

## INFORMATION PROVISION FOR SUSTAINABLE AGRICULTURAL PRODUCTION IN THE TOLON- KUMBUNGU DISTRICT OF THE NORTHERN REGION, GHANA

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### Abstract

*The study sought to identify the methods of information provision to farmers and to evaluate how information is made accessible to farmers as well as the constraints farmers face in the Tolon-Kumbungu District of the Northern Region. Six communities were used for the study. Data was collected from one hundred and fifty farmers and nine non-farmers from the Tolon/Kumbungu District. The systematic sampling technique was used to select the farmers while the non-farmers were selected purposively. Questionnaires were used to gather the needed data. Personal observations and interaction with extension officers were also carried out. The study revealed that the level of information on agriculture in all the communities is encouraging. It further identified some challenges to sustainable agriculture as follows: lack of inputs, poor tractor services, inadequate credit facilities and poor road network. It recommended the need for more agricultural extension officers to educate and disseminate agricultural information to rural farmers and to also encourage and intensify the use of radio programmes on farming practices in local languages in the area. Rural farmers should be encouraged to enroll in adult literacy classes so that they can take advantage of agricultural information captured in print.*

**Keywords:** SUSTAINABLE DEVELOPMENT, INFORMATION ACCESS, AGRICULTURAL INFORMATION, RURAL AGRICULTURE, SUSTENANCE FARMING

### Introduction

Information plays a vital role in the success of every endeavor. Kaye (1995) asserts that good information improves decision- making, enhances efficiency and provides a competitive edge. In agricultural development and production, information is essential and its effective communication helps to facilitate understanding among farmers, agricultural scientists and extension workers (Agboola, 2000).

Information, experts agree, plays an important role in agricultural production in any nation (Aina et al, 1995) and is also viewed as a force for rural development (Okiy, 2003). Despite the fact that it is widely recognized that information provision and access is an important factor in agricultural and rural development, it has not received the required boost and attention to push the agricultural and rural development agenda (Youdeowei et al., 1996). Farmers worldwide but especially those in Africa need access to diverse kinds of information to ensure the success of their efforts – experiences of others in similar situations for adaptation and replication, financial information on the actual performance of their commodities as well as access to credit. They also need agricultural information from research stations (Alemna, 1995; Adomi, 2003).

Information, in recent times is regarded as the fourth and perhaps the most important factor of production. Stonier (1991) emphasizes this by stating that information is the most important factor in the modern production system because anyone who possesses adequate requisite information could reduce the requirement of land, labour and capital. It is in the light of the

above that there is the need for farmers to have access to information to improve their farming methods for sustainable agricultural development.

Agriculture has for long been considered the pillar of Ghana's development agenda. For Northern Ghana, this notion has been further reinforced by the Savannah Accelerated Development Authority (SADA) initiative, which aims at 'greening' the north' and consequently improving agricultural productivity.

Sustainable agriculture is both a philosophy and a system of farming. It has its roots in a set of values that reflects an awareness of both ecological and social realities. Sustainable agricultural systems rely more on crop rotations, crop residues, animal manures, legumes, green manures, off-farm organic wastes, appropriate mechanical cultivation or minimal tillage to optimize soil, biological and natural pest control activity, and thereby maintaining soil fertility and crop productivity. In addition, resistant varieties, and biological, biorational, and cultural controls are used to manage pests, weeds and diseases (MacRae, 1997).

In Ghana, the agricultural sector alone was estimated to have contributed 33.6% to the Gross Domestic Product (GDP) and 42.5% of the foreign exchange earnings of Ghana in 2008. Besides the above, the sector also engages a substantial percentage of the Ghanaian labour force (ISSER, 2009).

Unfortunately, the agriculture sector is fraught with diverse challenges. As a result of which a number of agricultural research institutes have been established in Ghana. The objective is to improve efficiency and productivity in areas such as crop and animal production, food processing, forest and water resources management, and plant genetic resources and biodiversity conservation (Sraku-Lartey and Sam, 2003).

### **Profile of Tolon-Kumbungu District**

Tolon-Kumbungu is one of the districts in the Northern Region of Ghana. It is located in the Guinea Savannah Agro-ecological zone. The rainy season starts in April/May and ends in September/October, with an annual rainfall varying between 900 and 1100 mm (Tsigbey et al., 2003; MoFA, 2007). Tolon-Kumbungu District (TKD) forms about 3.9% of the total area of the Northern Region. It is divided into five sub-districts and has eleven (11) area councils covering about 2,741 square kilometers. The District has a total of 237 communities with Tolon as the administrative capital. According to the 2000 Housing and Population Census, the District has a total population of 135,084 with about 80% of them being farmers.

