of farmers were female (Kydd and Christianson,

1982; Clark, 1975, cited in Saito and Weideman, 1990). In Guinea, women in most regions perform 40-50 percent of agricultural work (Herzog 1988 cited in Saito and 1990) and an estimated 60 percent of Gambian women are farmers (World Bank 1988). In Burkina Faso, women are responsible for 49 percent of the labour in crop production (Tinker, 1981 cited in Saito Weidemann, 1990).

In Ghana, women constitute about 50 percent of the total population and about 47 percent of the labour force. About 30 percent of households are headed by women. Since 68 percent of the population live in the rural areas, it follows that majority of female labour force live in the rural communities. Farming is the most important occupation for these women who constitute about 47 percent of the farm labour force. Women are mainly engaged in the production of food crops and vegetables on small plots of land and have limited access to institutional credit and improved technological packages (NCWD, 1994). Rural female farmers produce 70 percent of the national food crop output. They are also saddled with farming activities such as planting, weeding and harvesting (NCWD 1994). Women also constitute 90 percent of the labour force in marketing of farm produce (National Population Policy Document, 1994, cited in Duncan, 1997).

Women in the Northern Region of Ghana contribute in diverse ways to the agricultural development. They are directly involved in production of food crops, cash crops, livestock, vegetables, and processing and distribution of farm produce to the consumer (Koyiri, 1996).

2.2 Constraints Women face in Agricultural Production.

Women face a number of constraints as food producers, farm hands and processors. They own few productive resources such as land, and have little access to institutional credit. They also do not benefit from the services of extension agents and are therefore not exposed to new ideas and techniques of agricultural production. Their productivity is thereby depressed (NCWD 1990).

2.2.1 Access to Land.

Land availability and tenure is a problem for women because they tend to have less secure tenure, or land which is fragmented or simply smaller plots. Women's relatively less access to favourable land can be a strong disincentive to adopting new techniques or investing in the land. In most African countries, land title is in the name of the household head. The legal system and traditional practices give ownership and control of land to men. Women's access to land is mostly through their husbands, sons or male relatives. Most Governments and households give priority to cash crops such as Cocoa, coffee, tea or cotton. The best land is used to produce these crops leaving only the poorest land to women for subsistence food crops (NCWD, 1994). In Sub-Saharan Africa, where women have prime responsibility for food production, they are generally limited to user rights (usufruct) to land, and then only with the consent of a male relative. This insecurity of tenure reduces the likelihood that women will invest much time and resources in usufruct land or adopt environmentally sustainable farming practices such as tree planting. Such unequal land rights are reflected in the smaller farm sizes

of women farmers. Women also tend to be allocated poorer land whose quality deteriorates even further as it is intensively cultivated (IFPRI, 1995).

In Ghana, the traditional systems of inheritance continue to exert their influence to a large extent on land. Access to land therefore depends on the traditional systems of inheritance that is prevailing in the area. Basically in the patrilineal system, inheritance and decent are traced through the father's lineage. Women may however acquire land through marriage and for as long as the marriage continues. In the event of a woman losing her husband through death or divorce however, she loses the land as well. In certain circumstances, however women can hold land in trust for their sons and brothers.

In the matrilineal system women have a right to the lineage land. Women's access to agricultural land appears to be better in regions where matrilineal system prevail like in the Ashanti Region of Ghana, where more than 50 percent of the holders are women. In Northern Region where patrilineal system of inheritance prevails, only 2 percent of holders are women (NCWD, 1990). Ewusi! (1978) Cited in Walker (1990) however documented that, even in matrilineal Akan societies where women have right to lineage land, the lineage heads often discriminate in giving land out to women.

2.2.2 Access to credit

Lack of access to credit is another constraint that women face in crop production. For people who do not have means to sponsor their own ventures from their resources, credit is very

important. Women need credit to purchase the factors of production land, hired labour, capital inputs (including seed, fertilizer, agrochemical and farm machinery) as well improve upon what they already have. Gittinger,(1990) wrote that, to expand their economic activities and earn more income to support their families, women need access to more resources. Saito and Weideman (1990), found out that, farmers who cannot afford inputs, and who cannot pay for hired labour are less likely to be interested in extension activities likewise, extension agents are less likely to target this group because of their inability to respond to recommendations; to purchase inputs, and hire additional labour. This can in turn reduce their chances of having contact with extension agents. In Africa, rural women receive less than 10 percent of the credit allocated to agriculture (IFAD, 1991). A world Bank draft report (undated) also indicates that a common problem of both men and women farmers are insufficient access to credit, inputs, and technology that they would need to improve agricultural production and the life of the rural households. However women farmers often face additional obstacles to obtaining credit and consequently are less able to purchase inputs. It also stated that, one reason why women farmers sometimes do not participate in extension activities is that, they often face problems in getting access to credit, inputs, and technology. It added that, if rural women do not have cash or a way of getting credit, they will not be able to afford to buy improved seeds, fertilizers, or other inputs. Lack of credit prevents women from purchasing capital equipment and technologies. When women know that they will not be able to afford recommended inputs, they are less interested in having contact with extension agents, or participate in extension activities. Exclusion from local groups, such as farmers groups may prevent women from receiving not only extension advice, but also credit, particularly if the extension agent plays an

agricultural production activities. Technologies to improve crop production are lacking for small holders in general and for women in particular. Most of the technical improvements are geared towards tasks largely performed by men such as ploughing (Gittinger, 1990). They also wrote that even if the agricultural service put more emphasis on reaching women farmers, it may lack appropriate technology to recommend. This is because the technology improvements in agricultural production are mostly intended to improve cash crop production, which traditionally provides no benefits for women though they may provide some labour. A study carried out in Zambia showed that weeding which is a major woman's task can be performed six times faster with animal traction. Animal traction can double or triple rates of return by freeing up labour (Allen, 1984 cited in Saito and Weidemann 1990). Female farmers generally own fewer tools than men do. Since farm capital contributes positively to yields, female farmers are likely to have lower yields than male farmers are. Moreover, new technologies have been inappropriate to women's need.

The International Food Policy Research Institute (IFPRI 1995), found out that the effect of the adoption of labour saving equipment for agricultural production however depends on whether those affected are a mix of small holders looking for labour saving devices or hired labourers depending on employment from larger households. For women who farm on their own plots, new agricultural technologies may reduce drudgery and increase productivity. But for female hired labourers, adoption of labour saving devices may mean the loss of employment. Furthermore most of the technical improvements are geared to tasks largely performed by men such as bullocks for ploughing or tractors for land clearing. Most women in Ghana still use the most rudimentary forms of technology, which are not only time consuming but also labour

adoption of labour saving equipment for agricultural production however depends on whether those affected are a mix of small holders looking for labour saving devices or hired labourers depending on employment from larger households. For women who farm on their own plots, new agricultural technologies may reduce drudgery and increase productivity. But for female hired labourers, adoption of labour saving devices may mean the loss of employment. Furthermore most of the technical improvements are geared to tasks largely performed by men such as bullocks for ploughing or tractors for land clearing. Most women in Ghana still use the most rudimentary forms of technology, which are not only time consuming but also labour intensive. This limits their productive capacity and ability to cultivate large tracts of land (NCWD, 1994).

2.2.4 Lack of education:

In the early 1980's, average literacy rate for men in developing countries was more than 50 percent while more than two thirds of women were still illiterate. This disparity continues to be larger in rural areas where educational attainment is lower and persists despite high rates of returns to women's schooling and high social returns to women's education. The gap has serious implications for agricultural productivity and incomes. Better-educated farmers are more likely to adopt new technologies and have access to extension services (IFPRI, 1995). Saito and Weideman (1990) reported that women's access to agricultural extension and their ability to comprehend and use technical information is compromised when they lack basic education.

In his study on extension for women in five African countries, (Gill, 1987 cited in Saito and Weidemann 1990) reported that the vast majority of rural women were illiterates. Studies supported by the World Bank have demonstrated the critical link between farmer efficiency and farmer education (Jamison and Law, 1982 cited in Saito and Weidemann 1990). The impact of education on efficiency is likely to be particularly strong when modern as opposed to traditional agricultural techniques are being used.

In their study on education, and farmer productivity, (Lockheed Jamison and Lau (1982), cited in Saito and Waidemann 1990) examined eighteen studies consisting of thirty-seven sets of farm data. Controlling for other variables, they estimated the effect of education on farmer efficiency. They concluded that farm productivity increase by an average of 7.4 percent if a farmer completes four years of elementary school. Similarly one of the few studies to compare the efficiency of female and male farmers concluded that, both male and female farmers in the village of western Kenya achieved higher maize yields when they had four years of education (Moock, 1973 cited in Saito and Weidemann(1990)). These have implications on how extension messages are delivered. Because of their lower educational levels, women are less able than men to respond to written extension materials . Other forms of communication are needed particularly oral or visual. Moreover ability to read and write is a criterion for the selection of contact farmers in the T & V extension system in some countries. For women to fully participate in extension activities, requirements must be changed (Saito and Weidemann 1990). A study of coffee, a high value crop in Kenya found that increasing the primary education of women farmers not only causes them to plant coffee trees more readily, but also

increases the adoption of coffee by other women farmers who are likely to copy women than men.

2.2.5 Access to extension services

Within the agricultural sector, information about new technologies is spread through both public extension services and private initiative or non-governmental organizations (NGO's). Agricultural extension services in many African countries still design their programmes as if all farmers were men. This is because of the erroneous belief that men are the main decision-makers in agriculture. It also reflects the fact that the extension service is overwhelmingly staffed by men, as a result, male extension agents are bias in providing production information to male farmers while female extension agents target women, concentrating more on programmes such as home management, nutrition, processing (Gittinger, 1990).

A report by the World Bank indicated that, despite the critically important role of women in African agriculture, they are responsible for at least 70 percent of staple food production, and are also significantly involved in other agricultural activities, agricultural extension services have been geared towards male farmers (Walker,1990). It further stated that women are under represented within the extension services and compared to male farmers or farming couples, women receive far less attention from extension services and consequently benefit far less from improved farming techniques.

On a continent where women produce about 90 percent of the food and 60 percent of the total

agricultural output insensitivity and neglect by extension is the norm. (USAID, 1984 cited in Walker,(1990)). Numerous case studies have pointed out the "gender gap" that exists in the provision of extension services. A study in Kenya (Staudt, 1992 cited in Walker (1990) showed that farms managed jointly by a farming couple received at least one visit in 75 percent of the cases yet women managed farms were visited in only 50 percent of the cases. A study in the Tanga Region of Tanzania produced similar results (Due, Mollel and Malone, 1987 cited in Walker (1990). Jointly managed farms were four times more likely than female managed farms to receive at least one extension visit with the consequence that jointly managed farms were more likely to adopt improved practices that resulted in almost doubling their yields of maize.

In Cameroon, a study in the south western province (Almy and others, 1988 cited in Walker (1990) revealed that extension workers were better known to male headed farming households. When asked for the name and post of the local extension agent, every male heading a household could accurately give the name compared to the 42 percent of the women farmers heading households. The likely reason is the frequency of visits. Gellen (1994) noted that women grow most of Africa's food and sustain rural life but lack the critical support land, fertilizer, labour saving implements, and the political clout needed to maximize their pivotal role. Okechukwu (1990) wrote that agricultural research and extension have not adequately addressed the often neglected group of extension clients -women. In their study on the role and participation of rural women in agricultural extension activities and Mirikoozani Gizari (1995) observed that women are engaged in a wide range of agricultural activities in many

developing countries; yet they continue to be systematically marginalized, under valued, and unrecognized. At the same time it is widely acknowledged that most female agricultural producers have limited access to extension and other external resources to increase their productivity and incomes (Mirikoozani and Gizari, 1995). They also emphasized that special attention should be paid to rural women's training. They reported that because the official statistics of Iran takes into account only the head of the farm households, the unpaid responsibilities of women are not recorded and this category of farmers is overlooked by training.

Interviews and observations of extension personnel in the field (Spring and Kayuni, 1983 cited in Spring 1985) showed that farmer's contact with extension workers through home and farm visits, attendance at group meetings and demonstrations, and participation in training courses were differential regarding sex. Extension workers were the major source of advice for both men and women farmers, but men received more personal visits and more advice on more topics. Group meetings tended to reach more farmers but here again women did not benefit. Women compared with men receive few agricultural extension services such as training, inputs, credit, and home management and farm visits. Women's farming practices such as time of planting, spacing, fertilizer usage and plant protection practices are often deficient and reflect lack of agricultural education and extension services. However, when women are given credit, agricultural training, inputs and farm management skills their agricultural performance become similar to men's. In particular, women make good use of credit and rarely default (FAO, 1996).

Jiggins (1986)cited in Saito and Weideman 1990) reported that although women farmers constitute a sizable and growing percentage of the agricultural labour force world wide, women farmers are generally ignored in extension programmes.

2.3 Barriers to participation in extension activities.

Numerous factors pose as barriers to women farmers' participation in extension activities. These are socio-cultural norms, time and mobility constraints, and social activities.

2.3.1 Socio-cultural norms

Studies on rural women have come out with a whole range of obstacles, which confront or impede women's involvement in extension activities. Oackley and Garforth (1983) have summarized these obstacles as follows:

i) Cultural : Cultural obstacles are bound up in local customs and religious practice. In some societies women are prohibited from conversing directly with non-family men. In other words custom forbids them to meet in public places while in many, women are openly discouraged from participating in non-domestic activities.

(ii) Domestic: Domestic burdens are a severe impediment to women getting involved in extension activities. Women have a full-time job contributing to the domestic economy and caring for and managing the family.

(iii) Status:: Women are generally accorded a lower status than men and are not encouraged or expected to play an active role in extension activities. Poor women find it almost

impossible to break out from their ascribed status in order to have a voice in development. Studies carried out by Saito and Weideman,(1990) showed that, in most countries, cultural norms circumscribe male-female interaction. These they said tend to be more restrictive in rural than urban areas, and in traditional than modern societies. In Islamic societies, prohibitions tend to be more rigid. The norms may or may not be codified into law. They found out that socio-cultural factors affect extension on two levels:

- That of an agent to a female farmer and;
- That of a female farmer to a male farmer.

In some countries, the gender of the extension agent does not appear to be an overriding issue. Even where women have equal legal status, rural women may be reluctant to speak up in extension meetings in the presence of male agents or men from the same village. Men are seen as authority figures whose decisions are to be followed. Male extension agents raised in the same cultural traditions often expect women farmers to follow their directions and do not encourage their questions (Kogh, 1988, Evans, 1989 cited in saito and weideman, 1990). These problems can be relieved by arranging for women farmers to meet in separate groups and where possible to have female agents work with them.

A World Bank (1989) report showed that cultures vary but in traditional societies, women tend to concentrate on functions performed for the family or within or near the household whereas men are usually encouraged to move outside to more non-traditional activities. This "inside, outside" dichotomy holds more true for some countries than others but it has its roots in

women's maternal role. It emphasized that opening up information and the means of production to women can help them consider a wide range of "inside/ outside"choices and find where their true comparative advantage lies.

⇒ Saito and Spurling (1993) in their study on developing agricultural extension for women farmers found out that women's traditional role in farming systems in the developing world is influenced mainly by the following:

⇒ Reproductive roles Bearing and rearing children and taking primary responsibility for domestic maintenance, which reduces their mobility, time and energy needed to carry out farming activities. Women's reproductive function can pose a serious health risk and cause loss of energy when they are pregnant or bast-feeding.

⇒ Socio-cultural factors keep women more home bound than men, reduce economic options and social interactions and restrict their access to the information and resources needed to respond to economic opportunities. These socio-cultural forces include religious practices that can limit women's mobility, social contacts and types of activities they can pursue: In Asia, the obligations and rights differentiated by class and caste in all three major religions (Hinduism, Islam and Buddhism) affect women's agricultural roles. In many parts of Latin America, women's farming activities are differentiated by class; cultural attitudes about gender roles and relationship that circumscribe women's activities, responsibilities, decision making authority and interactions with men, formal legal systems reinforced by customs that relegate women to an inferior status in developing countries. Women are typically discouraged from owning land or other agricultural assets, opening bank accounts, or contracting credit in their

own names or even selling the product of their own labour without their spouses approval.. A report by UNESCO (1981) showed that critical social problems and obstacles to women's participation in development include inferiority complex. When participating in a man's world in the modern spheres of education, employment and social situations, women display signs of insecurity, lack of confidence and limited aspirations, in other words they feel inferior. Yet participating in their own world, agricultural and house production reveals women to be organized, enterprising, resourceful, and capable. Feeling of inferiority is not inherent to women but is a result of social, economic and environmental influences, open and subtle discrimination, segregation and subordination. Cultural practice in many African societies requires women to kneel to greet men, to eat with children apart from men, and address men as " Masters''or " Lord''.

An FAO draft report pointed out that, rural women are often not able to participate fully in extension activities because they are held at times when it is impossible or difficult for them to attend and/or in places they cannot easily reach. It further stated that social, cultural and religious restrictions prevent women from traveling freely within or outside the community; less money to pay for transportation or fewer means of transportation available for their use (bicycles and motor bikes). For others anxiety about the welfare of their family members prevent them from taking time off.

2.3.2 Time and mobility constraints:

Women farmer's time constraints affect their participation in extension activities (FAO draft

report 1996. Women have less free time available than men do for meetings, training and other extension activities. They often work long hours than men in agricultural tasks. In addition, women have household and child care responsibilities; the provision of fuel wood and water, and food preparation which are all time consuming. Other family obligations such as looking after the infirmed and aged occupy their time (FAO, 1996).. Many women's tasks are repetitive and time consuming and are performed without labour saving technologies. It takes women one and half hours to fetch water, because they have to go a long distance and making two or three trips a day (Aurat, 1991 cited in F.A.O 1996) . Studies of time use in rural Africa indicate that women are likely to have fewer leisure hours than men are. Researchers in Burkina Faso reported that men averaged twice as much time resting and relaxing each day as women. The same study reported that women contributed almost twice as much time per day to food and crop production as men. Women did virtually all winnowing, threshing, food processing, and fetching of water. Men spent more time on community obligations, crafts and other professions and listened to radio or reading. Available data in Kenya indicate that women spend one third of working hours on food preparation and childcare, which stretches their working day to 13-14 hours. Most of them spend three hours a day fetching water (Saito, 1992).

Women may be less flexible in terms of time because of agricultural and household tasks that must be performed daily, often at set times; feeding, milking animals, preparing and serving meals, etc. The time and energy involved in providing the family with food, fuel, and water leave little time to participate in regular extension programs, and inhibit women's ability to

respond to opportunities. Women are less mobile because they have less time, less cash for transportation and less likelihood of owning transport. In some countries, socio cultural and religious barriers limit their mobility as well. This limits their ability to attend training courses outside their villages (Saito and Weideman, 1990). A study in Zambia showed that only 5 percent of women in the northern, central, and southern provinces attend farmer's courses. In the Eastern province, only 15 percent of those attending courses were women. The reason for the low attendance by women was the lack of transportation. In one district, where 41 percent of the households were headed by women, no woman attended the courses offered by a residential training center. The reason was that, women farmers who were heads of households were unable to take several weeks off from their villages to attend the courses (Saito, 1992). The design, timing and location of training do not consider women's agricultural roles or their multiple responsibilities for food preparation, processing and storage and care taking within the family. Frequently farmer training centers do not have facilities for women and children and do not address the need for childcare. Overall the timing and location of programs must take into consideration women's multiple roles and responsibilities, particularly the severe constraints on their time and mobility (Gittinger, 1990). An FAO report (1996) indicate that ,women often have less time available than men so they have less time to spend in traveling to locations of extension activities. Time-consuming tasks that must be performed daily prevent women from traveling distances to attend meetings and other activities. Women often have less money to pay for transport and less access to means of transport than men do. Sometimes, cultural or social restrictions keep women from traveling outside of their communities or homes at certain times(e.g. after dark).