The District's major economic activity is peasant farming and cotton is the main cash crop. Agricultural activities are rain fed and the District is one of the most deprived districts in the region. About 83% of the population is rural. Poverty rate is very high with about 42% of the people living below the poverty line (GPRS, 2003). Despite the fact that most people in the District are engaged in agriculture, they lack the necessary information for sustainable agricultural development.

### **Statement of the Problem**

Farmers like all other categories of people need information for their everyday activities. Unfortunately many of these farmers are illiterate and can therefore not access information through the formal channels. They however contribute immensely to the socio-economic development of Ghana. Thus their information needs must be met. Those they rely on most for information often tend to be the agricultural extension agents or officers in the various

communities. Information for sustainable agriculture is obtained from various sources such as annual reports and journals but unfortunately, these are not accessed by extension officers because the language of such texts does not appeal to the extension officers (Hanson, *et al.*, 1990). Farmers also rely on informal channels like workshops, seminars and radio for getting agricultural information.

However, these informal channels of information provision are not adequate to enable rural dwellers, especially farmers in the Tolon-Kumbungu District, to realize the full benefits of information for sustainable agriculture. The inadequacy of relevant information on agricultural extension services, credit and storage facilities and good farming practices to farmers are factors which have impacted negatively on sustainable agricultural development in the District.

The problem then is, how do we ensure that these farmers' information needs are adequately met. The researchers wish to establish the linkage between access to information and sustainable agricultural development. This will be useful in ascertaining the farmers' access to information for sustainable agricultural development as well as recommending ways for improvement.

### **Research Questions**

The study looked at the effect of information for agricultural development and its sustainability in the Tolon/Kumbungu District. An attempt will be made to answer the following questions:

1. What type of information do farmers need?
2. What are the methods of information provision available to farmers?
3. How is information made accessible to farmers?
4. What are the constraints of information dissemination to farmers in the Tolon/Kumbungu District?
5. What are some of the ways of improving access to agricultural information?

### **Conceptual Framework**

This study is based on the customer's moment of value theory. by Haag *et al* (2002) which postulates that the customer's moment of value is providing service when the customer wants it (time), how the customer wants it (form), where the customer wants it (location), and in a manner guaranteed to satisfy the customer (perfect delivery). Perfect delivery implies having some assurance that the information you are getting is accurate. Normally, every business organisation, whether profit making or non-profit making, exists to serve its customers. The business will only survive if it provides perfect services to its customers. Perfect service occurs at the customer's moment of value. Haag *et al* (2002) opined that perfect service is possible if a business has the right information in the hands of the right people at the right time. Therefore, the task facing any business is to plan for, develop, manage and use its most important resources namely; information, information technology and people to provide perfect service at the customer's moment of value.

Haag *et al* (2002) provide three dimensions that can be adopted to define the characteristics of information that has value. The three dimensions that constitute the value of information comprise time, content and form. The time dimension of information, deals with the "when" aspect of information. The time dimension of information is vital. It consists of two characteristics, namely, timeliness and currency. The content dimension deals with the "what" aspect of information. Its characteristic includes accuracy, relevance and completeness. The accuracy characteristic of information indicates that the information has

been processed directly and is free of error. The relevance characteristic of information suggests that information is tailored to a task. The completeness characteristic of information shows that you obtain all the information needed for a task.

By using Haag *et al's* (2002) characteristic of perfect service, accurate provision of information results in effective information provision to farmers if information is obtained when the user wants it,- time; where the user wants it,- location; how the user wants it,- form; and the manner guaranteed to satisfy the user,- thus perfect delivery.

This conceptual framework is suitable for this study as sustainable agricultural development cannot be successful if information is not complete, relevant, accurate and timely. Hence, information should be disseminated down and up the organizational structure at the right time, at the right place and in the right form and should also be affordable without compromising its accuracy.

### **Methodology**

The survey design was the data collection process employed in this study. This was basically through the use of a questionnaire.