2.3.3 Gender of Extension Agent and Contact with Women:

Surveys carried out in Kenya and Nigeria, showed that as would be expected, female agents had contact with more females than male farmers. Cultural and social restrictions on interactions between gender hinder easy communication between male agents and female farmers. In Northern Nigeria contact was almost impossible between male agents and Islamic Hausa women who are farmers and landlords. In Kenya, while social norms do not prohibit male agents from contacting female farmers, the survey data did show that the same problem and preferences are encountered (Saito, Spurling, Hailu and Melconen, 1994). Given that the number of women farmers are increasing and that extension services have very few female agents in the field, weak and ineffective communication between agent and farmer is a serious problem, compounded by differences in ethnicity, group, language, educational and social status. Although few female farmers surveyed said the agents gender was their major extension problem, a sizable proportion (37 percent in Nigeria, 25-33 percent in Kenya) expressed a preference for agents of a particular gender. In Kenya agents work with both male and female farmers but women farmers surveyed preferred male agents because male agents provide more agricultural advice while female agents concentrate on home economics. Moreover, 42 percent of male agents surveyed in Machakos and Muranga districts of Kenya indicated problems working with individual women farmers as having more difficulty than men in terms of access to capital, general interest in recommendations and shyness. Many male agents experienced problems in delivering messages about nutrition, childcare and home management that are of particular relevance to women.

Accounts of extension work in Zambia reports that delivering extension to women has been inhibited by traditional and cultural resistance of male extension agents to contact women as well as by male agents limited training on crops cultivated by women (Chenoweth, 1987 cited in Saito, Hailu, Mekonnon and Spurling (1994). The gender of the agent would be less critical if information and other technologies made available by extension services to a household were effectively passed to all interested parties in the household. Husbands do not necessarily pass information or technologies to wives particularly when they are gender specific or gender concentrated. In Zambia for example, men were given beakers for measuring fertilizer although the women carried out fertilizer application. The women continued to apply fertilizer but in inappropriate amounts (NORAD, 1985 cited in Saito, Hailu, Mekonnon, and Spurling 1994). Spring (1987) wrote that agricultural extension in virtually any country are composed of male agents. This lack of female extensionists is a tremendous problem in cultures that discourage interactions between unmarried males and females. Rural Honduran compesinas will not readily interact with male extensionists particularly if their husbands are present. This decreases the potential for information exchange (Colverson and Ewert, 1990). It has been argued for two decades (Besorup, 1970 cited in Shultz 1989) that, some agricultural extension agents should be monitored in areas of the world where farms are often managed by women. Extension programmes in the United States have generally included female agents to work with women in nutrition and home management. A survey of extension services worldwide revealed that in African countries where data was available, only 2.6 percent of the extension staff were women and in no African country did women represent more than 9 percent of the

staff (Swanson and Rass, 1981 cited in Walker, 1990).

There is an ongoing debate about the relationship between women's representation in the extension services and success in reaching women farmers. A few (Knudson and Yates, cited in Saito and Weidemann 1981) seem to argue that women in the extension service is necessary for reaching women farmers. The majority view (Ashby 1981, FAO 1983b, Berger Dehancey and Mellencamp 1984, Weidmann 1987 cite Saito) is that women in extension service are not sufficient to ensure that extension service reach women. Other studies (Spring, 1986) argue that women in the extension service may not even be necessary to reach women farmers. Thus with the exception of the third perspective, women's representation in the service is an indicator of attention to and concern for women farmers.

Sometimes cultural practices or religious customs make it difficult for male agricultural agents to work with female farmers. For example in Pakistan, Purdah regulations precluded male extensionists from entering the homestead to vaccinate poultry while the husband was absent. Because of tight schedules, the agents were unable to return to these families and a spread of poultry diseases followed consequently, female extension agents were later employed (Carloni, 1983 cited in Saito and Weidemann(1990). In this instance women need to be recruited and specially trained as agricultural extension agents. The rules governing contact between men and women may not apply equally at all levels of the society. Poor rural women eking out a subsistence living are less influenced by social status and may be contacted by professional men even in many countries where stereotypes are contrary to such contact (Minette, 1985).

The gender of staff is perhaps less important as an extension criterion in reaching rural women than has been thought. There are cases where male field agents who have understood women's production roles and needs have worked willingly and effectively with women producers (Minette, 1985).

In an FAO executed project in Zaire, emphasis was placed on working with women's groups to improve cassava and maize production. Traditionally these food crops are "women's crops'' and male agriculturists have not always been trained in their production. In this case, male extension workers after intensive training in the cultural practices and introduction of new varieties of crops successfully reached women farmers. In Kenya, an extension agent was interested in helping his women clients in nutrition matters (Muzale and Leonard, 1982). In another case an extension agent in Sri Lanka trained women in the use of tractors and spraying equipment in modern crop husbandry. These were cases in which the women were not only strongly organized, but were also recognized by district administrative officers and agricultural supervisors as appropriate clients for extension assistance. In each case, training and orientation rather than the gender of the field worker was the key factor (Minette, 1985).

2.4 Why women are not fully integrated into extension programs:

Studies show that women are often not fully integrated into extension programs. Different authors or researchers have come out with their findings on the issue. Reasons given by an FAO draft report (1996) are that:

- Extension workers are unaware of the essential and significant role of women in

agricultural production and the well being of rural households and lack information about the specific agricultural and household maintenance tasks of women and how these are integrated and /or complementary to the tasks of men. Extension activities therefore often do not meet the needs of women farmers.

- Extension workers are unaware of the specific time and mobility problems and constraints women farmers face and plan extension activities at times and places that hinder women's participation.
- Extension workers are unaware of the alternative or more effective ways of working with women farmers where there are socio-cultural or religious constraints that restrict contact between an extensionist and women.
- Extension agents communicate with men farmers on the assumption that men will transmit the information to women in the household. Frequently the information is not transmitted at all or is transmitted only partially.
- Extension workers are unaware of, and do not take into consideration the problems women face in getting access to credit, inputs and technology. Bukh (1979) reported that the reason why women farmers often are reluctant to follow the extension agent's advice is that the ideas being introduced by extension service are not appropriate. In her study on extension approaches to reach rural women, Gura (1985) reported that extension does not reach female farmers because of traditional practices such as:

working with the head of the household only, assumed to be a man.

concentrating on commercial crops rather than food crops which are usually grown by women.

failing to note the division of labour by sex within family units.

assuming that information given to one family member is shared with other family members .

assuming that women's time is flexible and that women are available for extension activities

at the same places and time as men.

assuming that women's interests are concentrated in home economics.

Walker.(1995), in her study of issues of gender in international agricultural extension, highlights the importance of looking at the needs, contributions, and aspirations of women as well as men in regards to extension policy programming and implementation. She reported that international extension programs have largely not taken into consideration the concerns and needs of women they supposedly serve. Factors to which this has been attributed to include:

women's inability to travel to extension centers.

different communication channels from men such as traditional women's work groups

lack of land.

limited income to purchase necessary agricultural equipment and supplies or to hire labour

and draft power to implement the new extension techniques.

inconvenient scheduling of demonstration or meeting times and locations.

gender bias in extension staffing.

lack of improved technology for traditional food crops grown by women

lower literacy and education.

national and international policy structures that favour male.

Colverson and Ewert (1990) in their study on rural women's access to agricultural information noted that, although women constitute a sizable and growing percentage of the agricultural workforce worldwide, women farmers are generally ignored in extension programs. According to her, several factors contribute to this ignorance including government policies; cultural constraints; extension focus on resource rich often male farmers; and women's lack of formal education. She reported that another issue that surfaces when examining training issues is the cultural perception of women's work. She indicated that a number of male extensionists state that agriculture is not a large part of women's work and therefore is not important to deliver. The results showed that women prefer training sessions with only women present as men turn to dominate discussions and inhibit the women's desire to speak.

Nettie and Kingman (1991) in their study on female farmers and male extension workers in Tanzania acknowledged that village extension workers and female farmers have their assumptions and expectations about each other's work and about the possibilities of working together. These they said hinder the cooperation and communication between village extension workers and women. They reported that reasons and arguments given by village extension workers for their problems in reaching female farmers reflect several assumptions

about women. These they summarized as follows:

all women are married.

- it is a man's task to seek advice.
- heavy workloads are a major problem for women.

women lack access to resources.

women lack education

- women suffer from low esteem.

These assumptions they said influence the ideas and attitudes of village extension workers towards possible cooperation with female farmers. They reported that majority of extension workers have married women in mind when they talk about women whom they assume are controlled by their husbands who are seen as the main decision makers when it comes to agricultural production and agricultural improvement. Consequently, some village extension workers do not think it is logical to work with women. By assuming that all women are married a substantial number of women remain invisible, i.e. the unmarried women. Among this group are women who are heading households (widows, divorced and spinsters). These female heads of households do not have a husband to restrict them in their movements or to curb their decision-making power. The village extension workers overlook two important issues:

Firstly, that women have certain degree of autonomy with regard to part of the agricultural production and secondly, that although women do not have decision-making power, they carry out a considerable part of the agricultural work.

The results of the study further showed that extension workers do not find it easy to approach married women or to work with them because they are afraid of husbands becoming suspicious when their wives are visited on a regular basis. They also see women to be preoccupied by homebound activities leaving them little time for agricultural production. This prevents the women from becoming contact farmers since for example, the management of a demonstration plot requires relatively more work and special and continuous attention from a contact farmer. Some of the village extension workers assume that women are not sure of themselves, are ashamed to have meetings with men, fear to seek advice and are shy. In other words they refer to women as if they have 'inferiority complex''.

However women's lively participation in extension meetings especially organized for women and their keen participation in discussions held in their language throws another light on the assumed shyness and inferiority complex ascribed to women.

2.5 Criteria for selecting contact farmers.

In any extension organization, there will be only a small number of trained professional extension agents within any region with responsibility for thousands of farm families. The solution is for extension agents to seek out and enlist the support of local people who have leadership qualities or influence within the area. Local leaders can be of invaluable assistance to an extension agent in a number of ways. They can assume responsibility for certain activities in the agent's absence; help organize local extension groups; assist directly in the spread of new ideas and practices by demonstrating to them in their fields; and generally serve as a point of contact between the agent and the farmers. By enlisting the help of contact

farmers, the extension agent will have a chance to reach more farmers than he could on his own Working with local leaders also builds closer ties with local farmers and encourages farmers' confidence in the extension service and their willingness to participate in extension activities.

The contact farmer is a central concept within the extension approach. Contact farmers are the communication links between the village extension worker and other farmers. The village extension worker, sometimes with village authorities selects contact farmers. The village extension worker keeps the following criteria in mind:

The farmer should be willing to discuss agricultural matters in a group.

The farmer should have farming as his/her main occupation.

The farmer should be willing to attend meetings and to listen to the village extension worker (Sprekels and van Sonsbeek 1988 cited in Nettie and Kingma 1991). In practice, the method of selecting contact farmers tend to favor some group of farmers. Becoming a contact farmer consolidates a person's status and can provide better access to limited supply of farm inputs. A survey held in 1987 among a sample of contact farmers in two districts in Tanzania showed that in the Kahama district 73 percent and in the Shinyanga district, 30 percent of the contact farmers were village leaders (Sprenkel and van Sonsbeek 1988 cited in Nette and Kingma 1991). Village leaders are assumed to be better off and have better access to resources. Contact farmers who are asked for cotton demonstrations are often supplied with artificial fertilizer and insecticides free of charge to be applied on their demonstration plots (Nettie and Kingma 1991.) An FAO draft report (1996) showed that, certain commonly used

criteria may exclude women: e.g. requirements of land ownership, literacy, and ability to purchase inputs. It stated that, women are more likely to be selected as contact farmers are, if criteria for selection emphasize farming abilities, and if extension agents made the selection. In Muranga district in Kenya for example, more than half of the contact farmers were women in areas where the selection criteria included active involvement in farming and availability to meet extension agents. But in areas where land ownership was a selection criterion or where chiefs selected contact farmers, fewer women were contact farmers. The report further stated that contact farmers should be selected for certain characteristics: They should:

Represent the local range of farm size, cropping patterns, and socio-economic conditions, and be regarded by other farmers as worthy of imitation.

Be active participating farmers.

Be willing to adopt extension recommendations on at least part of their land, allow other farmers to observe the new practices, and be willing to explain them to other farmers.

As much as possible come from different families.

Be from geographically dispersed farms.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

The study which aims at finding out factors influencing women farmers' participation during extension delivery is a fact-finding exercise as such a survey research of the descriptive type was employed to collect qualitative data.

Hsin-Pao-Yang (1966) defines a survey as an inquiry into the composition, activities, and living conditions of a group of people. According to him, it has four main characteristics as follows:

(i) It directly concerns social life as it exists here and now. What is observed, described, and collected, is a body of fact about current situations and problems.

(ii) It focuses on a given locality or geographical area.

(iii) It leads up to measures of reform, which take account of data assembled both as regards the necessary improvements and the means to obtain them.

This view is held by many researchers (Young, 1949, Odum et al 1929 Abraham, (1951) cited in Hsin-Pao-Yang 1966). Some social scientists, on the other hand, have maintained that, a social survey is for fact-finding and not for social amelioration; after the essential data are assembled by the surveyors, the policy-makers, administrators, social reformers, and the

politicians can take over to set up plans for community improvement. The survey research method was found appropriate for this study in view of its characteristics as stated above; by H sin-Pao-Yang (1966). It focuses on the social life of women farmers in a particular geographical area, and will lead to recommendations for reforms in the extension system, to encourage broader participation by women.

3.2 SAMPLING TECHNIQUES

3.2.1 Population of Study

The target population of this study included :

i) all women farmers in Savelugu/Nanton and Tamale Districts. This includes women who carry out agricultural activities such as crop production, animal production, agro-processing storage, crop utilization and marketing.

ii) all extension agents in Tamale and Savelugu/Nanton districts.

3.2.2 Sample selection

A total of sixteen villages were randomly selected from the two districts, thus, eight villages per district. A sample size of six (6) women was taken from each village. This gave a total sample size of 96 women. Sixteen extension agents(8 from each district) were also selected.

3.2.3 Selection Procedure

Simple random sampling technique was used to select respondents. This technique was used in order to ensure that, each individual in the population had an equal chance of being included in the sample.

in the sample. the population to be made based on the results obtained from the sample.

A list of households in each selected village was obtained from either the extension agent in charge of that village or, the Chief/Contact farmer. Each household on the list was given a number, which was written on a piece of paper of equal size. The pieces of paper were folded and put in a container. This was shaken vigorously until they were mixed up. One of the enumerators was blindfolded and asked to pick the papers one after the other. Any time a paper was picked, the number on it was recorded and the household it represented recorded. After the required sample size was chosen, three additional numbers were selected to replace the "not available" or not "found" respondent at the time of the interview. From each household selected a woman was picked randomly for the interview.

Even though the study is not a comparative one, it was deemed appropriate to interview men in order to ascertain whether the low coverage of women farmers by extension agents applies to men as well. This could also be used as a standard against which the extent of neglect can be measured. The same number of men was therefore, interviewed (96) using the same selection procedure (random sampling). A question was asked to find out if extension agents contacted them or not. From this, it was possible to know the number of men contacted by extension agents in the study area. Sixteen extension agents (eight from each district) were also selected using simple random sampling from the two districts to fill questionnaire.

3.3 METHODS OF DATA COLLECTION

3.3.1 Sources of Data

Both primary and secondary data were collected for the study

Primary data for the study was collected from:

(i) women farmers; (ii) front line extension agents who are in direct contact with farmers; and iii) Regional WIAD Coordinator.

Secondary data was gleaned from:

(i) Annual reports and annual programme of work of the two study districts, Regional Agricultural Extension office, Regional WIAD office and Policy documents of the Department of Agricultural Extension Services.

(ii) Management and Information Systems (MIS) documents.

Methods used in collecting the data were: i)Interviews(ii)questionnaire (iii) Documentary Evidence - Reports, annual programme of work, and policy documents.

An interview schedule was designed for the farmers since majority of them was illiterate for that matter, could not read or write. They were therefore interviewed in the local language - Dagbani. The interview schedule composed of both open-ended and close-ended questions.

The schedule covered areas such as:

SECTION I : Background characteristics of respondents.

SECTION II : Role of women in agricultural production

SECTION III : Women farmers' contact with Extension

SECTION IV : Barriers to Participation. in extension activities

The questionnaire covered broad areas such as :

SECTION I : Background characteristics of extension agents

SECTION II : Extension agents' contact with women farmers

SECTION III : Perception of extension agents about women's role in agricultural production

SECTION IV : Criteria for the selection of contact farmers

SECTION V : Obstacles to involving women farmers in extension activities.

The questionnaire and interview schedule were constructed and approved for pre-testing. Two pretests were conducted before the final questionnaire and interview schedule were administered to the respondents. The first pre-testing of both the questionnaire and schedule was done in the Tolon/Kumbungu district of the Northern region which has the same characteristics in terms of vegetation, physical features, type of crops grown, religious and cultural practices ethnicity, and farming systems.

Changes were made in terms of deletions, additions, and re-framing of questions on both the questionnaire and interview schedule after which they were pretested the second time. The second pretesting was carried out in Tamale district in two villages, which were not part of the villages chosen for the actual fieldwork. Both questionnaire and interview guide were amended finally for the actual survey.

3.3.3 Interviewer Training

Prior to the pretests, four research assistants were recruited and trained on all the important

facets of the interview schedule and the objective of the study. These were redeployed staff of the Extension Services Department. They were made to rehearse the interviewing process several times until the researcher became satisfied that they were capable of collecting the information without difficulties.

3.3.4 Preliminary Contacts and Appointments

The extension agents in charge of the selected villages were asked to inform the chiefs, contact farmers and other opinion leaders about the impending research after which preliminary visits were made in the company of the extension agents in charge of the selected villages to introduce the researcher, explain the survey objective, and fix dates for the interviews. The opinion leaders of the sixteen villages received the researcher with enthusiasm.

3.3.5 Collecting the facts

Rapport was established between the interviewer and the respondent at the beginning of the interviewing process in order to make the respondent feel relaxed. The interviewing was done in the local dialect (Dagbani) and the responses recorded verbatim. The research supervisor and research assistants ensured that the questions were properly asked. In this case, the validity of the instrument was ensured to a reasonable extent.