Farmers from six communities in the Tolon-Kumbungu District were used as the population for the study. Their total number was 1,500. One hundred and fifty of these farmers representing 10% of the total farming population together with nine non-farmers were used as the sample for the study. The sample was made up of 25 farmers from each of the six selected communities. The following were also selected: the District Director of Ministry of Food and Agriculture (MoFA) in the Tolon-Kumbungu District; three Agricultural Extension Officers, one each from Kumbungu, Nyankpala and Tolon; two Research Officers at the Savannah Agricultural Research Institute (SARI), Nyankpala; two lecturers of the Faculty of Agriculture at the University for Development Studies (UDS), Nyankpala; and the Manager of World Vision International (WVI). This group referred to as non-farmers are specialists in agricultural practices and they also interact with farmers in rural communities in the District.

For the purpose of this study both probability and non-probability sampling techniques were used. The systematic random probability sampling technique was employed to select farmers from the six communities under study. In addition to the systematic sampling technique, the purposive non-probability sampling technique was employed to select the non-farmers who were relevant to the study. Also the quota sampling technique was used to select 25 farmers from each of the six communities.

This study used two different questionnaires to elicit data. The first questionnaire which was meant for the farmers was administered by a graduate farmer with the assistance of six research assistants. It was divided into four sections – A, B, C, and D (with both close-ended and open-ended questions) bearing in mind the objectives of the study and the variables in the conceptual framework. Section A consisted of the respondents' demographic data such as the age of respondents, educational background and length of farming. Section B dealt with access to information and good farming practices while section C delved into the availability of information for sustainable agriculture development. Section D sought opinions on the role of agricultural officers in information provision for sustainable agriculture and measures to address the issue of sustainable agricultural development in the Tolon/Kumbungu District.

The second questionnaire was administered personally by the researchers. This was administered to the non farmers deemed relevant to the study.

The Statistical Package for Social Sciences (SPSS) was used to capture and analyze data from the questionnaires. Descriptive statistics such as frequency, percentages, bar and pie charts were then used to present the results of the analysis.

### **Data Analysis and Discussion**

A response rate of 100% was achieved as all 150 copies of the questionnaire administered to farmers were returned and deemed analyzable. However, eight out of the nine copies of the questionnaire for non-farmers were returned representing a response rate of 88.8%. This is thus deemed adequate for analysis and reporting

#### **Gender of Respondent Farmers**

Out of the 150 respondents, 110 (73.3%) were males and 40 (26.7%) were females. This implies that there were only a handful of women involved in farming activities in the area surveyed. This is due to the fact that women hardly own land and most of the time they are either working on their husband's farms or are involved in selling and buying of produce from the farms as well as doing other businesses in the market. They are given a small parcel of land to farm on and as a result are not able to contribute meaningfully to agricultural development on the land.

#### **Marital Status**

The research revealed that 127 (84.7%) respondents were married while the remaining 23 (21.3%) were unmarried. This is not unusual since families spring out of marriages and labour is derived from the family as far as farming activities are concerned in the Northern Region of Ghana.

#### **Age of Respondents**

Majority of the farmers were adults and their ages ranged between 20 and 40 years. These were the active workforce and incidentally constituted 100 (66.7%) of the subjects which was an indication of the fact that farming activities were carried out by the people who were fit for it. This is a positive finding since it implies that a majority of the children are actively involved in schooling rather than working on the farms.

Only 18 (12%) respondents were between 51 and 60 years. Most farmers in this age group were too old and weak to engage in serious farming activities. Also 32 (21.3%) respondents fall between the ages of 41-50 while 54 (36%) of the respondents were between the ages of 31-40 years. Another 46 (30.7%) respondents were between the ages of 20-30 years.

#### **Household Size of Respondents**

Most of the farmers in the study area had small to medium scale family sizes. (Table 1) Farmers with family sizes of between 1-15 years were 123 (82%), whilst those with family sizes of 16 and above were 27 (18%). Large family sizes provided farmers with investable surplus and a reliable supply of low cost labour on their farms without hiring labour during planting, weeding and harvesting of produce.