After each day's interview, the researcher went through each questionnaire to ensure that they were administered properly. Blank questions or sections of the questionnaire were returned to the research assistants to fill. In case any research assistant found it difficult filling the blank questionnaire, sections, or items, a return trip was made to the villages of the respondents concerned for them to provide answers to those questions. Twenty days were used to collect

the data.

3.4 Why Savelugu/Nanton and Tamale Districts were chosen.

The following reasons prompted the researcher to select Tamale District:

(i) Women are deeply involved in agricultural production in the district

(ii) Researcher speaks the same dialect with the people hence there was no language barrier to communication.

(iii) Researcher's familiarity with the cultural norms, religious practices and farming systems of the area was an advantage..

(iii) Proximity of Tamale District to the Regional Agricultural Extension office in order to take advantage of the availability of facilities such as transport, photocopier computers.

(v) Proximity of researcher's residence in Tamale to the villages in the study area helped to reduce cost, considering the limited funds available for the study.

The Savelugu/Nanton district was chosen because it is one of the IFAD (now SADEP) project areas in the Northern region. The project gives support to women in the form of credit for crop production, income-generating activities, marketing of agricultural produce and small ruminant production as such the researcher assumed that women would be more involved in extension programs than those in Non-IFAD operating districts.

3.5 Internal Validity

In order to ensure that the data collected were reliable and accurate, certain measures were taken by the researcher.

(i) An "other" category was included in the structured questions to allow for an exclusive list.

(ii) A pretest was carried out just before the actual data collection to detect unclear, ambiguous and irrelevant questions.

(iii) The questions were constructed in such a way that they were very clear and unambiguous.

(i) As many open-ended questions as possible were included in the questionnaire and interview schedule so as to tap the respondents' true feelings, or answer in his/her own fashion. Follow-up probes for a set of closed items were carried out immediately after the respondents' choice of an alternative.

(v) Questions worded differently were designed at different locations of the questionnaire/schedule to serve as crosschecks to respondents' replies.

3.6 ANALYSIS OF DATA

After returning from the field, the data were examined again before analyses. Each interview guide or questionnaire was cross-checked for cases of non-response, inconsistencies and uncompleted data. No questionnaire or interview schedule had a whole section left unanswered. After successfully screening the questionnaire, a coding scheme was prepared to direct the process of coding. After coding the questionnaire and interview schedule, they were given out for computer processing. The data was analyzed using the statistical package for social sciences (SPSS).Frequencies and percentages were calculated.

CHAPTER FOUR

CHARACTERISTICS OF THE STUDY AREA

4.1 The Regional Context.

The Northern Region of Ghana is predominantly an agricultural region with 72 percent of the labour force employed in agriculture. With its capital in Tamale, the region covers an area of 70,390 square kilometers. .

4.1.1 Geographical Features

4.1.1.1 Climate

The climate can be described as humid semi-arid. The mean annual rainfall and length of the raining season slightly increases from the North of the region Southwards. Climatically, the year can be divided into a dry season, which lasts for five to six months, and seven months raining season. The onset of the rains is unpredictable. The wet season may commence as early as the beginning of March or as late as the end of June. Occasionally, sudden drought leads to total crop failure especially when they coincide with drought sensitive stages of plant development such as tasselling of maize . Sometimes it is pointed out that climate is the determinant of farmers' decision with respect to the choice of cropping systems within the region (Differences in the long-term annual rainfall across the region are not very large. Usually the major proportion of the early rains is lost due to surface run-off, therefore early planting is very risky.

4.1.1.2 Topography and soils

The parent material and the topography basically influence soil formation. The soils are usually well drained and provide no major limitations for vertical root development. However, due to prevailing clay minerals and a low organic matter content, the water storage and cation exchange capacities are very low. The soils are generally poor in nitrogen while the available phosphorus poses the narrowest limitation to crop production, potassium is usually available in sufficient quantities (NORRIP 1982, NAES Annual Report, 1987/88).

4.1.1.3 Vegetation

The area is located in the Guinea Savannah Zone. Under the influence of recurrent burning, fire proclimax vegetation is predominant with only a few species of fire-tolerant under-storey of grass cover. The tree population is dominated by the economically important Dawadawa (Parkia bigloboso). Sheanut (Butyrospermum parkii) and Kapok (Ceiba pentandra).

4.1.1.4 Hydrology and water sources:

The ground and surface water potential in the area which is determined by the prevailing rainfall conditions and the underlying upper voltaian rock formation is poor. The accumulation of occasional excess water in the wet season, heavy run off, high evaporation, and low infiltration rates contribute to water deficiencies thus, hampering agricultural production. Irrigation does not play a significant role in the area.

4.1.2 Land Use and cropping systems:

The population of the Northern Region is predominantly rural although a large percentage, (approximately 30 percent) live in settlements larger than 200 people do. The principal land use reflects the almost totally rural base of the regional economy. About 80 percent of the people depend on farming for their livelihood. The principal crops grown in the region are maize, sorghum, yam rice, millet groundnuts, and cotton. Important minor crops include cowpea bambara beans, cassava and various vegetable crops.

Farming systems range from pure shifting cultivation where land is cropped for four or five years and left to regenerate its fertility, to permanent cultivation where one-half or more of the land is cropped. Population growth results in a trend toward shorter fallow periods. This trend imposes requirements for alternative methods of maintaining soil fertility, restoration of organic matter, and erosion control measures. The removal and burning of crop residue under more permanent cultivation is particularly harmful.

Existing technology could have a significant impact on yield and production levels. These include good seedbed preparation, optimum depth of sowing, correct spacing and time of planting, intercropping, fertility maintenance, timely weed control, seed selection, draught power, and water management. The crops having the greatest immediate potential are maize, rice, cassava, and groundnuts. The bulk of agricultural activity in the Northern Region centers around crop production, and this provides the main source of cash income. Most farmers own livestock but cattle in particular are regarded and treated as a status symbol than as an integral part of the farm.

Most farms are small in size, ranging from 1 3 hectares and rely on family labour although there has been an emergence of large-scale commercial farms. Cropping inputs and supplies are the means of introducing newer technologies. These include seeds, fertilizers, pesticides, cultivation tools and mechanization (NORRIP REPORT, 1982).

Throughout the region, intercropping is the predominant cropping pattern. Sole cropping constitute less than one quarter of cropped area. In particular, rice and cotton are hardly inter-cropped. Cropping systems including cereals and legumes mixtures are most prominent. The constituting crop species change with increasing population density. Cropping systems also change according to land use types. Compound farms in the areas are covered by tobacco-based systems. Where there is pressure on the land, compound farms are cropped with cereal legume mixtures, which include early millet. Crop selection and existing cropping systems show a high variability which can be explained by the relative availability of land, its impact on the distribution of land use types, traditionally established market channels and food preferences.

4.1.3 Socio-Cultural and Religious Practices

Northern Region is not a homogenous region with reference to cultural and religious practices, traditional and political organization. Types of conjugal union (Christian, Muslim, customary and mutual consent) are highly related to the cultural and religious practices of the people. Both Islam and Christianity are widely practiced, with Islam having more followers (Beneng and Nabila, 1978).

4.1.4 Traditional Roles of Women: Generally in traditional economies women occupy themselves with household duties and the lighter tasks of some of the major occupations, such as agriculture. They trade in food and sale of certain important goods in the local markets. Under traditional society and customary practice, the occupations which are usually the preserve of women are collection and processing of sheanuts, pito brewing (local drink made from sorghum), preparation and sale of cooked food, preparation of dawadawa, spinning of cotton, etc. Preparation of food for all occasions except for some fetish sacrifices is by women as well as fetching of water for all domestic uses and for building purpose. As water may become very scarce during the dry season, a good part of their time is wasted on this duty and this retards progress in other profitable activities. The procurement of fuel in the form of firewood is normally an exclusively female affair but the felling of trees and provision of big logs for heating the rooms of old folk is undertaken by the men (Bening and Nabila, 1978).

4.1.5 Women and Agriculture

Women in the Northern Region of Ghana contribute in diverse ways toward agricultural development. They are directly involved in the production of food and cash crops, livestock, processing and marketing of agricultural produce. In the production of food crops, women are found as important helpers of their husbands on the family farms, or are apportioned part of their husbands cleared land from which they are expected to produce food crops such as staples, vegetables, and the pulses.

Some of the women, with the help of their children, are able to work and manage their own farms to produce food for both home consumption and sale. The income from the sale of their farm produce is invested in trading or rearing of animals. Part of the income is used to purchase their personal needs and contribute to household expenditures. Some women do not have farms but are involved in food production as seasonal farm workers for a wage (Koyiri, 1996). Women in the Northern region also have the traditional responsibility for processing, storing, and marketing of farm produce. In the field of food processing and preservation, women play maximum role. Without their involvement in processing farm produce, much of the food produced would go waste particularly during the peak season when food is in abundance. Women process food crops into various form thus, reducing post harvest losses and ensuring food security at the household level. Among food crops processed locally are the cereals, legumes, root crops, fish, meat and vegetables. They continue to use traditional techniques of processing for instance threshing and winnowing is by hand. Milling of grains is the only processing operation that has been mechanized to the advantage of women in the rural areas. In some remote areas, women still use the traditional grinding stone for milling. Vegetable drying is a form of food processing and preservation, which is being undertaken by women to forestall shortages during the dry season.

Edible oil processing is a task, which is being undertaken by women in all parts of the region. Women process edible oil from groundnuts, and butter from sheanuts for home consumption and sale. Seventy (70) percent of the total volume of edible oil consumed in the region is produced by women employing traditional methods. The locally produced edible oils by

women predominate as edible oil processing mills sometimes go out of production (Koyiri, 1996).

Rearing of small animals such as sheep, goats pigs and poultry in the savannah zone is mostly done by children and women. However this activity is poorly managed by women due to inadequate knowledge of husbandry practices and lack of access to veterinary services (Koyiri, 1996).

4.2 The District Context

4.2.1 Savelugu/Naton District

The Savelugu/Nanton District is one of the thirteen (13) administrative districts of the Northern Region. It is one of the six(6) newly created districts. The district shares boundaries with West Mamprusi District in the North, Gusheigu/Karaga to the East, Yendi District to the SouthEast, Tamale Municipality to the South, and Tolon/Kumbugu District to the West. It was carved out of the then Western Dagomba District Council which included Tolon/Kumbugu district. The population of the District is 82,918 (1984 Population Census). With an area of 1760.70 square kilometers representing a meager 2.52 percent of regional land area (70,000 square kilometers) the district is one of the smallest in the region. Nearly 80 percent of the district's population reside in rural areas where agriculture is the main occupation. It employs 53.4 percent of the economically active population. Agro-processing and commercial activities have assumed commendable role in recent times. Renewable resources in the district include the abundant guinea-savannah grass which could sustain large

scale livestock farming, fuel wood, cashew and sheanut trees. (Savelugu/Nanton District 5 year Development Plan 1996).

4.2.1.1 Agricultural Land Use

The staples cultivated in the district are rice, yam, cassava, maize and sorghum. However, maize and sorghum are the major staples of the indigenous people. Cash crops include sheanut, cotton and cashew. The White Volta and its tributaries serve as fishing grounds for communities living along its banks. A new type of fish farming (rice and fish farming) is being introduced and will be monitored closely for further development. Dugout fishing and cage culture are also being introduced for the people to practice and improve their nutritional requirements.

The district livestock resources include cattle, sheep, goats, pig (local and crossbred) and poultry (which include fowl, and guinea fowls), local turkey and ducks. At the center of the district is the Pong-Tamale Veterinary College, which is a conglomeration of vital units in the livestock industry. These include a livestock breeding station, Butchery a vertinary laboratory, and a Tsetse control unit. Small Holder Agricultural Development Programmes like small ruminant production, guinea fowl production, and other activities which when taken up, will lead to the tremendous increase in income are going on in the district. It is sad to note however, that, despite widespread publicity, participation by women and the unemployed youth is unsatisfactorily low. This could probably be attributed to difficulties in getting access to capital to take up the venture.

Processing of agricultural produce is generally done by the traditional methods and on a very small scale. Assistance from organizations like UNICEF, and Canada Fund for Local Initiative (CCLI) have assisted in assimilating modern technology into the district. Processing of agricultural produce in the district includes sheanut processing, groundnut processing, cotton ginning, brewing of local drinks and soap manufacturing. The agro-processing sector is a major employer of women. Several women groups are equipping themselves with help from the Ghana Government /World Bank sponsored Agricultural Sector Investment Project (ASIP) and the Intermediate Technology Transfer Unit (ITTU) who together offer financial assistance to committed groups to acquire the machines and build structures and to provide technical training in handling the equipment.

Low agricultural productivity is one of the root causes of poverty which constraints development in the district. The low productivity is enhanced by the fact that, there are high post harvest losses in the district, farm gate prices are low, and farming systems in the district tend to deprive the shallow soils of all their nutrients leading to lower and lower yields after every farming season. Lack of access to credit also hinders production where farmers are forced to be subsistent.

4.2.1.2 Economic Activities

Farming is the dominant economic activity in the district. Other economic activities going on in the district include trading, craft, soap making, tailoring, blacksmithing, butchering,

hunting etc.

4.2.2 TAMALE MUNICIPALITY

4.2.2.1 Geographical Features

Tamale municipality lies between latitudes 9. and 9.30 degrees North and longitudes 0.30 and 1.30 degrees west. This location places it in the Guinea Savannah vegetational zone, which has a rain fall pattern that usually starts around April and ends in October. The rainfall pattern is usually unpredictable. Accompanying the dry season is the harmattan air mass coming in from the Sahara Desert, which brings dry and dust-laden winds with low relative humidity. Soil types ranges from mixed alluvial colloidal soils along valleys to shallow eroded and stony soils in the high lands.

Vegetation is the savannah type. It comprises a wide range of tree species made up of short trees and shrubs widely spaced and covered fairly with grass. Trees and shrubs are dominant in non-cultivated areas where various species of grasses can be found according to soil fertility and extent of soil erosion. The flat nature of the terrain favours livestock rearing and the cultivation of cereals. Rice cultivation is a major source of wealth to many farmers. Every farmer keeps some livestock to support himself and his family. Fishing is done during the dry season in some of the streams and dugouts as an off-season occupation. However, it is not a popular or common practice of the farmers.

4.2.2.2 Farming systems

Three (3) distinct cultivation patterns are employed in the district

(a) Compound farming which involves the growing of crops (the commonest being maize and tobacco) around the compound houses.

(b) Extended compound fields.

(c) The true bush farms.

Most villagers use more than one of the cultivation patterns in a combination dictated by the land availability and soil fertility status. Land clearing or preparation is usually by the use of the hoe or tractor or bullocks depending on the financial holding of the farmer. Mounding is the most frequently applied operation for the cultivation of yams and cassava while grains and legumes are more often found planted on the flat or ridges. In some parts of the district, the pressure on land has led to the depletion of soil nutrients as a result of continuous cropping; and hired labour for farm operations are very expensive. Average farm size ranges from 1-5 acres.

4.2.2.3 Socio-Cultural Setting

The dominant tribe is the Dagombas. There are other tribes like the Gonja, Fulanis, Moshies who reside in the district especially the capital because of their occupations like teaching, nursing, trading etc .Islam is the dominant religion in the district. However, there are a few Christian and traditional worshippers. Some taboos are typically upheld in the traditional area of the district especially in the rural areas. These include:

(i) No wearing of sandals at the Chief's Palace.

(ii) No hand shake with women by men.

(iii) No exposure of new yams either for consumption or for sale by any farmer until the Chief has openly announced that people can eat or sell the new yam.

(iv) No burning of the "reserve Bush" (used as shrines) or cultivation of crops within it.

(v) Rearing of swine (pigs) or eating of pork or dog meat is prohibited.

(vi) No whistling in the night. This can attract evil spirits to the homes of the inhabitants.

(vii) Farmers do not keep long on the farm on Fridays, funeral days and festival days.

(viii) Walking across somebody's farm is a taboo.

(ix) Women do not rear animals on their own. It should be done per their husbands, brother or father.

4.2.2.4 Land Tenure, Agricultural and Economic Activities

Almost all farming land in the district belong to the family head, chiefs or "Tindana" (Traditional Priest). Lands for farming are not sold or hired, they are freehold. Acquisition of land for farming is by giving a few cola nuts to the chief, "Tindana" or family head responsible for such land. After harvest one can choose to give some of the produce to the source of the land in appreciation of the offer.

Agricultural activities involve mainly food crop production. The major food crop of this district include cereals such as rice, maize, sorghum, millet which are cultivated either as sole crop or mixed crops. Leguminous crops cultivated include cowpea, groundnuts, soyabean,

pigeon pea and bambara nuts, while roots and tubers cultivated include cassava and yams. Dry season cultivation of vegetables is becoming popular in the district even though they are cropped during the raining season too. Economic trees such as dawadawa and sheanuts are also found in the bush which generate income for most people especially women. Cash crops grown are cotton, cashew, groundnuts and soyabean. Livestock is being reared by almost all farmers .These include cattle, sheep, goats and poultry. Most of these animals are indigenous breeds, which are usually poor conservators of food. The introduction of exotic breeds, as is being done, will boost the livestock industry in the district, which has vast grassland and valleys to support livestock production.

Picking and processing of sheanuts is the predominant economic activity in the district. This is done mostly by women. Sheabutter and groundnut oil extraction is common economic activities that are undertaken by women in the district. Other economic activities going on in the district are trading, blacksmithing, wood carving, craft (zana mat weaving, hencoops weaving hoe and blades moulding).

CHAPTER FIVE

FINDINGS AND INTERPRETATIONS

5.1 SOCIO-ECONOMIC CHARACTERISTICS OF WOMEN AND PARTICIPATION IN EXTENSION ACTIVITIES

In order to gain familiarity with the respondents' background, certain socio-economic variables were collected. These included their marital status, religious affiliation, educational status, occupation, and status within the household.

5.1.1 Marital status of women

Marriage carries well defined obligations and responsibilities within the household. For instance, it is only married women (of cooking status) who are obliged to cook for the family unmarried women are not allowed to cook for the family or household. This implies that married women are likely to have demands on their time than unmarried women for that matter may find it difficult to participate in extension activities or follow recommendations made by extension agents which are time and labour-demanding. Unmarried women may have enough time to participate in extension activities. As can be seen in table 5.1 below, majority of the women interviewed were married (87.5%), while few of them were unmarried(12.5%).

Table 5.1: Marital status

MARITAL STATUS	FREQUENCY	PERCENTAGE
Married	84	87.5
Unmarried	12	12.5
TOTAL	96	100

This implies that, majority of. the women being married, are likely to be occupied with domestic chores (e.g cooking) at the time that an extension activity is going on. Extension agents responded that, married women become impatient when they are occupied in an extension activity for a long time and that unmarried women have the freedom to participate in extension activities at any time without any hindrance They can also travel outside their communities on field trips and training courses any difficulty. unmarried women find it difficult to do so unless there is someone(e.g a or a daughter grown-up daughter, a niece, or a daughter -in-law) to take care of their domestic chores and their children

5.1.2 Religious affiliation of women farmers

The study revealed that, no serious religious barrier prevented women from participating in extension activities however, certain religious festivals interfere once a while with their participation in extension activities. for instance as majority(as shown in table 5.2below):

Table 5. 2: Religious Affiliation of women farmers:

RELIGION	FREQUENCY	PERCENTAGE
Christian	14	14.6
Moslem	82	85.4
TOTAL	96	100

They said they could not participate in extension activities on Sunday morning but

could do so after church service. The Moslems said they would participate in extension activities provided it would not coincide with prayer. This implies that, extension agents want women farmers to participate in extension activities then they have to organize them outside prayer time(whether Moslem or Christian).

5.1.3 Educational Status of women farmers

A large proportion of the women interviewed received no formal education as shown in table 5.3 below. This is likely to affect their participation in extension activities in that, written extension materials cannot be read and understood by them.

Table 5.3: Educational Status

LEVEL OF EDUCATION	FREQUENCY	PERCENTAGE
Primary Education	1	1.0
Middle School	1	1.0
No formal Education	91	94.8
Non-formal education	3	3.2
TOTAL	96	100

Research has it that, better educated farmers adopt new technologies and have access to extension services than non-educated farmers (IFPRI 1995). Also. Saito and Weideman(1990),reported that .women's access to extension and their ability to comprehend and use technical information is compromised when they lack basic education This implies that majority of them cannot read or write as such may find it difficult to understand written communication methods such as letters, leaflets, bulletins or circulars.

Suitable communication methods for them are farm visits, home visits, demonstrations, visual aids, and other oral extension teaching methods. Research has it that, better educated farmers adopt new technologies and have access to extension services than non-educated farmers(IFPRI,1995).

5.1.4 Major income-earning activities of women famers

The major income earning activities of the women are shown on table 5.4 above. Apart from farming. women in the study area engage in off-farm income-generating activities. This activities are pursued in order to address their cash needs. About 31 percent of the women engaged in farming as a major income generating activity while 66 percent of them were engaged in off- farm income generating activities.

Table 5.4: Major income earning activities

ACTIVITIES	FREQUENCY	PERCENTAGE
Farming	30	31.3
Sheabutter Extraction	12	12.5
Groundnut oil extraction	10	10.4
Pit brewing	1	1.0
Trading	14	14.6
Rice Processing	3	3.1
Sheanut Picking	26	27.1
TOTAL	96	100

Even though most of them engaged in more than one occupation, only the major income-earning activities were recorded. Off-farm income generating sometimes interfere with women farmers participation in extension activities. At the time that an extension activity is going on . some of the women are engaged in their off-farm income- generating activities.

5.1.5 Status within the household

Interview with the women showed that. within a household in the study area, women were categorized into cooking wives, non-cooking wives, dependents and household head. Majority (89.6percent) of the women interviewed was cooking wives. . Non-cooking wives were fewer than cooking wives and dependent women. Dependent women and household head formed a very small proportion of women within the household(3.1 and 4.2 percent respectively). Table 5.5 below shows the status of women within the household.

Table 5.5: Status within Household:

STATUS	FREQUENCY	PERCENTAGE
Household Head	2	2.1
Cooking wife	86	89.6
Non-cooking wife	4	4.2
Dependant	3	3.1
No Response	1	1.0
TOTAL	96	100.0

Cooking wives have certain responsibilities and obligations which none-cooking wives and dependants do not have These include cooking, washing of dishes, provision of soup ingredients, fetching of water, grinding of grains, collection of firewood, and other domestic chores This means that they would have less time at their disposal to participate

in extension activities than non-cooking wives and dependants. Household heads on the other hand have certain financial obligations which women of other status do not have. For instance apart from the provision of soup ingredients, firewood, cost of milling grains and the provision of dishes for serving meals, they have an additional responsibility of providing grains(maize, sorghum or millet) and roots/ tubers(cassava).

5.1.6 Sex Distribution of Extension Agents

Within the extension organization, both male and female extension agents are expected to disseminate improved technologies of farming to farmers. However, majority of the extension agents in the study area were male as shown in table 5.6 below.

Table 5.6 Sex Distribution of Extension Agents

Sex	DISTRICT			
	Tamale		Savelugu	
	Frequency	Percentage	Frequency	Percentage
Male	7	87.5	7	87.5
Female	1	12.5	1	12.5
TOTAL	8	100	8	100

Out of a total number of 8 extension agents interviewed in Tamale district (7) 87.5 percent were males and (1) 12.5 percent female. The same number of extension agents were interviewed in Savelugu/Nanton District and of this number 7 were males constituting 87.5 percent of the total number and only one (1) female constituting 12.5 percent.

Considering the fact that majority of the extension agents are males, there is the likelihood that women farmers may be marginalized or neglected since male agents are likely to find it difficult to interact freely with individual women. The study revealed that, in the villages where the female extension agent worked , more women were contacted than in villages male extension agents worked.

5.2 ROLE OF WOMEN IN AGRICULTURAL PRODUCTION

5.2.1 Crops grown by women

Women in the study area grew crops often in combination. The commonest crop combination were maize groundnuts and soyabean..

Only few women cultivated a single crop. Majority of them intercropped their crops. The commonest crop combinations were maize, groundnuts and soyabean. More women in Savelugu/Nanton District indulged in crop production than in Tamale District. Maize, sorghum and millet were grown for home consumption while groundnuts; rice and soyabean were grown for sale. Below is a table of crops grown by women.

Table 5.7: Crops grown by women either in combination or as sole crops

CROPS GROWN	TAMALE DISTRICT		SAVELUGU /N DISTRICT	
	Frequency	Percentage	Frequency	Percentage
Maize	13	22.8	27	25.7
Groundnuts	27	47.4	33	31.4
Soyabean	10	17.5	25	23.8
Cowpea			5	4.8
Guineacorn	2	3.5	5	4.8
Rice	4	7.0	6	5.7
Cassava	1	1.8	3	2.9
Millet			1	
Total	57*	100	105*	100

*Multiple responses

This implies that women are growing crops that were the preserve of men. For instance crops such as maize, sorghum millet and cassava were known as men's crops while groundnuts, cowpea, and soyabeans were regarded as the preserve of women.

Williams, Opari-Obisaw, and Drost N. (1991) also found out in their study on needs assessment for enhanced women's activities in IFAD/SRDP Programme Area in the

Northern Region that, women cultivate food crops as well as cash crops. Koyiri (1996) also asserted that, women are directly involved in the production of food and cash crops. This necessitates the introduction of improved crop varieties ads well as improved farming techniques for women to increase their crop yields.

Vegetable production was carried out by a large number of women in the study area. Out of a total number of 96 women interviewed, 87 of them representing 90.6 percent said they grew vegetables (pepper, green leaves, okra, and tomatoes) while only 9 (9.4 percent) said they did not grow vegetables. Majority (70%) of them said they grew their vegetables on their husbands' farm. Women in the study area hold vegetable production in high esteem. This is not surprising in view of the fact that women in Dagbon (the predominant ethnic group in the area) are responsible for the provision of soup ingredients, of which vegetables form the main components. Because of the importance women in the area attach to vegetables, every woman especially a cooking wife makes sure that she grows vegetables. In order to ensure a continuous supply of it throughout the year, women process their vegetables (especially leafy vegetables, pepper, and okro) by drying after harvest. Koyiri (1996) stated that vegetable drying is a form of processing and preservation undertaken by women to forestall shortages during the dry season.

In this regard, vegetable production is an area, which needs special attention when it comes to the dissemination of improved methods of farming. Unfortunately, it is the area extension agents have marginalized. This is because researchers are skewed toward the generation of improved technologies on only cereals, legumes and root/tuber crops to the detriment of vegetables, which provide essential vitamins for protecting the body against

diseases. As a result, extension agents lack messages on vegetable production to disseminate to women farmers in the survey area.

This implies that women are growing crops that were the preserve of men. For instance crops such as maize, sorghum millet and cassava were known as men's crops while groundnuts, cowpea, and soyabeans were regarded as the preserve of women.

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5.2.2: Farming operations performed by women:

Women interviewed said they carried out various farm operations such as planting, harvesting, threshing, winnowing, carting of farm produce to the house, weeding, and dehusking of maize. Apart from these tasks that are performed on the farm, they also performed post-harvest activities such as processing, preservation, shelling of groundnuts, peeling of cassava, and storage. They are also engaged in marketing of agricultural

produce. This implies that, women do most of the work on the farm

. They therefore need to be introduced to improved technologies on the tasks they perform.

5.2.3 Animal Production:

Women in the study area to generate income for the purchase of farming inputs and to address their cash needs such as social contributions, school fees, medical bills and order financial obligations.

Animals raised by the women include goats, sheep, and fowls. However, a very small percentage of women rear rabbits and pigs. More women rear animals in Savelugu/Nanton district than Tamale district as is shown in table 5.7 below..

Table 5.8: Animal Rearing by Farm women:

REAR ANIMALS	TAMALE DISTRICT		SAVELUGU DISTRICT	
	Frequency	Percentage	Frequency	Percentage
Yes	24	50	25	52.1
No	24	50	23	47.9
TOTAL	48	100.0	48	100.0

These findings conform to the assertion made by Koyiri (1996) that, children and women mostly do rearing of small animals such as sheep, goats, pigs, and poultry in the savannah zone. However, this activity is poorly managed by women due to inadequate knowledge of

husbandry practices and lack of access to veterinary services. William, Opari-Obisaw and Drost, (1991) also found out that, about 40 percent of women keep livestock, mostly fowls and goats in the IFAD/SRDP area of the Northern Region . The women rear livestock purposely for sale in order to generate income to address their financial obligations within the household as well as capital for the purchase of farm inputs and hiring of tractor services and external labour. They therefore need improved animal husbandry practices to increase their productivity.

From the analysis presented it can be deduced that, women contribute significantly to agricultural production in the study area. They play the role of farm owners, farm assistants on their husbands or household farm, and farm labourers. In performing these roles, they grow crops of their choice and perform farm tasks associated with the crop production and also rear domestic animals. Women are thus, assuming new roles in crop production in recent times, which were regarded to be the preserve of men. In the past, women were regarded as farm assistants to their husbands. Today, they are farmers in their own right whereby, they grow crops of their choice, as such have become decision-makers. The generalization that, women grow food crops whereas men grow cash crops do not apply to the study area. Women grow food crops as well as cash crops. This is because women are responsible for the provision of certain necessities of life, payment of school fees, and medical expenses. They therefore, need cash to address their financial needs.

Saito and Weideman (1990) wrote that, agricultural roles do not always follow expected patterns, and that the generalization that, women produce food crops while men engage in

cash cropping does not always hold. As women seek income-generating opportunities to supplement their own production, they are taking jobs as hired labourers on larger farms, and are engaging in cash cropping. They added that traditional roles of men and women are changing due to the migration of men to urban areas for paid employment; the introduction of new cash crops or improved inputs and technologies; and a worsening economic situation bringing women into work which they previously did not do. In other places, improved economic situation brings new aspirations and opportunities and /or the need for additional income to buy goods.

These have serious implication for the delivery of extension services to women. As farm owners, they need information on improved varieties of crops they grow, and improved techniques of farming. As farm assistants, they need to be introduced to improved methods of performing their cultural practice like planting and fertilizer application.

5.3 WOMEN FARMERS' ACCESS TO EXTENSION SERVICES

5.3.1 Women farmers contact with extension agents

In order to ascertain the extent of contact with women farmers by extension agents, information was gathered on the percentage coverage of women farmers by extension. Table 5.8 below provides the level of extension contact by district.

Table 5.9 Coverage of women farmers by extension agents.

CONTACT	TAMALE DISTRICT		SAVELUGU/N. DISTRICT	
	Frequency	Percentage	Frequency	Percentage
Yes	7	14.6	24	50.0
No	41	85.4	24	50.0
TOTAL	48	100	48	100

More women in Savelugu/Nanton district were contacted by extension agents than those in Tamale district. This implies that more women in Savelugu/Nanton District were likely to have access to extension services than those in Tamale District this is because:

- The IFAD sponsored SRDP gives credit to women groups for income-generating ventures(e.g small ruminant production, trading processing)in the Savelugu /Nanton District.
- Extension agents in the Savelugu /Nanton District are given gender-sensitizing training.

5.3.2 Frequency of Contact

The T&V extension system emphasizes that, extension agents receive regular training from Subject matter specialists after which they are expected to pay fortnightly visits to farmers

to keep them abreast with current farming techniques.

More women in Savelugu/Nanton District were visited regularly as such were more likely to be abreast with current scientific methods of farming than those in Tamale District.. Below is a table of the frequency of visits made by extension agents to women farmers. This implies that there is the possibility of women farmers in Savelugu/Nanton District obtaining higher crop yields than their counterparts in Tamale District.

Table 5:10 Frequency of contact by district

FREQUENCY OF VISITS	TAMALE DISTRICT		SAVELUGU/N DISTRICT	
	Frequency	Percentage	Frequency	Percentage
Once a week	4	57.1	8	33.3
More than once a week	1	14.3	2	8. 3
Fort-nightly	2	28.6	12	50.0
Once a month			2	8.3
TOTAL	7	100	24	100

5.3.3 Method of Contact

A small percentage of women participated in training courses and field trips. This is by virtue of the fact that, women find it difficult leaving their homes for training courses organized outside their communities due to their domestic chores, reproductive responsibilities, and marital obligations. The few who were able to travel outside their communities to participate in training courses had relatives (grown-up daughters, daughter-in- laws and rivals) at home to take care of their children and domestic chores while they were away. The most frequent method of contact was farm visits followed by home visits then demonstrations and group meetings then demonstrations and group meetings as shown in Table 5.10

Table 5.10: Method of Contact

Mode of Contact	Frequency	Percentage
Home visit	23	74
Farm visit	27	87
Group meeting	9	29
Field Days	5	16
Training Course	2	6.5
Demonstrations	12	38.7
Field trips/Excursions	3	9.6

*N =81(multiple responses

On the part of the different methods of contact, women had their preferences. However, the most preferred method was farm visit (53.2%) followed by home visit (24.2%) then group meetings. Of the 24 women who said they were contacted by extension agents in

Savelugu/Nanton district, only one (4.2 percent) said she was given an award on behalf of her group at the National farmers day celebrations for excelling in Soyabean production. Twenty-three of them constituting 95.8 percent said they had never participated in the National farmers' day celebrations and had never received a prize.

In Tamale district none of the 7 women who said they were contacted by extension agents has ever attended the farmers' day celebration and has ever received an award.

Only one (14.3 percent) of them has ever called at the home of the extension agent. Five (20.8 percent) out of the 24 women in Savelugu/Nanton district paid visits to the agent's office or home. The farm women who called at the office or home of their extension agents had different purposes for doing so. Some said they called to present a problem which they believed the agent could help them to solve, some of them said they wanted soyabean seed. Others said they wanted to know the home or office of the agent so that anytime they had a problem or need an information, they could call on him/her to assist them. A few said they called to find out how the agent was faring.

5.3.4 Technology Transfer:

In Tamale district, 31.3 percent had access to improved technology while 68.7 percent said they did not have access to improved technology. In Savelugu/Nanton district, 62.5 percent of the respondents said they had access to improved technologies, while 37.5 percent of them said they did not have access to improved agricultural technologies. Table5.12 below shows the proportions of respondents who had access to improved technologies

Table 5.12: Access to improved Technology

ACCESS	TAMALE		SAVELUGU/NANTON DIST.	
	Frequency	Percentage	Frequency	Percentage
Yes	15	31.3	30	62.5
No	33	68.7	18	37.5
TOTAL	48	100.0	48	100.0

Majority of the women in Savelugu/Nanton district said they received improved technologies of agricultural production from extension agents. Thus 72.3% of the total number of women who said they had access to technology obtained it from Extension agents while 8 of them 24.2% said they receive technologies/information from other sources such as husbands, contact farmer or radio.

Table 5.13: Source of Technology

Source of Technology	TAMALE		SAVELUGU/NANTON DIST.	
	Frequency	Percentage	Frequency	Percentage
Extension Agents	7	53.8	24	72.3
Contact Farmer/ Radio	6	46.2	8	24.2
School Children			1	4.2
TOTAL	13	100.0	33	100

In Tamale district, out of the 13 women who said they had access to improved

technologies, only 7 of them acquired improved methods of agricultural production from extension and 6 from other sources such as contact farmers or radio.

It can be seen that, more women in Savelugu/Nanton District have access to improved techniques of farming than those in Tamale District. Also, more women in Savelugu/Nanton District have the extension agents as their main source of improved farming techniques. When asked what technologies they needed, most of the women mentioned technologies on:

Crop production

Animal production

Crop processing

Agro-forestry

Home management

Vegetable production

Labour - Saving technologies

Crop utilization

It can be inferred from the above analysis that, few women are contacted by extension agents in the study area, as a result, have access to extension services. This means that majority of them are left out when it comes to the delivery of extension services to farmers. The consequence of women farmers' lack of access to extension services is that, they use traditional methods of farming which results in poor yields. For instance, some of the women said they obtained 2-4 bags per acre of maize when they use traditional methods of

farming. This can have deleterious effects on the women and their children since it is the responsibilities of women in the study area to provide basic needs for their children as well as medical care and school fees. Most of them expressed interest in being contacted by extension agents.

Gizari and MiriKoozani (1995) reported similar findings. They observed that, women are engaged in a wide range of agricultural activities in many developing countries but have limited access to extension services and other external resources to increase their productivity and incomes. They emphasized that special attention should be paid to rural women's training. Also, Spring and Kayuni(1983 cited in Spring 1985) during their interviews and observations of extension personnel in the field found out that, farmers' contact with extension workers through home and farm visits, attendance at group meetings and demonstrations and participation in training courses were differential regarding sex. They discovered that, extension workers were the major source of advice but women's farming practices such as time of planting, spacing, fertilizer application and plant protection were often deficient and reflected lack of agricultural education and extension services.

Agricultural extension is an informal educational process directed toward the rural population. It offers advice and information to help them solve their problems. It also aims to increase the efficiency of the farm family. Extension therefore, is of crucial importance. Without it, farmers would lack access to the support and services required to improve their agricultural and other productive activities. Close and regular contact with

farmers by extension agents is obviously essential.

The data revealed that, more women were contacted by extension agents in Savelugu/Nanton District as a result, participated in demonstrations, field days, home and farm visits, group meetings and training courses, through which they learned improved farming techniques than women in Tamale District. This could be attributed to the policies of the International Fund for Agricultural Development (IFAD)/Small Holder Rehabilitation and Development Programme (SRDP) aimed at improving women's participation in agricultural development. This programme for that matter, had special support for women in the form of inputs and credit for crop production, small ruminant production, and off-farm income-generating ventures such as marketing and agro-processing.

This implies that, policies aimed at integrating women into agricultural development programmes can influence extension agents' contact women farmers.