**Table 1: Size of Respondents' Household**

Household Size	Frequency	Percentage (%)
1-5	40	26.7
6-10	42	28.0
11-15	41	27.3
16-20	13	8.7
21 and above	14	9.3
<b>Total</b>	<b>150</b>	<b>100</b>

*Source: Field Survey, 2010*

### **Educational Background**

There is high illiteracy rate in the study area coupled with low enrolment and high drop-out rates in school. One hundred and two (68%) respondents were illiterate while 18 (12%) had non-formal education which enabled them to express themselves a little, 17 (11.3%) respondents had primary education yet they could neither read nor write while another 10 (6.7%) had completed Junior High School and had taken to farming. Two respondents, representing 1.3% were Senior High School leavers and only one respondent, representing 0.7% was a graduate, who assisted in the administration of the questionnaire. This is an indication that farming in the area is carried out mainly by illiterate or at best primary school leavers. This may account for the high level of subsistence farming in the area.

### **Types of Crops Cultivated**

The main agricultural activity in the District is crop farming. There are three types of crops grown in the District, with cereals being the most dominant. The cereals include maize, rice, millet, sorghum and guinea corn. The legumes are groundnuts and beans and root crops are cassava and yam. The most popular crops are maize representing 86.7% and groundnuts representing 74%. The next popular crops they produce are cassava representing 54% and yam representing 53.3% respectively. The least popular crops are guinea corn, millet, and sorghum representing less than 10%. The acreage for the various crops is between two to five. This finding agrees with Adomi et al (2003) who found out that such farmers produce or cultivate what they and their families live on and not on a large commercial scale. This makes them unable to obtain enough money for the cultivation of their farmland.

### **Farming Systems Practised**

About 90 (60%) of the farmers in the area practice mixed farming, that is rearing of animals and growing of crops at the same time. Fifty-four respondents, representing (36%), cultivate only one crop. Mixed cropping and crop rotation are practiced by two farmers. No farmer in the area practices shifting cultivation because there is scarcity of farm land in the area and the farmers do not have the resources to travel to far places where they could find fertile lands for this practice.

### **Acquisition of Seeds**

The researcher sought to determine how farmers acquire seeds during the planting season. Thus, respondents were asked how they acquired seeds for planting during the farming season. Out of the total respondents, 132 (88%) said they get seeds from their harvest of the previous year since it is the practice to preserve farm produce for the next season. Respondents who acquired seeds through agricultural extension officers from the Seeds Multiplication Unit of MoFA were 12 (8%), while six (4%) others acquired seeds from friends and relatives. This shows that majority of the farmers depended on seeds of which

quality they could not be sure of, and this accounted for the low yield in crop production in the District. However, out of the eight non-farmers who responded to the questionnaire, five of them representing 62.5% said they provided farmers with seeds and three said they did not.

### **Sources of Credit for Farm Inputs**

The researcher posed a question on how farmers access credit for farm inputs for their farming activities. Responses showed that 116 (77.3%) farmers sell part of their produce and animals in order to raise money to buy inputs for their farming activities. It was also found that 19 (12.7%) respondents got assistance from non-governmental organizations (NGOs) such as Adventist Development and Relief Agency (ADRA), WVI and from the District Assembly in the form of ploughing and the distribution of fertilizers at a reduced price. Payment for such loans was made at the end of the farming season. Fifteen (10%) respondents depended on family and friends for assistance to buy chemicals to spray their farms and fertilizer.

### **Storage of Produce after Harvesting**

When a question was posed as to how farmers stored their produce after harvest, 137 (91.3%) respondents indicated that they stored their produce after harvesting in sacks for preservation until ready to sell. Thirteen (8.7%) respondents stored their produce in a hut on their farms while four (2.7%) respondents said they did not store their produce because what they produced was not enough for storage. The farmers, it appears, were very well informed about storage facilities and for that matter practiced it to the best of their ability to prevent post-harvest losses.

### **Pest Problems Encountered on Farms**

One hundred and thirty-four respondents representing 89.3% of the farmers in the area encounter pest problems on their farms while 16 (10.7%) respondents did not. Those who encountered pests indicated that they had a way of handling them because they had information on what to do to prevent pest infestation from agriculture extension officers.