5.4 BARRIERS TO PARTICIPATION IN EXTENSION ACTIVITIES BY WOMEN

5.4.1 Access to Productive Resources and Barriers to access

5.4.1.1 Access to land

Of the women who owned, farms 71.2 percent said they did not have difficulties obtaining land to farm, while 27.3 percent of them said they faced difficulties in acquiring land for farming. Those who had difficulty in obtaining land for farming gave various reasons. These included scarcity of land; women not being recognized by the society as farmers,

feeding of household members being considered the responsibility of men and others. The women acquired land for farming from various sources. These included husbands, male relatives, and chiefs. Husbands were the major source of land for farming by women. Thus, 79.4 percent of the women acquired land from husbands. Those who begged for land from male relatives constituted 11.0 percent while those who begged for land from chiefs for farming constituted 4.8 percent. None of the women owned the land on which they farm. In this case, the lands were used temporarily by the women. In areas where there is scarcity of land, women find it very difficult to obtain land for farming. According to some of the women, it is only when land is in abundance that they are given land to farm. This according to them is because it is considered the responsibility of men to farm and feed the family. Farming by women is looked upon as a luxury and not a necessity as a result, it is usually lands which have been cropped for several years and are depleted of nutrients that are given to women to farm which can be collected anytime the owner needs his land. Furthermore most of the lands are small plots.

This implies that women cannot adopt innovations associated with long term or permanent cultivation such as crop rotation or agroforestry. This reaffirms the claim made by the International Food Policy Research Institute (IFPRI, 1995) that the insecurity of tenure reduces the likelihood that, women will invest much time and resources in usufruct land or adopt environmentally sustainable farming practices such as tree planting, and that, such unequal land rights are reflected in the smaller farm sizes of women farmers.

The findings of this study also conforms to that of Williams, Opari-Obisaw and Drost

(1991), that, although most of the women in the IFAD/SRDP area are engaged in farming, none of them own land and that about 50 percent farm on their husband's lands which are often depleted of nutrients and mostly small in size.

Since majority of women in the survey area have access to land through their husbands, it implies that, when the marriage terminates either through divorce or death of the husband the woman will lose the land. This explains the reasons why unmarried women (Single, divorce or widow), find it difficult acquiring land for farming in the study area. This problem is not new for, Duncan (1996) in her study of women in agriculture in Ghana observed that, marriage provides a measure of security to most women engaged in agriculture and that this however whittles away upon dissolution of the marriage or upon the death of the husband.

5.4.1.2 Access to credit

Majority of the women who farm on their own in the two study districts used funds from their own savings for farming. In Tamale district for instance 77.8 percent and in Savelugu/Nanton district, 52.6 percent of women depend on their own savings for farming. In Savelugu/Nanton district, 9 women and in Tamale district 2 women said they sometimes fall on their husbands for capital to farm. Other sources of capital for farming were relatives, friends, and group/associations. Banks formed an insignificant source of capital for farming by farmwomen. Some of the women said they could not farm on their own because they did not have capital to do so.

This implies that, women who cannot obtain credit are unlikely to respond to recommendations, which requires the provision of inputs such as the use of fertilizer, improved seeds or agro-chemicals. This falls in line with the claim made by Saito and Weideman (1990), that farmers who cannot afford inputs, and who cannot pay for hired labour are less likely to be interested in extension activities likewise, extension agents are less likely to target this group because of their inability to respond to recommendations, to purchase inputs, and hired labour. This can in turn reduce their chances of having contact with extension agents.

Due to the difficulties in acquiring credit for farming, some women resort to joining groups within their communities. For instance out of the 48 women interviewed in Tamale district 33.3 percent belonged to an association while 66.7 percent did not belong to an association. On the other hand 52.1 percent of the 48 women interviewed in Savelugu/Nanton district belonged to an association while 47.9 percent did not.

5.4.1.2 Access to labour

The bulk of work done on the farm of women farmers was by they themselves (39.7 percent). Children formed 23.7 percent of the labour on the women's farm. Husbands were also the source of labour on women's farm. The percentage contribution of husbands to labour requirement of farm women however, was very small (11.5 percent). Exchange labour was 4.6 percent and hired labour, 16.8 percent. Labour from other sources was 3.8 percent.

Sometimes labour requirements of the women's farm coincide with that of the family or household farm. According to them, if that happens, they have to postpone their farm operations and work on the family farm. Since it is the produce of the family farm that is used to feed all members of the household, priority is often given to the family farm when it comes to choosing between working on the family farm, and that of individual household member's farms. The women said they would be beaten by their husbands if they dare go to their farms when there is work to be done on their husband's farm. This means that if an extension agent recommends for instance early weeding for a woman to carry out, she is likely not to be able to follow it. This is because by the time she finishes performing the tasks that she is obliged to on the family farm, the right time of weeding would have passed. Thus women's labour is most often being controlled by their husband.

Spring, (1985) also reported that, a married woman's attention to her crops takes secondary place to that of the family farm and that, women's agricultural labour makes multiple marriages a good economic investment for men. He stated that, in general, married women have their labour power controlled by men and have no ability to command work from others except their children.

The major source of inputs for farming by women is the women themselves. In Savelugu/Nanton 69.0 and in Tamale district 70.4 percent of women bought their own inputs to farm. According to them, they bought some of the inputs (fertilizer, chemical for spraying crops and storing of produce) from dealers and used seed from their previous season's harvest to plant. While 21.4 percent of women in Savelugu/Nanton district said

they obtained inputs from Extension Services Department. Only 11.1 percent of women from Tamale district said they were given inputs by the extension services. Other sources of inputs are brothers, sons, and other male relatives

5.4.2 Cultural and Religious Barriers

Majority,(85.4 percent) of the women interviewed said there were no cultural norms restricting interaction between women and non-family men or strangers while 14.6 percent responded that there were restrictions on interaction between female and non-family men or strangers. The reason given by the latter group of women is that their husbands would be suspicious of a relationship developing between them and the stranger. Also, majority of the women (97.9 percent) said there were no religious norms that restrict male/female interaction. Only 2.1 percent said there were religious norms that restrict interactions between male and females. They also mentioned that no religious practices prevented them from working outside their homes.

Even though there are no cultural and religious restrictions on interactions, the fact that husbands become suspicious when they see their wives interacting with a male extension agent can discourage them (male extension agents) from contacting and working with women on individual basis. On the other hand, married women may, as a result of their husbands' jealousy, feel reluctant to interact with a male extension agent. This means that, before a male extension agent contacts a woman farmer individually either through home or farm visit, he has to seek permission from her husband and also explain his intentions to him. In that case, if the woman's husband is not at home, the agent cannot discuss any

extension ideas with her and may have to re-schedule the visit.

This agrees with the assertion by Nettei and Kingma (1991) in their study on "women farmers and male extension agents in Tanzania" that, village extension workers were afraid of husband's becoming antagonized or suspicious when their wives were visited on regular basis. They reported that, this partly explains why village extension workers do not find it easy to approach married women. Similar findings were reported by Keller (cited in training for agriculture and rural development, 1986). He found out that, male extension agents in Zambia do not as a matter of custom, directly approach another man's wife. New agricultural techniques are therefore demonstrated to men when it is their wives who perform most of the agricultural tasks.

5.4.3 Decision-Making Authority

About 77 percent of the women said decision concerning farming were made by their husbands. Only 4.2 percent of those interviewed said they made decisions within the family with regards to farming. Those who owned farms said they take decisions on matters concerning their own farms. This includes what crop to cultivate, when to sell their produce, what proportion of the produce they should sell, and what proportion is to be consumed by the family. Five of them (5.21 percent) said they and their husbands made decisions together on matters concerning farming within the family. Five (5.21 percent) of the women said decisions on farming are made by household heads as can be seen in table 5.14 below. However, most of the husbands of the women were heads of their households. Other people within a household or family can make decisions on farming. These are

brothers or sons of the women. This occurred when a divorced or widowed woman is living in her brother's or son's house. In that case the son or brother is the household head who takes decision on matters concerning the household farm. Such a woman can only take decisions concerning her own farm.

Table 5.14: Decision-making authority within the family/household:

Decision-maker	Frequency	Percentage
Husband	74	77.1
Wife	4	4.2
Collective decision by husband & wife	5	5.21
Household Head	5	5.21
Other (son; brother)	8	8.3
TOTAL	96	100

With regards to farming, the ability to implement a recommended crop variety or practices depends on the decision–making authority of a farmer. Women have limited decision-making authority when it comes to taking decisions on the household farm. This therefore, makes it difficult for extension agents to involve them in extension activities especially demonstrations.

A woman can decide to attend a meeting or field day or farmers' forum organized within the community but when a training course or an excursion is organized outside her village she has to ask for permission from her husband. If he refuses to grant her permission she cannot go.

Since it is husbands or households heads who take decisions concerning farming within the household, it implies that, any message that an extension agent has to transmit to farmers has to go to the decision-makers that is, husbands or household heads. This is because women who do not have any decision-making authority regarding the household farm cannot implement technologies introduced to them. It is only women farm owners who can implement technologies introduced to them by the extension agents. In this case, extension agents are more likely to concentrate their efforts on household heads or husbands.

This implies that, a woman's ability to participate in an extension activity or implement an extension recommendation depends on her decision-making powers.

5.4.4 Gender Preferences

Majority of the women (68.8 percent) said they had no preference regarding the sex of the agent. They said either of them could contact them provided he/she had the required knowledge to transfer to them. Twenty-nine (30.2 percent) of them said they preferred the female agent to male agent contacting them. Reasons given for their choice were that;

i) They can speak or interact freely with their fellow woman

ii) The female agent knows the time that will be convenient to visit them

iii) The female agent encourages them to farm more than the male agent.

iv) The male agent goes to men so they want the female agent also to contact them.

Only one woman said she preferred the male agent to a female agent contacting her. The reason she gave was that male extension agents know more about farming than female extension agents. It was observed that, the only female extension agent in the

Savelugu\Nanton District focused her activities more on female farmers than male farmers. Even though majority of the extension agents did not have preference for a particular sex of agent,

The above analysis shows that the sex of the extension agent is not a problem when it comes to the delivery of extension messages since majority of the women do not show preference for a particular sex of agent. However, those who prefer female extension agents are likely not to participate in extension activities organized by male agents.

5.4.5 Norms on Patronizing Functions

The women interviewed said there were no cultural norms prohibiting men and women from attending a function together. However during social functions such as outdooring, weddings, and funerals women are expected to seat separately from men.

When asked if tradition allows a woman to attend the same meeting with her husband, they answered in the affirmative. However, some of them said the presence of their husbands at the same meeting with them would inhibit their desire to speak. When asked if they could talk in the presence of men at a meeting or training course, some said they could, others said they could not, the reason being that they are either shy or that women do not have to talk when men are talking.

Of the women interviewed 50 percent said they preferred meetings organized solely for women. Those who said they preferred meetings organized for both men and women constituted 47.9 percent. Various reasons were given for the preferences made. Those who preferred meetings organized for only women said they feel shy speaking or contributing to discussions when in the presence of men, but could speak or contribute freely to discussion

when they are with their fellow women at a meeting or training course. They also said they could excuse their fellow women at a meeting and attend to their domestic chores but when men are present, they can not do so. According to them, men have their own interests which are different from those of women as such they would want meetings to be organized separately for them. Those who said they preferred meetings organized for men and women gave the following reasons:

i) That the men will help them in case of difficulties

ii) The men will give them support.

iii) There would be exchange of ideas between the men and the women.

iv) They can ask the men to remind them if they forget something that was said at a meeting.

v) Men are very fast at understanding what is being taught than women as such the men can in turn teach them after the meeting.

vi) The men can ask questions and the answer given can benefit they the women.

vii) The men can caution them if they are saying something that is not proper.

Custom has it that, a woman should not talk when men are talking, or argue with a man especially in public. The husband of a woman may stop her from talking when he observes that his wife is talking while other women are keeping quiet and she has to obey the instructions. It is mostly the Magazia (Women's leader) who talks on behalf of other women in the village. This is a woman who most often, is elderly as such respected by men in the village.

This implies that, if an extension agent wants women to contribute to discussions, he should organize separate functions (meetings, demonstrations, field days or field trips) for women. This conforms to a remark made by Saito and Weideman (1990) that, rural women may be shy and reluctant to speak up in extension meetings in the presence of male agents or men from the same village, and that, women lack confidence because of their lower educational levels and less contact with the outside world. Men are seen as authority figures whose decisions are to be followed. Arranging for women farmers to meet in separate groups can relieve these problems they said, and where possible to have female agents work with them. Also a report by UNESCO (1981), indicate that critical social problems and obstacles to women's participation in development include inferiority complex. When participating in a man's world in the modern spheres of education, employment, and social situations, women display signs of insecurity, lack of confidence, and limited aspirations, in other words, they feel inferior yet, participating in their own world, agricultural and house production reveals women to be organized, resourceful enterprising and capable. The data also provide evidence to support Walker's (1990) claim that, women in many tribes have been socialized to be differential to men particularly to those in positions of traditional or civic authority, by not speaking, not asking, questions, and certainly not challenging or demanding solutions to their problems. This behaviour does not lead to the type of trust or give-and-take that is the foundation of a successful extension program.

5.4.6 Time Constraints and freedom of movement

5.4.6.1 Time constraints

The women mentioned a number of domestic chores and responsibilities within

The household. These included:

i) Cooking

ii) Fetching of water

iii) Fetching of firewood

iv) Home sanitation

v) Home management

vi) Washing of clothes

vii) Washing of dishes

viii) Processing of farm produce

ix) Milling of grains

x) Sending food to the farm

XI) Child rearing

ix) Caring for the sick

When asked which of them occupied them most, they said cooking, fetching of firewood, fetching of water and post-harvest activities such as agro- processing. This means that women are likely to be busy and would not be able to participate in extension activities. Weideman and Saito (1990) also found out that, the time and energy involved in providing the family with food, fuel wood and water leave little time to participate in regular extension programs.

The women also said certain social activities occupy them certain times. These they mentioned as outdoorings, funerals, weddings, festival celebrations, market days, and

visiting relations and the sick. These activities are likely to interfere with the participation of women farmers in extension activities

5.4.6.2 Freedom of movement

As to whether it is possible to travel outside the village on field trips and training courses, respondents said they could go on the grounds that, their husbands would grant them permission. In the event of their husbands' refusal to grant them permission, they could not go. Other reasons given were that, there would be no woman in the house to take care of their children or cook for the family, their domestic chores would be left unattended to, and that there would be no transport or money to pay for transportation to training centers.

This implies those, women especially those married are unlikely to participate in courses organized outside their communities. Extension agents on the other hand would feel reluctant to choose women to participate in training courses organized at training centers located outside the communities of women farmers. This observation is in line with an FAO (ibid) report that, factors such as social and cultural restrictions prevent women from traveling freely within or outside the community, less money to pay for transportation, no transport available for their use (bicycles or motorbikes). For others, anxiety about their family members prevents them from taking time off.

5.4.6.3 Convenient time to be contacted by extension agents

When asked what time is convenient for them to be visited by extension agents 31.3 percent of them said mornings, 29.2 percent said, afternoon and 23.9 percent said after lunch

during the off-farm season. Few (6.3 percent) of them, said evening was convenient time for them to be visited by the extension agent. The Christians said they would want to be visited on Sundays. They formed an insignificant proportion (2.1 percent). Others said they would need prior notice from the extension agent before being visited during the farming season. The women gave different reasons for their choice of visit such as they would be less busy, or would have finished fetching water or finished cooking lunch or would be back from the bush. Others said they would have finished bathing their children or finished cooking breakfast or finished their morning duties, or returned from the farm. Those who said Sundays were convenient for them to be visited by the agent said Sundays are resting days as such they would be free after church service to take part in extension activities. Those who said the agent should give them prior notice before visiting them gave the reason that, without prior notice, the agent might not meet them at home or would visit at a time when they would be engaged in either domestic chores or income generating activities.

This analysis shows that, there is no standard time at which women can be contacted by extension agents. The best strategy to adopt is to give them prior notice so that they can plan their chores in such a manner as to create time to meet the extension agent.

5.4.7 Access to, and Convenient time to listen to Radio Programmes

About 65 percent of the women have access to radio as such can listen to extension programmes on the radio. Majority (72.9 percent) of the women said after supper would be the most convenient time for them to listen to radio programs because by then they would have finished performing all their domestic chores and relaxing. Few of the said

after lunch (6.3 percent), afternoon (7.3 percent) evening (5.2 percent) and Sundays and only 3.1 percent of them said early morning would be convenient for them to listen to radio programs. This implies that, radio programmes should come at a time that people in that area take their supper if a large number of women are to be covered.

5.5.3 Improved Techniques Transmitted on Crops Grown by Women

The extension agents said the technologies which they transmitted to women are:

i.) Planting in rows, ii). Use of improved seed iii). Correct spacing, iv) use of raised plant forms for drying farm produce, v). Use of organic matter, vi). Crop rotation, vii. Seed selection and testing, viii). Proper storage techniques, ix). Right time of harvest, x). Timely weeding, XI). Methods of fertilizer application, ix) planting at the right time, ix) agroforestry technologies, iv) preservation of vegetables and xv) construction of improved mud stoves.

According to them technologies that women show interest in are: i) preservation, ii) food utilization, iii) raised platforms, for drying produce, iv) storage techniques, v) processing, techniques, vi) planting techniques and vi) soyabean utilization.

Even though extension agents transmit numerous technologies to women whom they contacted, not all of them addressed the needs of the women. Women as a result may not participate in extension activities which do not seem to address their needs.

5.6 CRITERIA FOR THE SELECTION OF CONTACT FARMERS

According to the extension agents, in both districts, before a farmer is selected as a contact farmer, he or she must meet the following requirements:

i) He/she must be respected in the community.

ii) He/she must be ready to accept or practice innovations introduce by the extension agent.

iii) He/she must be prepared to share information or knowledge he/she has learned with other farmers.

v) The farmer must own a piece of land on which a demonstration can be conducted.

vi) The farmer must be ready to travel when the need arises.

vii) He/she must be cooperative.

viii) He/she must be prepared to carry out a demonstration.

ix) He/she must be an opinion leader.

x) The farmer must be serious, hardworking, and committed to extension activities/programs.

XI) The farmer must have interest in extension activities/programs.

ix) The farmer must be prepared to take risk

The criteria women farmers met were that: they show interest in extension activities; put what they have learnt into practice (adopt innovations), are very cooperative, and always share information with their fellow women. These means that the other criteria such as

ability to command respect in the community; land ownership; ability to travel outside the community; ability to provide inputs to carry out demonstrations; readiness to take risk, and commitment to extension activities were not met by women farmers. Thus, women are not likely to be used as contact farmers therefore, it is expected that, fewer women farmers are likely to have contact with extension agents,

Women, according to the survey results, are accorded a lower social status than men as such not respected in the society. A married woman is regarded as her husband's property for that matter being controlled by her husband. This means that a woman cannot become a leader in a society where men are considered authority figures. She can only be a leader of a women's group such as the "magazia". This implies that, when opinion leadership or respectability within the community is used as a selection criterion, women are most likely to be disqualified. Women are also most likely to be disqualified when land ownership is used as a selection criterion. This is because, women in the study area do not own land, but only have user rights to lands belonging to their husbands, or plead for land from male relatives or chiefs. This means that, demonstrations that may last several years (crop rotation or agroforestry) cannot be carried out by female contact farmers. Women cannot also meet the selection criterion that emphasizes that the farmer must be ready to travel when the need arises. This is because; women have little time at their disposal due to domestic chores and childcare responsibilities. Also husbands sometimes refuse to grant their wives permission to travel outside their communities for training courses or field trips/excursions especially when they are nursing babies and more especially when husbands are suspicious that they may loose their wives to the extension agent (male) or

their wives might flirt with another man. However, unmarried women (single, divorced or widowed) stand a better chance of being selected on the basis of their ability to travel outside their communities, since they do not have much domestic and reproductive responsibilities, or husbands to restrict their movement.

On the basis of ability to carry out a demonstration as an extension criterion for selecting contact farmers, women are most likely to be ignored in view of the fact that, women find it difficult to obtain credit to buy inputs (improved seed, agro-chemicals, fertilizers), and hire tractor services and external labour, when the demonstration is input and labour demanding.

commonly used criteria may include requirements of land ownership, literacy, and ability to purchase inputs, and that women are more likely to be selected as contact farmers if criteria for selection emphasise farming ability, and if extension agents make the selection. Also a World Bank (1984) study indicated that, contact farmers should be selected for certain characteristics. They should represent the local range of farm size, cropping patterns, and socio-economic conditions; and be regarded by other farmers as worthy of imitation: they should be active participating farmers; be willing to adopt extension recommendations on at least part of their land; allow other farmers to observe their new practices and be willing to explain the practices to them; and be from geographically dispersed farms.

The contact farmer is a central concept within the extension approach. A contact farmer is a link between the extension agent and other farmers. In any extension organisation, there are only a handful of senior officers to supervise the work and invariably, there are far too few

workers in the villages. No Government can afford to employ the number of extension agents needed to teach the whole rural population. The approach to extension work must be through local leaders who will not only act as pioneers with new methods and help to influence their neighbours, but will also act as liaison officers between the people and the extension workers. Local leaders are necessary in extension work to organise local groups; teach their neighbours and friends thereby, spreading the influence of the extension worker; and to be the source of information and technical knowledge to people so that when the extension agent is away extension work can continue (Saville, 1978).

Extension agents can give special attention and efforts to including women when they are electing contact farmers. Female contact farmers are a good channel through which to contact other rural women. To ensure women are included as contact farmers, extension agents need to modify the criteria for becoming a contact farmer.

5.7 PERCEPTION OF EXTENSION AGENTS ABOUT WOMEN'S ROLE IN AGRICULTURAL PRODUCTION

The extension agents had different perceptions about women regarding agricultural production. They are viewed as producers, processors and marketers, and the backbone or ladder of agricultural production since they constitute the bulk of the labour force They also perceived a woman as a supportive partner of the man and that women play a vital role in agricultural production since they process and preserve farm produce which determine its quality.

When asked whether women are farmers or farm assistants/workers, 50 percent of the agents in

Tamale District said women are farmers, 25 percent said women are farmers as well as farm assistants, and 25 percent said they are farm assistants. In Savelugu/Nanton district, 50 percent of the agents selected said women are farm assistants, as well as farm owners, 37.5 percent said women are farmers, and 12.5 percent said women are farm assistants. In this case, majority of the extension agents in both districts view women in the study area as farmers as well as farm assistants. Reasons given for those who said women are farmers in their own right were that women of today show keen interest in agricultural production than women of the past who only provided assistance in the form of labour on their husbands or family farm, and that they also participate in decision-making process with regards to agricultural production, since they own and operate farms. For those who regard women as farmers as well as farm assistants the reasons they gave were that they own farms at the same time assist their husbands to plant, harvest, and process the farm produce. The reasons given by those who regard women as farm assistants/ workers were that they only give a helping hand to their husbands on the farm and have no authority over the produce.

The extension agents defined a woman farmer as follows:

A woman who engages in farming for social and economic gains.

A woman who cultivates crops or raises livestock or processes farm produce.

- A woman who actively participates in farming activities whether she has a farm of her own or is helping her husband brother, or son.
- A woman who actively participates in crop production from the beginning to the end.

They further stated that if women did not participate in agricultural production, the production process would be incomplete and that agricultural production would be low since there would be less labour on the farm.

As to whether women need extension services, all the 16 extension agents selected responded in the affirmative. The reasons they gave were that:

I) Some women are now farmers in there own right who grow crops of their choice, and perform all the farm operations.

ii) They perform most of the farm operations as such need-improved methods of farming.

iii) They need to be introduced to innovations to help them increase their productivity.

iv) They lag behind men in improved farming methods; as such there is the need for them to catch up.

v) To enable them carry out successful farming with wise use of resources.

vi) They form part of the farming population.

On the part of decision-making concerning agricultural production, the agents responded that, women take decisions on matters affecting their own farm but when it comes to decisions on agricultural production at the household level, women do not have any authority. It is either the husband or household head who takes decisions in this case. This confirms the responses made by the women farmers that, women do not take decisions on matters concerning the household farm

This has implications on the way extension agents will treat women when it comes to delivery of extension services or involving them in extension activities. Those who regard women as farm assistants to their husbands, or farm workers on the household farm would be influenced to ignore them when carrying out their extension duties. This is because they would feel that

women do not own farms as such any extension message they have, should go to the owner of the farm. What they (extension agents) loose sight of is the fact that these women whom they perceive as farm assistants though do not have decision-making power, carry out numerous farm tasks such as planting, harvesting, processing, preservation and storage as such need advice on how to perform better. Teaching the farm owner improved methods of farming without teaching the farm assistants how to perform the farm tasks efficiently may not lead to the achievement of the goal of the extension services. Even if the information given to the farm owner is passed on to the farm assistant, (which is not always the case) distortions may occur.

On the other hand those who perceived women as farm owners ought to involve them in extension activities but this is not the case. Even though majority of extension agents perceived women as farm owners as well as farm assistants, they still do not realise the need involving them in their activities. What they need is gender sensitive training.

This observation is supported by an FAO (1987) study which found that, in five African countries, male extension agents tended to perceive rural women as farmer's wives and not farmers in their own right. Kathleen and Merrill (1990) in their study on Rural Women's access to agricultural information found out that, a number of male extension agents stated that, agriculture is not part of women's work and therefore, is not important to deliver agricultural information to women. Also, Gura (1985) discovered that extension does not reach female farmers because of traditional practices such as: working with the head of the household only, assumed to be a man; concentrating on commercial crops rather than food crops which are usually grown by women; failure to note the division of labour by sex within family units;

assuming that information given to one family member is shared with other family members; assuming that women's time is flexible and that women men are available for extension activities at the same places and time with men and that women's interests are concentrated in home economics. Nettie and Kingma (1991) obtained similar results. They observed that, the assumption village extension workers have about women's involvement in agricultural production influence their attitude towards working with female farmers. According to them, as long as village extension workers stick to and act according to these assumptions, their attitude works as a barrier to reaching women.

5.8 OBSTACLES TO THE INVOLVEMENT OF WOMEN IN EXTENSION ACTIVITIES

The survey revealed that, 62.5 percent of the extension agents in Savelugu/Nanton district said they faced obstacles or difficulties working with women while 37.5 percent said they did not face obstacles working with women. In Tamale District 87.5 percent of the agents expressed difficulties working with women while 12.5 percent said they did not face any obstacles working with women. That is, more extension agents in Tamale district encounter obstacles when contacting women farmers than those in Savelugu/Nanton district. As can be seen in table 5.6 below.

5.16: Obstacles encountered by extension agents when Contacting women.

ENCOUNTER OBSTACLES	TAMALE		SAVELUGU	
	Frequency	Percentage	Frequency	Percentage
Yes	7	87.5	5	62.5
No	1	12.5	3	37.5
TOTAL	8	100	8	100

However the female agents in both districts said they faced no obstacles working with women The obstacles the agents said they faced while involving women in their activities or programs were:

i) Lateness to meetings, and other extension activities.

ii) Failure to attend meetings

iii) Women find it difficult getting land for demonstrations.

iv) They farm on exhausted lands.

v) It is difficult meeting them at certain times of the day or seasons due to domestic Chores and other responsibilities.

vi) There are religious and cultural restrictions on interacting with them.

vii) One has to ask for permission from their husbands before interacting with them.

viii) They are always relegated to the background culturally.

ix) They always plough their fields late due to lack of access to tractor services and Bullocks as a result, they plant their crops late.

x) One cannot meet them solely without their husbands or other men in the Village coming around to interfere with the discussions.

xi) It is not easy identifying their problems because they find it difficult speaking out what is in their minds.

xii) They are slow in learning.

xiii) They feel shy to talk in public.

xiv) They always have fears that their husbands will feel jealous when interacting with the Agent.

xv) They have no decision-making authority.

xv) Their husbands become suspicious and jealous when they see the agent interacting with them.

xvii) Social and Cultural activities such as funerals, weddings, out-dooring, festivals and Celebrations interfere with their participation in extension activities.

xviii) They feel reluctant to talk when their husbands are around.

ixx) Most of them prefer that you talk to the husband who would in turn talk to them.

xx) Their husbands sometimes engage them at the time that a meeting or an extension activity is going on.

xxi) They face labour problems on their farms

5.8.1 Interaction between women and male non-family members

The survey revealed that, 37.5 percent of the extension agents in Tamale district responded that there is free interaction between women and male non-family members or strangers provided the husband has developed some trust in the stranger. Majority of them 62.5 percent said no interactions are permitted. In Savelugu/Nanton district 25 percent of the agents said there are free interactions between women and male non-family members whereas 75 percent responded that there are restrictions on interactions between women and male non-family members. The reasons given for restrictions on interactions are that, the women might reveal some vital secrets to the stranger or male non-family member, or that a love affair might develop between the male stranger and male non-family member. This means that male extension agents being considered as strangers in the communities may find it difficult to interact freely with individual female farmers during farm or home visits. This can serve as an obstacle to the involvement of

women in extension activities.

5.8.2 Preference working with individual and groups of women.

In Tamale district, six out of the eight extension agents, representing 75 percent said they preferred working with women groups to working with individual women. Only two of them, representing 25 percent said they preferred working with individual women. In Savelugu/Nanton district all the eight extension agents representing 100% said they preferred working with women groups to individual women as is shown in table 5.17 below.

Table 5.17 Preference working with individual and women groups

Preference	Tamale		Savelugu	
	Frequency	Percentage	Frequency	Percentage
Individual Women	2	25.0	0	0
Women Groups	6	75.0	8	100
TOTAL	8	100	8	100

Those who said they preferred working with individual women said it is easier to meet and control individual women than a group of women. Of those who said they preferred working

with women groups to individual women, reasons given were as follows:

i) Transfer of technology is easier and faster.

ii) A large number of women are covered.

iii) Due to religious and cultural factors, it is more advisable working with women groups.

iv) To avoid suspicion by husbands and others.

v) Women in a group are able to gather resources for their farming activities.

vi) Most of the women are farming on group basis as such it is better meeting them in groups.

viii) The absence of one or two women from a group does not prevent a planned activity. from going on, unlike for that of an individual which has to be postponed

ix) Women feel free to express themselves or contribute to discussions when they are in a group.

x) It is easier for women to obtain loans from the bank and other financial institutions when in a group, hence they are in a better position to follow recommendations made by the agent.

xi) To avoid asking for permission from husbands of individual women before interacting with them.

ix) Women in a group are encouraged by their fellow women to attend meetings.

ix) Because of the perceptions held by members of the society that male extension agents sometimes develop a love affair with married women (especially the young and a little bit civilised ones), it is safer working with women groups.

Numerous researchers have come out with their findings on the benefits of working with groups

of women farmers than individuals. An FAO draft report indicates that, one of the successful ways of contacting rural women is through groups. It stated that, meeting with groups of women is culturally and socially acceptable in most places. It does not only overcome the taboos of one to one contact between males and females, but reaches more women and has other advantages that makes it a very effective way of doing extension. Meeting farmers in groups saves time and travel is cost effective, and can reach many more people by meeting them altogether than by contacting them one by one. It further stated that, groups are also effective in helping rural people learn new skills and adopt new practices, and are also more likely to make decisions to adopt new techniques than individuals are. Quite apart from that, group discussions reinforce learning.

Saito and Weideman (1990) also found out that, because of their long tradition in African communities, farmer groups are particularly attractive vehicles for reaching women. They further stated that, historically African women have formed groups to exchange labour, mobilise savings and credit, and for self-help, social, and ceremonial purposes and that such groups provide an immediately usable channel through which resources and information from government or donors can flow. Gura (1985) in her study on approaches to reach rural women found out that, approaching groups of women rather than individual women might help to circumvent these cultural restrictions that often impede contact between a female farmer and a male extension agent.

Walker (1990) in his study on "innovative agricultural extension for women in Cameroon" found out that groups provide a socially acceptable way for male extension agents to work with women farmers, an interaction that would not be possible between an individual male extension agent and an individual female contact farmer. Moreover, groups provide a supportive

environment that helps to make the relationship between farmers and extension agents more balanced and equitable. Also, gender based groups do provide women an opportunity to develop much needed leadership, management, and economic decision-making skills and that some groups even register land, something individual women are generally unable to do. In effect, groups provide women with an opportunity to interact and to develop skills in a supportive and egalitarian environment consistent with social roles

5.8.3 Preference working with married and unmarried women

The survey revealed that, 87.5 percent of the extension agents in Tamale district stated that they preferred working with married women to unmarried women. Only 12.5% said they preferred working with unmarried women. Half (50 percent) of the agents in the Savelugu/Nanton district mentioned that they preferred married women and 50 percent said they preferred unmarried women Table 5.18 is a picture of the responses made by extension agents..

Table 5.18: Preference working with married and unmarried women

Preference	Tamale		Savelugu/N	
	Frequency	Percentage	Frequency	Percentage
Married	7	87.5	4	50.0
Unmarried	1	12.5	4	50.0
TOTAL	8	100	8	100.0

The reasons given for those who said they preferred married women were that:

i) Married women can easily convince their husbands to adopt what they have learned.

ii) Married women are responsible in the family as such they are serious with what the agent asks them to do. Unmarried women do not have responsibilities within the family set-ups.

iii) Married women find it easier getting land to farm than unmarried women do.

iv) Married women often get assistance from their husbands in the form of land, capital, and labour when the need arises.

v) Married women are permanent residents, while unmarried women could marry at anytime and probably leave for another village which could disrupt any program that was started with them.

vi) Unmarried women do not take farming seriously and do not often take part in extension activities.

vii) Married women form the majority of the women population in the rural areas and have more responsible roles in family set-ups.

For those who said they preferred working with unmarried women, the reasons they gave were that:

i) They have the freedom to be met at anytime and can be interacted with, freely without any hindrance or suspicion.

ii) Married women become inpatient when the agent occupies them for a long time. In order to avoid this one has to shorten one's visit but unmarried women can tolerate long period

of engagement in extension activities. Since majority of extension agents preferred contacting married to unmarried women , there is the tendency for them to involve married in their activities than unmarried women.

5.8.4 Mixed and Single Sex Meeting

As to whether separate meetings are organised for men and women or together, most of the agents said they organise separate meetings for women and men. The reasons given were that, Women feel shy to talk in the presence of men especially their husbands. Also women form a different target group, for that matter, have different interests from those of men, and that while men groups are based on crop production, women groups are based on income generating activities. Also, women find it difficult sitting at a meeting with their husbands and that many men do not accept the views of women. Others said women are not allowed by tradition to speak out in the presence of men and that women express their views more freely in the absence of men.

Those who said they organise meeting for men and women together said when a technology involves an element of construction or the physique. it is better to meet men and women together. Other reasons given were that, the men can remind the women when they forget something that was said at meeting and vice versa and to enable the women contribution toward decision-making with regards to agricultural production.

5.8.5 Problems encountered when carrying out WIAD Programmes

The extension agents complained that in carrying out WIAD Programmes to women, they face difficulties which sometimes retard the progress of their work. These include:

i) Husbands sometimes do not grant permission to their wives to participate if they do not

appreciate the value of the programmes.

ii) It sometimes appear strange to women when they find men teach them how to cook balanced diets or build improved mud stoves for, they regard these activities as women's roles, and as such they do not take the training seriously.

iii) Some of the male extension agents said they are not used to the practical aspects of nutrition education and crop utilisation (e.g. demonstrating how to incorporate soyabean into the diets of the rural folk).

iv) No direct contact with the WIAD Co-ordinator.

5.8.6: Timing/Scheduling of Extension Activities

The agents have no standard time at which they conduct their activities. Majority said they conduct their activities in the morning, and occasionally midday, afternoon, or evening. When asked if the women turn out in their numbers to attend, varying responses were given.

Those who said no complained that most of the women are always engaged in domestic chores which affect their attendance and punctuality and that off-farm income-generating activities such as sheanut picking and sheabutter and groundnut oil extraction most often prevent them from attending. According to the agents, when this happens, they have to reschedule the activity if the turn out is very low. This they said affect their work in the sense that, it becomes difficult to meet set targets and that this affects other activities planned for the day or week. They complained that, a missed activity could only come on a fortnight later. This attitude of women toward meeting, demonstrations and home visits can discourage extension agents from contacting women farmers.

The fact that extension agents face obstacles working with women farmers may discourage them from contacting women. Kathleen and Merrill (1990) made similar observations. They reported that, both women and extension organisation mentioned obstacles to organising and working with women notably: lack of punctually to meetings; lack of attendance, lack of motivation; difficulty with husbands' machismo; cost of training; too many domestic responsibilities; lack of transportation and lack of communication about meetings. The findings also fall in line with an FAO draft report) which states that in some countries, it is impossible for a male extension agent to contact women farmers because women are not permitted any contact at all with males who are strangers. In other countries, there are strong cultural taboos regarding interaction between males and females, which may make it difficult for male extensionists to speak with women. In some countries, it stated, there are fewer or no cultural restrictions on contact between males and females however, it may still be difficult for male extension workers to communicate successfully with women for a number of reasons;

that when women lack education, they may lack confidence to express themselves to extension workers to speak up during extension activities,

that in areas where men are considered authority figures in the community or household women may not feel free to speak up or to ask questions

the meeting times do not fit the activities of the women and so they often opt out.

A study in Gambia reported that male extension agents asked about unfavourable factors in working with rural women perceived women as poor decision-makers, physically weaker than men, and shy in mixed gender meetings (Mennah, 1988, cited in Saito and Weideman, 1990).

5.9 INSTITUTIONAL MECHANISMS IN PLACE TO ENSURE THAT WOMEN ARE REACHED BY EXTENSION SERVICE.

5.9.1 Targets given for the proportion of male and female farmers to be involved in each Activity conducted by extension agents.

Examination of annual programme of work (1994,1995,1996,1997) of the study districts and Regional Agricultural Extension office showed no records on the expected number of men and women to be involved in each extension activity conducted by extension agents. However, a document on annual target setting for extension agents revealed that 80 percent of farmers trained should be male whilst 20 percent should be female. This implies that the Department of Agricultural Extension Services gives priority to men when it comes to involving farmers in extension activities.

5.9.2. Regular reporting with data desegregated by sex.

Annual reports of the study districts and Regional Agricultural Extension office examined showed no data desegregated by sex. Reports on activities carried out by extension agents do not indicate whether men, women, or both were involved.