### **Type of Information Farmers Need**

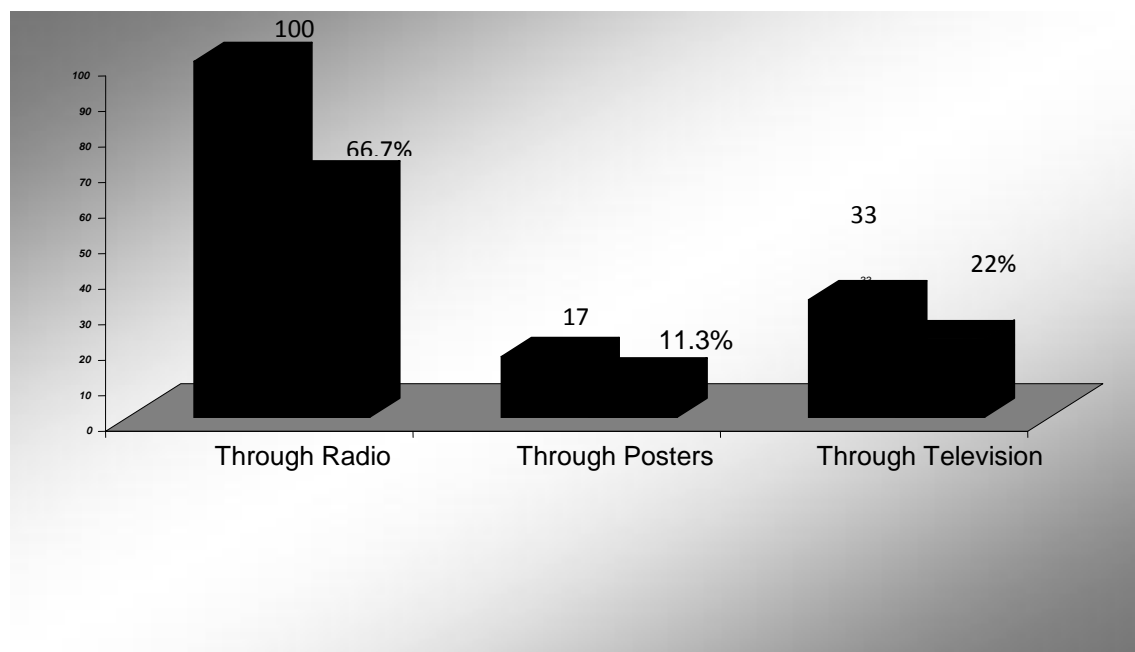
Farmers need information on credit facilities, fertilizer application and use, high yield crops, new farming techniques, weed control, disease resistant crops and food storage and processing, good farming practices and marketing to enable them solve their felt needs and goals through agriculture. Farmers also need information on climatic conditions of the region (Meitei *et. al.*, 2009). However, the findings revealed that the information farmers get on the above is inadequate due to inadequacy of extension officers who cannot visit the farming communities.

### **Methods of Information Provision to Farmers**

From figure 1, besides the extension officers, the main methods of information provision to farmers in the Tolon-Kumbungu were through radio (66.7%), posters (22%), television (11.3%), and through personal experiences of farmers. Similar studies by Atinmo *et al.* (1996) and Wagacha (2007) in Nigeria confirm that some methods of communicating information to rural farmers include media (radio and television). In this study, radio is mostly used to disseminate information extensively to farmers in the area. "Simli" radio, a local radio station disseminates information in Dagbani on agricultural practices to farmers with assistance from the Danish International Development Agency (DANIDA). This radio station is used extensively for farming activities since the medium is easily accessible.

The non-farmers who were part of this study confirmed that they disseminate information to farmers through radio, extension officers and gatekeepers (contact persons who are also farmers).

**Figure 1: Methods of Information Dissemination to Farmers**



*Source: Field Survey, 2010*

When the farmers were asked how often agricultural extension officers visited their farms, 64 (42.7%) indicated that agricultural extension officers do not pay regular visits to their farms, 58 (38.7%) said extension officers visited them once every week, while 24 (16%) said extension officers visited them twice a week. Also four respondents representing 2.7% said extension officers visited them thrice a week.

They stated that extension officers visit their farms to interact and share ideas on good farming practices/techniques and methods such as control of major pests and proper handling of insecticides.

The non-farmers confirmed that they visit farmers weekly throughout the farming season.

### **Type of Information Farmers Received**

On the type of information disseminated to farmers on sustainable agriculture and its effects on farming activities in the district, 93 (62%) respondents indicated they get information on good farming practices while 28 (18.7%) indicated they get information on credit facilities. In addition 19 (12.6%) respondents get information on how to access inputs for farming activities and 10 (6.7%) respondents get information on marketing their produce. It is evident that majority of the farmers have access to information on practices that are geared towards sustainable agriculture in the District but they are not able to access credit.

From the questionnaire administered to the non-farmers, farming practices/information technology transferred to farmers were in the areas of seeds and planting materials, soil and water management, crop protection and integrated pest management, harvesting and post-harvest management, market research and information and finally credit and investment



management. This was confirmed by the farmers in their responses to sources of information on farming practices.

According to the non-farmers, training in capacity building for farmers was organized. Some of these are in the form of farmers' field days and demonstrations MoFA, SARI, Faculty of Agriculture (UDS), WVI, ADRA and Millennium Development Authority (MiDA). Such training programmes, they indicated, have been beneficial to farmers and these enable the farmers improve their farming activities.

When farmers were asked whether they had benefited from the training programmes organized for them, 76 (50.7%) respondents who had taken part in any of the training programmes indicated it was very beneficial. Significantly 74 (49.3%) respondents had not attended any of the training programmes. The benefits derived from such training programmes include; adoption of good methods of fertilizer application to maintain the fertility of the soil, skill acquisition in the manufacture and use of compost manure, measures that prevent bush burning in the community and the adoption of coping strategies that improve yield and increase productivity.

This was confirmed by the non-farmers. Programmes such as these need to cover as many farmers as possible since their benefits could be very remarkable.

### **Means by which Information is Received**

The medium through which information was accessed by farmers on farming practices had an impact on their attitude towards innovation. The researchers wanted to know the extent to which various channels were used by the farmers in the District.

Respondents were asked how they accessed information on good farming practices. In all 76 (50.7%) indicated they listened to "Simli" radio programmes in Dagbani for forty-five minutes for most of their information on farming activities on Wednesdays which is usually sponsored by DANIDA. Another 60 (40%) respondents got information from agricultural extension officers while 14 (9.3%) farmers relied on other farmers for information for farming activities. This shows that radio plays a crucial role in disseminating information to farmers in the District.

### **Accessibility of Medium**

Access to information is one way to improve farmers' access to new production technology and increase productivity. The research revealed that 142 (94.7%) respondents indicated that accessing information on radio was easy. Only eight respondents (5.3%) said radio was not easy to access.

This indicates that majority of the farmers knew about the availability of information on pest management, credit, inputs, tractor services, storage facilities, application of fertilizer, proper ways of using chemicals on their farms and good farming practices but they could not adequately access such information. This finding is similar to Aina's (1995) view that agricultural information is available, but there is the problem of lack of access to such information.

### **Forms of Benefits**

Farmers were asked how they benefited from the training and radio programmes they have had during and before the farming season.

**Table 2: Forms of Benefits**

Form of Benefit	Frequency	Percentage (%)
Avoidance of bush burning	38	25.3
Good methods of fertilizer application	62	41.3
Use of compost manure	40	26.7
No response	10	6.7
<b>Total</b>	<b>150</b>	<b>100</b>

Source: Field Survey, 2010

Although 74 (49.3%) respondents had never attended any training programme before in the District, they had listened to radio programmes on sustainable agriculture and had benefitted immensely from it. Sixty-two (41.3%) respondents indicated that they had adopted good methods of fertilizer application to maintain the fertility of the soil (Table 2). Forty (26.7%) respondents made use of compost manure in the absence of fertilizer. Another 38 (25.3%) respondents had taken measures that prevented bush burning in the community, while 10 (6.7%) respondents did not indicate any benefits. This implies that farmers in the study communities adopted a coping strategy that will improve productivity and increase yield. This was confirmed by the non-farmers.

### Perception of Information Access on Sustainable Agriculture

There was a clear indication that 68% of the respondents said the information provided by extension officers had impacted on sustainable agriculture, on good farming methods such as erosion control by planting cover crops, controlled bush burning, pest control and appropriate use of inputs including the use of compost manure, fertilizer application, and where to market their products. The non-farmers in their response confirmed that they assist farmers by establishing demonstration farms, introducing them to organic farming and timely supply of agricultural inputs.