This implies that, extension agents are not made to report with data desegregated by sex. In this case, they can decide to either involve women or not in their activities.

5.9.3 Gender sensitisation training for extension agents.

An examination of training calendars contained in the annual reports (1994,1995 1996) of the

training of staff on gender sensitisation. However, a questionnaire administered to extension agents revealed that only staff of Savelugu/Nanton district received training on "gender and development" which was organised and sponsored by IFAD/SRDP. This could be one of the reasons why more women in that district are contacted by extension agents than in Tamale District. Gender sensitising training enables extension agents to know about the roles performed by men and women on the farm, in the household and the community or society as a whole. It gives them the tools needed to gather information on the specific tasks and responsibilities of women and men in agricultural production, and in the household.

Also the workload of both men and women during the day and during different seasons, the financial obligations of men and women (such as medical care, school fees, clothing and provision of soup ingredients) and the constraints men and women face in agricultural production are known. Gender sensitivity training also enables extension agents to know the needs and priorities as perceived by farmers, and existing opportunities that could be used to improve agricultural production and rural well being.

5.9.4 Availability of data on the role of men and women in agricultural production

No data on the agricultural activities carried out by men and women could be obtained from annual reports, annual programme of work, and other documents of the Department of Agricultural Extension services in the region. Available data on agricultural activities were on crops grown and livestock raised by farmers in general. There was also no data on the farm operations carried out by male and female farmers.

5.9.5 Monitoring and Evaluation of extension programmes directed to women

An interview with the Regional WIAD co-ordinator showed that, extension agents are monitored to find out if they are transferring the technologies received from WIAD SMS to the farmers. According to her, periodic evaluation is carried out by WIAD on the programmes transmitted to women by extension agents. Also some documents obtained from WIAD office indicate that regular monitoring and supervision of extension agents and training needs assessment are carried out by WIAD SMS.

5.9.6 Policies of the Department of Agricultural Extension services aimed at reaching women farmers:

None of the reports, annual programme of work and other documents collected from the Regional Agricultural Extension office contained policies that aimed at reaching women farmers. This implies that policies formulated by the Department of Agricultural Extension services (DAES) do not take into consideration the need to reach women farmers.

Extension agents are guided or directed by policies of the department in carrying out their duties. In this respect if the policies formulated by the DAES do not specify the need to reach women farmers, they will not be encouraged to target women farmers.

According to the WIAD co-ordinator, before the introduction of the Unified Extension System (U.E.S.), female extension agents working under WIAD paid regular visits to women to transfer technologies, knowledge or information on WIAD programmes. After the introduction of U.E.S, contact with women by extension agents has been irregular. This she said is because female extension agents who are used to working with women are few in the Northern region while the male agents who are not accustomed to working with women are the majority

5.9.7 Factors militating against the transmission of WIAD programmes to women

The WIAD Regional Co-ordinator mentioned that certain obstacles are encountered in an effort to disseminate WIAD programmes (such as crop utilisation, nutrition education, home management and improvement, crop processing and preservation) to women. Some of the obstacles she said are institutional; others are due to the fact that male extension agents are not accustomed to working with women farmers.

(i) Institutional factors:

. Also the training schedule (quota) for WIAD SMS is inadequate resulting in a few topics being treated with extension agents to transmit to women as result, there is less progress in WIAD activities in the field.

(ii) Extension agents failure to contact a significant number of women.

According to the WIAD Regional co-ordinator, monitoring and evaluation of front-line-staff activities in the field have revealed that most of the technologies that the WIAD SMS trained them on are not disseminated to women. Most of them she said direct their attention to male farmers.

Extension agents also confessed facing difficulties in transferring WIAD programmes to women. According to them it sometimes appear strange when rural women see a male extension agent demonstrating to them how to prepare balanced diet or build mud stoves. The women they said, regard cooking and building of cooking stoves as a woman's task or responsibility in the society as a result, they do not take the training seriously. Also, male extension agents are not familiar with the practical aspect of nutrition education and crop utilisation. This may prevent them from having regular contacts with women.

5.9.8 Strategies adopted to get extension messages to women

When asked what measures or strategies they have adopted to ensure that women get extension messages, she mentioned the training of women volunteers. These women volunteers are trained with the support of IFAD, on WIAD programmes after which they in turn train their fellow women in the communities she said. They are given bicycles by IFAD to enable them move from one place to another to disseminate technologies they have learned to their fellow women. This idea of training to women volunteers is restricted to the IFAD project areas she added.

Another strategy adopted by WIAD to ensure that extension programmes get to women is the demonstration home concept, which is also restricted to the IFAD areas. According to her, this strategy is very effective in reaching women with extension programmes. Women are brought into the demonstration home where they are taught cloth weaving and tailoring for a year after which they are passed out. Also, women leaders are selected from the various villages to the demonstration home to be trained on crop production, crop processing, home management, animal production, nutrition and home improvement. After receiving the training, they return to their villages to train their fellow women on these programmes.

A strategy which also seem to be very effective is collaborating with District Extension supervisors and co-ordinators, whereby, WIAD programmes and targets are given to them to give to their field extension agents.

The fact that D.A.E.S has failed to put in place procedures to ensure that, extension services get to women implies that extension agents can either choose to contact or not contact women when carrying out extension duties in their respective operational areas. This provides a good ground

for neglecting women who are regarded as a difficult target group to be contacted by extension agents. If extension agents were given targets, they would be prompted to work in such a way that; the set targets are achieved. Hence, one of the strategies that an extension organisation can adopt to reach women farmers is to set targets for the number of men and women expected to be involved in each activity conducted by an extension agent. If extension agents were made to report regularly, with data desegregated by sex, their consciousness would be raised on the need to involve both men and women in extension activities. It can be inferred that, no mechanisms are established within the Department of Agricultural extension Services for extension agents to collect data based on attendance to extension activities by sex.

This problem is not new for, Saito and Weideman (1990) observed that, regular reporting on attendance to extension activities by sex will increase the awareness of extension agents and encourage them to address the issues of women farmers. Duncan, (1997) in her study on women in agriculture in Ghana, reported that until recently, very little attempts were made to collect gender desegregated data. She stressed that, lack of gender desegregated statistical data seriously hampers appropriate planning of sustainable agricultural development. She recommended that, as a matter of urgency, all institutions involved in research and policy must be mandated to give the gender dimensions to their data collections in areas, which affect women.

CHAPTER SIX

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1 SUMMARY

The main concern of the study was to find out the factors influencing women farmers' contact during extension delivery and to find out how women farmers' involvement in extension activities can be encouraged during extension delivery.

The survey method of the descriptive type was employed to collect qualitative data. The target population of the study included all women farmers and extension agents in Savelugu/Nanton and Tamale districts.

A total sample size of ninety-six women and sixteen extension agents were selected using random sampling technique. Primary and secondary data were collected for the study.

Instruments used in collecting primary data were a self-administered questionnaire for field extension agents, interview schedule for farmers, and an interview with the Women In Agricultural Development (WIAD) coordinator.

secondary data was collected from annual reports and annual programme of work of the two districts, the Regional WIAD office, and the Regional Agricultural Extension Office as well as policy documents of the Department of Agricultural Extension Services.

The results of the survey showed that, Islam was the predominant religion practised by the

women. Over 90 percent of them had not received any formal education. Farming, sheanut picking, groundnut oil and sheabutter extraction are the major occupations of the women. About 90 percent of them had the status of cooking wives and only 2 of them heading households.

Women in the study area contribute immensely to agricultural production by performing the roles of farm owners, farm assistants to their husbands on the family farm, and farm workers for a wage (labourers). Major crops grown by the women include maize, groundnuts, soyabean and cowpea. However a large proportion of the women grows groundnuts and soyabean. In performing the roles of farm owners, farm assistants and farm labourers, the women carry out important tasks associated with crop production. These include planting, weeding, fertiliser application, and harvesting. They are also largely responsible for post-harvest activities such as processing, preservation, and storage. Over 90 percent of the women cultivate vegetables either on their own farms, or at the periphery of their husband's farms. Apart from engaging in crop production, the women rear domestic animals such as poultry, goats and sheep. A small percentage rear rabbits and pigs.

The survey also revealed that few women (32.3 percent) were contacted by extension agents for that matter have access to extension services. More women farmers are contacted by extension agents in Savelugu/Nanton than Tamale District through home visits, farm visits, and participate in group meetings, field days, demonstrations and field trips/excursions. Through this, they acquire technologies on crop production, animal production agroforestry, home management, crop utilisation, and crop processing.

The women had limited access to productive resources. The main source of land for farming by women is husbands. About 80 percent of them had user rights over land belonging to their husbands. Other sources of land for farming by women were male relatives (brothers and sons) and chiefs. Women do not own land in the study area and this sometimes serve as a constraint to agricultural production, and barrier to the adoption of certain innovations. The women did not have access to institutional credit for that matter had to rely on their own savings for farming. Husbands sometimes assist but this is negligible. Due to lack of access to credit, women find it difficult to purchase inputs to implement recommendations made by extension agents. In order to obtain credit to purchase inputs for farming, some women join local groups in the community.

Women are the main source of labour on their farm. Labour is a constraint to women farmers in agricultural production. Due to time constraints they are not able to provide the labour required on their farms. Sometimes labour requirements of a woman's farm coincide with those of the family farm. When this happens she has to postpone working on her farm, the consequence being that it becomes difficult at times to carry out cultural practices on time. Other sources of labour, are children, husband, and hired labour. Exchange labour forms a small proportion of labour on the farm of women.

Decision-making powers concerning farming within the household lie solely on the husband or household head. About 77 percent of the women said their husbands make decisions. Women mostly make decisions on matters concerning only their own farms. In this case women who

only assist their husbands in farming do not have decision-making powers. This lack of decision making authority pose as a barrier to the adoption of recommended farming practices.

Majority of the women (68.8 percent) does not have preference for any sex of agent. When it comes to attending meetings, demonstrations, fielddays and training courses with men, women feel reluctant to attend. This is due to inferiority complex or lower social status of women. They also do not like seating at the same places with men, and do not talk or contribute to discussions during meetings and other social functions. This makes them prefer meetings or functions organised solely for them. Also, the presence of husbands sometimes inhibits women's desire to speak. Women also find it difficult to travel outside their communities due to domestic chores, reproductive responsibilities, income generating activities, and husband's refusal to grant permission. The women spend part of their time attending social and community obligations such as funerals, outdoorings and weddings. These interfere with women farmers' participation in extension activities.

The women gave different times at which they will want extension agents to visit them. Over 90 percent of them said after supper will be the most convenient time for them to listen to radio programmes. Domestic chores and responsibilities occupy the women's time. These include cooking, fetching of water, collecting firewood from the bush, home sanitation and management, processing of farm product, milling of grains, carrying food to the farm, child care, and caring for the sick. When asked which of the chores occupy them most, they said cooking, fetching of water, collection of firewood, processing and off-farm income-generating activities.

On the part of the extension agency, there is a male dominance of the extension staff in the study area. Out of a total number of 16 technical officers interviewed, 14 were male while only 2 were female. The grade of the agents ranged from Technical officer grade II to principal technical officer. With the exception of one technical officer, all of them were married. They were of different religious denominations. Fifty (50) percent were Moslems, 37.5 percent Christians and 12.5 percent were of other religious denominations.

The criteria used by extension agents in selecting contact farmers are as follow:

i) he/she must be respected in the community;

ii) he/she must be ready to accept and practice innovations introduced by the extension agent;

iii) he/she must be prepared to share information or Knowledge acquired with other farmers, iv) the farmer must own a piece of land on which to carry out a demonstration,

iv) the farmer must be ready to travel outside the community when the need arises,

v) he/she must be an opinion leader,

vii) the farmer must be serious, hardworking and committed to extension activities. According to the extension agents, requirements which women meet are that they show interest in extension activities, they put what they learn from the extension agent into practice and are very co-operative.

The extension agents have different perceptions about women's role in agricultural production. Majority of them perceives women as farm owners, as well as farm assistants and others regard

women as farm assistants. They also perceive women to lack decision-making authority.

Extension agents also encounter some obstacles when working with women farmers. These are: i) lateness to meetings and other extension functions; ii) failure of women to attend meetings; iii) difficulty in acquiring land for demonstration; v) difficulty in meeting women at certain times of the day due to domestic chores and other responsibilities; vi) husbands becoming jealous when male extension agents are interacting with women; vii) women's lack of decision-making authority; viii) labour constraints; ix) social and cultural activities interfering with women's participation in extension activities; x) difficulties identifying women's problems because they find it difficult speaking out their minds; xii) reluctance of women to talk when their husbands are present at the same function with them; and others.

Extension agents prefer working with married to unmarried women. The reasons are that married women are responsible in the family set-up as such are serious with what the agent asks them to do; they often get assistance from their husbands, in the form of land, capital and labour. Unmarried women on the other hand, do not often take part in extension activities and can get married in another village resulting in the disruption of a program with her. Extension agents also prefer working with groups of women to individual women farmers. Their reasons are that suspicion by husbands is limited; women in a group are able to gather resources for farming and demonstrations; women have more confidence in themselves when in a group; and others.

Extension agents do not have a fixed time for conducting extension activities, however, majority

said they conduct their activities in the morning, and in most cases, women do not attend. They sometimes have to reschedule their activities when the turn out is low. This they said discourages them from contacting women during their extension duties.

There are no institutional mechanisms in place to sensitise extension agents to involve women in their activities. That is, extension agents are not aware of the proportion of men and women farmers to involve in each extension activity, and they are not instructed to report with data desegregated by sex. They are also not trained on gender sensitisation, as such do not see the need working with women farmers. They complained having problems in transmitting home economies programmes such as food utilisation and construction of improved stoves to women.

WIAD subject matter specialists cover a few topics within a year with extension agents because the training schedule or quota given them is inadequate and policies formulated by the Ministry of Agriculture do not take into consideration the need to reach women farmers.

6.2 CONCLUSIONS

The following conclusions can be drawn based on the findings of the study.

- Women contribute significantly to agricultural production in the Savelugu/Nanton and Tamale Districts of the Northern Region. They play the role of farm managers, farm assistants on their husbands' farm, and farm labourers. In playing these roles, they perform important farm tasks such as planting, weeding, fertiliser application, harvesting, threshing, processing and storage. Apart from contributing immensely to crop production, women rear animals to satisfy their cash needs. Women are thus, assuming changing roles in agricultural

production in farming systems in recent times. This is because they are becoming farmers in their own right and are also now growing crops, which were regarded in the past as the preserve of men.

- Despite the important roles women play in agricultural production in the study area, majority of them lack contact with extension agents. They therefore, rely on traditional methods of farming which often lead to poor yields. However, more women in Savelugu/Nanton District are contacted by extension agents and consequently are exposed to improved farming techniques than those in the Tamale District. This is the result of the policies instituted by IFAD which aim at integrating women into the agricultural development process.
- Factors influencing women farmers' contact during extension delivery are that:

a) Women are inhibited from participating in extension activities due to difficulties in obtaining productive resources; socio-cultural factors; domestic chores; social activities; and women's ability to travel outside their communities to participate in training courses due to marital .obligations and reproductive responsibilities.

b) Criteria for the selection of contact farmers do not favour women. This is because women do not meet most of the requirements such as land ownership, ability to provide inputs for demonstrations; opinion leadership; lack of readiness to take risk and ability to travel outside the community when the need arises. Women farmers are therefore rarely chosen as contact farmers.

c) Extension agents perceive women as farmers as well as farm assistants to their husbands but this does not influence them to involve women in their programmes. However, they perceive women as lacking decision-making authority, which may influence them not to involve women in their activities.

d) Extension agents encounter obstacles when contacting women. These discourage them from contacting women farmers.

e) At the institutional level, no mechanisms are put in place in order to sensitise extension agents on the need to work with women farmers, and policies formulated by the Department of Agricultural extension Services do not take into consideration the need to reach women farmers.

6.3 RECOMMENDATIONS

The following recommendations are proposed which when implemented would strengthen extension contact with women farmers.

A. Strategies Recommended for Extension Agents

- To avoid husband's jealousy or suspicion when extension agents are interacting with individual women, group approach of contacting women should be adopted. This is because, groups provide a socially acceptable way for male extension agents to work with women farmers, an interaction that would not be possible between an individual male extension agent and an individual female farmer.
- To overcome women farmers' reluctance to talk in the presence of men especially their husbands during meetings, field days, and other extension functions, separate meetings should be organised for men and women. In this case women would feel free to talk or contribute to discussions.
- Since women farmers find it difficult to travel outside their communities for extension courses, other methods of training women should be employed. For instance, topics to be treated at the training courses can be channelled to women through the radio since about 65

percent of them have access to radio. Transmission of messages should be done after supper (after 7.00pm) which is the time most of the women have finished attending to their domestic chores and are relaxing.

- Another strategy is to locate meetings and other extension activities at places where women can attend. Convenient places may be on their farms, or around market places, grinding mills, or source of water supply such as bore holes.
- Considering women's time constraints extension activities should be organised at times that women are less busy. Extension agents could find out from the women when they can be conveniently contacted. Prior notice could be given so that they can make room for the extension agent to visit them. Scheduling of extension activities should be done in such a way that women are not over loaded with extension activities since this can discourage them from attending subsequent ones.

- Extension agents are also urged to assist women in establishing wood lots on marginal lands that are close to the communities so that women do not have to walk long distances into the bush to collect firewood. In communities where women have to walk over two kilometres to fetch water, extension agents in those areas should link the leaders with Non-Governmental Organisations such as the Village Water Reservoir and Rural Water and Sanitation Project that are concerned with rural water supply.
- If women are to be chosen as contact farmers, then the present selection criteria must be reviewed. For instance, land ownership should not be used as a selected criterion. Once a woman can obtain a piece of land for demonstration, whether from her husband, brother or chief, she should be qualified to be a contact farmer. Extension agents could advise husbands

and opinion leaders on the benefits of giving land to women to carry out demonstrations. Ability to provide inputs (fertiliser, agro-chemicals) for demonstrations as a selection criteria should be withdrawn. Demonstrations that require local resources such as cowdung, compost, neem (as a pesticide) can be conducted on women contact farmers' farms. Low-input technologies requiring management rather than purchased inputs should be introduced. To ensure that women are selected as contact farmers, quotas are recommended. If extension agents are given quotas to select male and female contact farmers, the need to include women will be considered when selecting contact farmers.

Extension agents need to know that women are becoming farmers in their own right as such need to be introduced to improved methods of farming. They also need to realise that women farm assistants carry out important farm tasks for that matter need knowledge on how to perform these tasks efficiently. Extension agents should therefore, disseminate improved methods of farming to women, whether they are farm owners or farm assistants.

B. Recommendations for Policy Makers and Extension Supervisors

This study has shown that the extension organisation has failed to put in place mechanisms (procedures) to ensure that extension agents contact women. In order to address this problem,

- Extension agents need to be exposed to procedures that will sensitise them or raise their consciousness on the need to work with women farmers. In this regard, extension supervisors or administrators ought to give extension agents targets for the number of men and women farmers to be involved in each extension activity they conduct. Formats for reporting attendance during extension activities by sex should be designed for extension agents. This will raise their consciousness on the need to work with men and women farmers.

- Gender sensitising training should be organised by the Department at the district level for all extension agents (both male and female) to equip them with the tools or skills to work with both men and women.

To ensure that more women farmers are contacted by extension, training schedule (quota) for WIAD SMS should be increased.

- Policies formulated by D.A.E.S should emphasise the need for extension agents to contact women during extension delivery.
- The demonstration home concept should be extended to all districts in the Region since it has proven very effective as a tool for reaching women in the IFAD/SRDP areas and so is the women volunteer concept.
- Extension agents should be given training on vegetable production so as to the equip them with the knowledge and skills to impart to women to increase vegetable production since Over 90% of women in the study area cultivate vegetables.
- Monitoring of extension agents by WIAD SMS needs to be intensified so as to ensure that, the training they received on WIAD programmes get to women.

Suggestions for Further Research

- Due to financial and time constraints, the investigator could not extend the study to cover the whole region. Northern region is made up of more than ten ethnic groups with varying cultures religious denominations, and farming systems as such the findings of this study cannot be generalised. In this respect, a similar study needs to be conducted to cover the whole region.

- The field data collection was carried out during the off farming season as such the responses obtained especially those on convenient time to be contacted by extension agents may be different from what may be obtained during the farming season. Therefore, this study needs to be replicated and the fieldwork done during the farming season.
- Further research needs to be conducted to compare factors that affect male and female farmers' participation during extension delivery.

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APPENDIX A

FEMALE FARMERS' QUESTIONNAIRE

NAME OF RESPONDENT...DATE.....

VILLAGE.....

.....DISTRICT.....

SECTION I: BACGROUND CHARACTERISTIC OF WOMEN

1. Marital Status
   (a) Married [ ]
   (b) Single [ ]
   (c) Divorced [ ]
   (d) Separated [ ]
   Wife living somewhere
   (e) Others (specify).....

2. Religion
   (a) Christian [ ]
   (b) Moslem [ ]
   (c) Traditional [ ]
   (d) Others (specify).....

3 Educational Status:
   (a) Primary Education [ ]
   (b) Middle School [ ]
   (c) J.S.S. [ ]
   (d) S.S.S.
   (e) Tertiary Education [ ]
   (f) No formal Education [ ]
   (g) Others (specify).....

4 Occupation .....

5. Status within household:
   (a) Household [ ]
   (b) Cooking wife [ ]
   (c) Non-cooking wife [ ]

(d) Dependant [ ]
(e) Others (specify) [ ]

SECTION II AGRICULTURAL ACTIVITIES

6. What crops do you cultivate? Please list them?
   (a)..... (e) .....
   (b)..... (f) .....
   (c)..... (g) .....
   (d)..... (h) .....

7. Which of them/are for home consumption?
   .....

8. Which of them are for sale?
   .....

9. Do you grow vegetables?
   Yes [ ] No [ ]

10. If yes, where do you grow vegetables?
    (a) On my husbands farm [ ]
    (b) On my sons farm [ ]
    (c) On my fathers farm [ ]
    (d) Others (specify).....

11 List the farming operations you perform:
   (a)..... (e) .....
   (b)..... (f) .....
   (c)..... (g) .....
   (d)..... (h) .....

12. Do you rear animals? Yes [ ] No [ ]

13 If yes, what type of animals do you rear?
   .....
   .....
   .....
   .....

.....

.....

SECTION III CONTACT WITH EXTENSION

Access to Extension Services

14 . Does the extension agent communicate with/contact you?

Yes [ ] No [ ]

15. If yes, how often do you see him?

(a) once a week [ ]
(b) once every fortnight [ ]
(c) once a month [ ]
(d) once a year [ ]
(e) Rarely [ ]
(f) other (specify).....

16. What form of contact does the extension agent make with you?

(a) Home visits [ ]
(b) Farm Visits [ ]
(c) Field days [ ]
(d) Group meetings [ ]
(e) Training course [ ]
(f) Demonstrations [ ]
(g) Excursions/field trips [ ]

17. Which of the methods in 3.1.5 above do you prefer?

.....

.....

18. Give reasons for your choice?

.....

.....

.....

.....

.....

.....

19. Have you ever received a reward from the extension services department?

Yes [ ] No [ ]

20. If yes, what was the purpose of the reward?

.....

.....

.....
.....
.....
.....
.....

21. Have you ever visited the extension agent in his/her office or home?
Yes [ ] No [ ]

22 If yes, what was the purpose of the visit?

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.....
.....
.....
.....
.....
.....
.....
.....

23. Will you want the extension agent to be contacting you?
Yes [ ] No [ ]

24. a) If yes, why

Technology Transfer

25. Do you get access to improved technologies of farming?
Yes [ ] No [ ]

26. (a) If yes, from what source?
Extension Services
Religious Organisations
NGOs
Research centres
School children
Others (specify).....

27. What improved farming practices/technologies are they?

.....
.....
.....
.....
.....
.....

28 What types of technology does the extension agent transfer to you?
Tick those applicable

(a) Crop production [ ]
(b) Labour-saving technology [ ]
(c) Time-saving technology [ ]
(d) Crop processing technology [ ]
(e) Animal production [ ]
(f) Agroforestry technology [ ]
(g) Home management [ ]
(h) Crop utilisation [ ]
(i) Vegetable prod. techniques [ ]
(j) Others (specify).....

29. Which of the above technologies do you need?
(a)
.....
.....
(b)
.....
.....
(c)
.....
.....

SECTION IV: BARRIERS TO PARTICIPATION

PRODUCTION RESOURCES

Access to Land

30. If farm owner, do you have difficulty getting land to farm?
Yes [ ] No [ ]

31. (a) If yes, what are the difficulties?

.....
.....

.....
.....

32. (b) From Whom do you get land to farm?
Husband [ ]
Male relatives [ ]
Inherited/family land [ ]
Lease [ ]
Chief [ ]
Father [ ]
Others (Specify).....

33. Do you own the land? Yes [ ] No [ ]

34. If no, why.....
.....

Access to Credit

35. What is your major source of capital for farming?

(a)	Bank	[ ]	(g)	Amasachina	[ ]
(b)	Relatives	[ ]	(h)	Extension Dept.	[ ]
(c)	Friends	[ ]	(i)	Religious Orgs.	[ ]
(d)	Husband	[ ]	(j)	NGOs	[ ]
(e)	Own savings	[ ]	(k)	Other (Specify).....	
(f)	Group savings	[ ]			

36. Do you belong to an association? Yes [ ] No [ ]

37. (a) If yes, what is the purpose of the association?

38. (b) What do you gain by joining the association?

.....
.....

.....
.....

.....
.....

Access to Labour

39. What is your major source of labour?

(a)	Self	[ ]	(e)	Exchange of labour	[ ]
(b)	Children	[ ]	(f)	Hired labour	[ ]
(c)	Husband	[ ]	(g)	Other (Specify).....	

....

40 Do you find it difficult getting labour?
Yes [ ] No [ ]

41. If yes, what do you do?.....

42. Have there been occasions where labour requirements of your farm coincides with that of the family farm? Yes [ ] No [ ]

43. If yes, what do you do?.....

Access to Inputs

44. Where do you get inputs (fertilizer, seeds, chemicals) for you farm?
(a) I buy [ ] (c) NGOs [ ]
(b) Extension services [ ] (d) Other (Specify).....

Socio-Cultural factors/Religious norms

45. Does your culture permit you to interact freely with male non-family members?
Yes [ ] No [ ]

If no, what are the reasons?.....

Are you permitted by tradition to interact with male extension agents?
Yes [ ] No [ ]

46. Are there any religious norms that restrict male/female interactions in your community? Yes[ ] No[ ]

47. Who makes major decisions within the family concerning farming?
(a) Husband [ ]
(b) Wife [ ]
(c) Collective decision by husband and wife [ ]
(d) Household head [ ]
(e) Other (Specify).....

48 Whom do you prefer to communicate with you?
(a) Male Extension agent [ ]
(b) Female Extension Agent [ ]
(c) Any of above [ ]

49. Give reasons for your choice?
.....
.....
.....

50. Are you permitted by tradition to attend meetings with men?
Yes [ ] No [ ]

51. (a) If no, why.....

52. Which of these do you prefer?
(a) Meetings organised for only women [ ]
(b) Same meetings for men and women [ ]

53. Give reasons for your answer.....
.....

54. Do you have to seek permission before travelling outside the villages on field trips and training sessions? Yes [ ] No [ ]

55. (a) If yes, from whom?.....
(b) Does he often grant you permission?.....
(c) If he doesn't what do you do?.....

Responsibilities/Obligations

56 Do your children interfere with your participation in meetings, field days excursions etc? Yes [ ] No [ ]

57. If yes, in what ways?.....

58. List your responsibilities in the household as a woman?
(a)..... (f).....
(b)..... (g).....
(c)..... (h).....
(d)..... (i).....
(e)..... (j).....

59. Which of them interfere with your participation in excursion activities?
(a)..... (f).....
(b)..... (g).....
(c)..... (h).....
(d)..... (i).....
(e)..... (j).....

60. What are your financial obligation as a woman within the household?
(a).....
(b).....

(c).....
(d).....
(e).....
(f).....
(g).....

Mobility and Time Constraints

61 What time is convenient for you in case the agent wants to visit you?
.....
.....
.....
.....
.....
.....

62. Why is that time convenient?.....

63 What time of the day is inconvenient for you to be visited by an extension agent?
.....
.....
.....

64 Why is that time not convenient?
.....
.....
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.....
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.....

65 Do you have access to radio or T.V.?
Yes [ ] No [ ]

66 What time of the day will you like to listen to radio or TV programmes on extension?
.....
.....

67 Why that time?.....
.....

68. Is it possible for you to take part in training programmes organised outside the village?

Yes [ ] No [ ]

69. If no, give reasons .....
.....
.....
.....
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.....
.....

70 Which of the community activities listed below interfere with you taking part in extension activities?

(a) Outdoorings
(b) Political meetings
(c) Community Development
(d) Market days
(e) Visiting relations
(f) Association/group meetings
(g) Weddings
(h) Other
(Specify).....

APPENDIX B

EXTENSION AGENTS QUESTIONNAIRE

DATE..... DISTRICT.....

SECTION 1: PERSONAL DATA

1. Sex.....
2. Grade.....
3. Religion:
   - Christian [ ]
   - Moslem [ ]
   - Traditional [ ]
   - Other (specify).....
4. Marital Status
   - Married [ ]
   - Single [ ]
   - Engaged [ ]
   - Divorced [ ]
   - Widow/Widower [ ]
5. Duration of Service with MoFA?.....

SECTION 2: CONTACT WITH WOMEN FARMERS

6. What crops do women farmers show keen interest in growing in your operational area?
   .....
   .....
   .....
   .....
7. What roles do women play in crop production in your operation area?
   .....
   .....
   .....
   .....
   .....
   .....

8. List farming operations performed by women on the farm?

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.....
.....
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.....

9. What improved techniques of farming do you transmit on crops grown by women?

(a)..... (e).....
(b)..... (f).....
(c)..... (g).....
(d)..... (h).....

10. Which of the technologies you transmit do women show interest in?

(a)..... (e).....
(b)..... (f).....
(c)..... (g).....
(d)..... (h).....

11. Do you receive any training on gender issues?

Yes [ ] No [ ]

12. If yes, list the topics treated.

(a)..... (e).....
(b)..... (f).....
(c)..... (g).....
(d)..... (h).....

What proportions of men and women are you expected by your department to involve in each activity you carry out?

.....
.....

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.....
.....
.....

SECTION 3: CRITERIA FOR SELECTION OF FARMERS TO PARTICIPATE IN EXTENSION ACTIVITIES

14. What criteria do you use in selecting farmers to participate in extension activities?

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15. What criteria do you use in selecting contact farmers?

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16. What requirements should a farmer meet before a demonstration is conducted on his/her farm?

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.....
.....

17. Which of the criteria listed in 14 above, do women farmers meet?

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.....

FLS Perception of Women Farmers

18. Who is a woman farmer in your opinion?

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.....
.....
.....
.....
.....

19. How do you perceive a woman in relation to Agricultural production?

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.....
.....
.....

.....

20. What do you think would happen if women do not participate in agricultural production?

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.....
.....

21. Do women have decision-making authority in farming?

Yes [ ] No [ ]

22. If yes, what are they?

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.....
.....
.....
.....

23. Do women farmers need extension services?

Yes [ ] No [ ]

24. If yes, why?.....
.....
.....
.....

.....

25. If no why?.....
.....
.....
.....
.....

26. Are there women household heads in your operational area?

Yes [ ] No [ ]

27. Do you give any specific attention to such women?

Yes [ ] No [ ]

28. If yes, what form of attention?
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.....
.....
.....
.....
.....

29. If no, why?.....
.....
.....

30. Do you regard women as farmers or farm labourers?
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.....

31. What reasons(s) do you have for your choice?

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.....

SECTION 4: Obstacles to the involvement of women in extension activities

Extension agent/women farmer interaction

32. Do you encounter problems working with women farmers?

Yes [ ] No [ ]

If yes, what are they?.....
.....
.....
.....

34. In your operational area are women permitted to interact freely with male non-family members or strangers?

Yes [ ] No [ ]

35. If no, what are the reasons?
.....
.....
.....
.....
.....
.....

36. If yes are you able to over come these restrictions?

Yes [ ] No [ ]

37. Which of the following do you prefer working with?

(a) Individual women farmers

(b) Women farmers' groups

38. Give reasons for your choice

.....
.....
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.....
.....

39. Do you have to ask permission from husbands of married women farmers before communicating with them?

Yes [ ] No [ ]

40. If yes, what are the reasons?

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.....
.....

41. What do you do if the husband is not at home?

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.....
.....

42. Do you equally ask permission before interacting with women farmers who are not married?

Yes [ ] No [ ]

43. If yes, why?

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.....
.....
.....

44. If no, why?

.....
.....
.....
.....
.....
.....

45. Which of the following do you prefer working with?
    (a) Married women
    (b) Unmarried women
46. Give reasons for your choice?

.....
.....
.....

.....
.....
.....

47. Do you organise separate meetings for women farmers or mix them up with men?
.....
.....
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.....
.....
.....

48. If separate meetings what are your reasons for doing so?
.....
.....
.....
.....
.....
.....

49. Do women in your operational area engage in non-agricultural income generating activities?

Yes [ ] No [ ]

50. If yes, do they interfere with their participation in extension activities?

Yes [ ] No [ ]

51. If yes in what ways?
.....
.....
.....
.....
.....
.....

52. What are the responsibilities of women in the household?

(a).....
(e).....
.....
(b).....
(f).....
.....
(c).....
(g).....
.....
(d)..... (h).....

53. Do such household responsibilities prevent them from taking part in extension activities?

Yes [ ] No [ ]

54. What are women's attitude towards demonstrations, meetings or excursions?

.....
.....
.....
.....
.....
.....

Scheduling of extension activities

55. At what times of the day do you organise activities in your villages?

(a) Morning [ ] (e) Midday [ ]

(b) Afternoon [ ] (f) After supper [ ]

(c) Evening [ ] (g) Other

(specify).....

56. Do women turn out in their numbers at those times?

Yes [ ] No [ ]

57. If no, why.....

.....
.....
.....
.....
.....
.....

58. Do you then make efforts to adjust your schedule of activities in order to make it convenient for them to participate?

Yes [ ] No [ ]

59. Does their inability to attend extension activities at a certain scheduled time affect your work?

Yes [ ] No [ ]

60. If yes, in what way?

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.....
.....
.....
.....
.....

61 What discourages you from working with women farmers?

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.....
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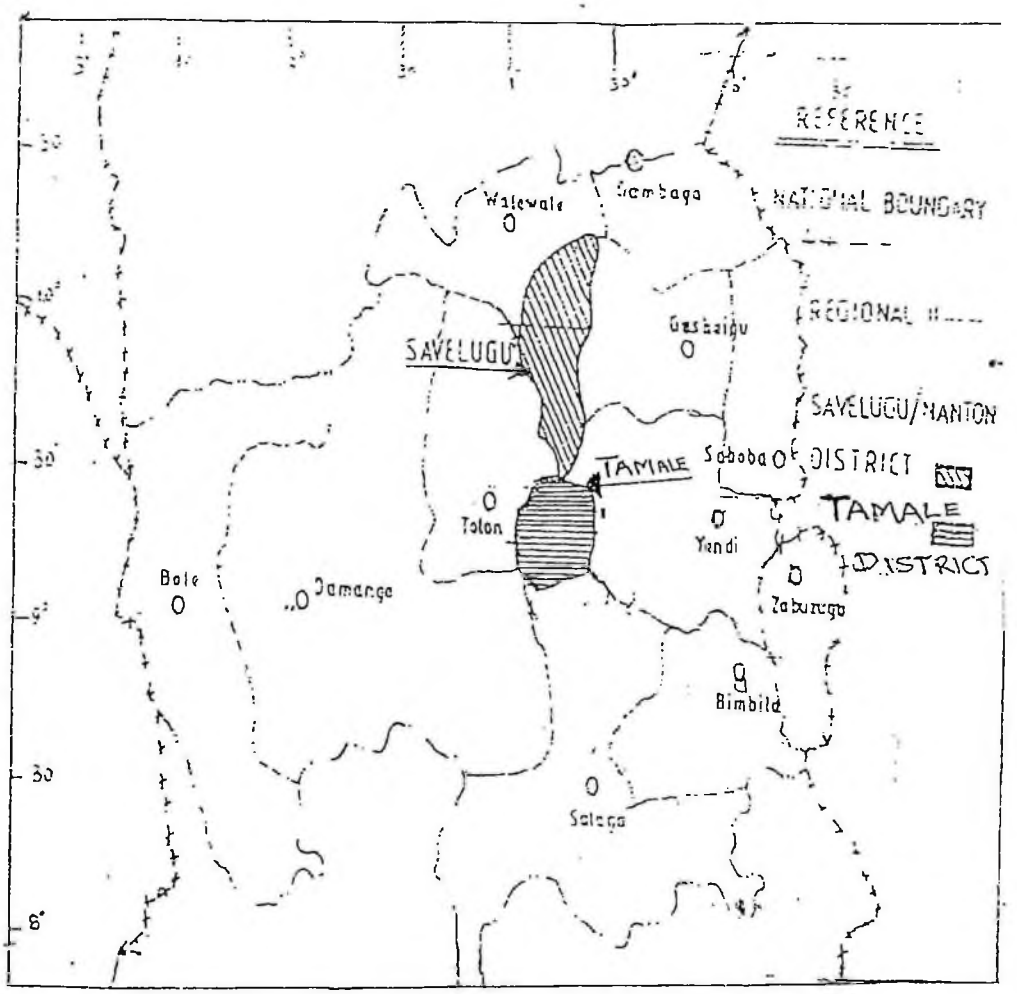
APPENDIX C

MAP OF NORTHERN REGION SHOWING THE STUDY A



SOURCE : SAVELUGU / NANTON DISTRICT FIVE-YEARS DEV.PLAN (1997 - 2001)