The various responses of farmers on how information provided by extension officers had impacted on sustainable agriculture are represented in Table 3 below:

**Table 3: Impact of Information on Sustainable Agriculture**

Impact on sustainable agriculture	Frequency	Percentage (%)
Erosion control is practiced	3	2.0
Good farming methods are practiced	33	22.0
Fertilizer application intensified	16	10.7
Controlled bush burning	12	8.0
Use of compost manure	10	6.6
Appropriate use of inputs	6	4.0
Yield improved	13	8.7
Where to market produce	9	6.0
No response	48	32.0
<b>Total</b>	<b>150</b>	<b>100</b>

Source: Field Survey, 2010

Forty eight (32%) farmers did not respond. However, 33 (22%) respondents said they practiced good farming methods, 16 (10.7%) respondents had learnt to control the use of

fertilizer on the farms as specified by the extension officers. Thirteen respondents, representing 8.7% had seen improvement in yield. Twelve respondents, representing 8% had made sure that the incidence of bush burning was controlled while 10 (6.6%) made extensive use of compost manure on their farms in place of fertilizer which was hard to get and was very costly. Nine respondents, representing 6% had access to marketing of their produce as a result of the interaction with extension officers and the regular radio programmes on agriculture. Six respondents, representing 4% made appropriate use of inputs and three respondents, representing 2% practiced controlled erosion. The implication is that the use of radio and the activities of extension officers had impacted positively on sustainable agriculture.

### Constraints to Information Dissemination

It was realized from the survey that there was the need for improvement in the way information on farming activities was communicated to farmers. Training and orientation on farming as a business as well as good farming practices should be organized on radio frequently. There is also the need to encourage the use of audio-visual aids to enable farmers understand what is being taught.

It was observed in Table 4 that the major constraints to sustainable agriculture in the District were the inadequate number of agricultural extension officers and the inadequate supply of inputs. These were followed by the illiteracy rate of farmers and the lack of credit to farmers. An interaction with the District Director, MoFA on the challenges of sustainable agriculture in the District, revealed that: ‘lack of resources, slowness in adopting new technology and refusal to change from the use of the traditional methods of farming’ were the challenges to accessing information for sustainable agriculture.

**Table 4: Constraints to Information Dissemination**

Constraints	Frequency	Percentage (%)
Illiteracy	4	44.4
Slow rate of adoption to technology	2	22.2
Inadequate logistics	2	22.2
Inadequate extension officers	3	33.3
<b>Total</b>	<b>9</b>	<b>100</b>

*Source: Field Survey, 2010*

Illiteracy was noted by four of the non farmers’ respondents representing 44% as one of the major constraints to information dissemination in the District. On the other hand two respondents representing 22.2% mentioned the slow rate of adoption to technology and inadequate logistics respectively as other impediments to information dissemination while the remaining three respondents representing 33.3% noted that inadequate extension officers as a challenge.

They non farmers further said that this problem impeded the adoption rate of new technology as the training process was usually slow with such people. Other factors that were revealed included, inadequate logistics, information flow between the meteorological service and the non farmer on rainfall patterns has not been regular, inadequate extension officers and poor road network.

## **Conclusion**

Crop farmers require information to enable them enhance their agricultural practices and improve on yield. The study identified radio as the major mode of information delivery to farmers in the District. This mode of information delivery is easily accessible to farmers.

The study also identified high illiteracy as a major factor hindering successful information dissemination to farmers in the District.

In spite of the enormous role of information in agriculture, the study revealed that though agricultural extension officers were unable to play their roles effectively due to their inadequate numbers, they play a crucial role in the provision of agricultural information to farmers in the District.

The provision of agricultural information to farmers is very strategic in the overall increase of food production; farmers generally need certain types of information to increase output. The type of information needed by farmers in the District were identified in this study to be information on credit facilities, fertilizer application and use, high yield crops, new farming techniques, weed control, disease resistant crops and food storage processing, good farming practices and marketing.

## **Recommendations**

In the light of the above findings, the following recommendations have been made:

- In order to improve on the methods of disseminating information to rural farmers, there is the need to encourage and intensify the use of radio programmes on farming practices in local languages,
- Rural crop farmers should be encouraged to enroll in adult literacy classes so that they can take advantage of agricultural information captured in print. This would go a long way to open up opportunities which will avail credit facilities, access to market which can increase productivity,
- Every village should be provided with an information unit and rural/community library well stocked with relevant, adequate and timely agricultural information materials both print and non print for consultation by rural farmers,
- Demonstration farms should be encouraged in all farming communities by agriculture extension officers. This will help farmers realize the benefits of new technology in farms, and this will encourage them to adopt new technology,
- The farmers in the District need information on credit facilities to enable them access credit to cultivate large farms. More credit should be accessible to farmers by revamping the Agricultural Development Bank and then educating farmers on how they can access loans from the bank without collateral.
- More Agricultural Extension Officers should be employed to educate and disseminate agricultural information to rural farmers in the District.

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