

**INFORMATION NEEDS OF SMALL- SCALE FARMERS IN
TANZANIA**

A Case Study of Kongwa District, Dodoma Region



Vapora

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**MA (Information Studies) Dissertation
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**INFORMATION NEEDS OF SMALL- SCALE FARMERS IN
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A Case Study of Kongwa District, Dodoma Region

By

Ronald Benard

**A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the
Degree of Master of Arts (Information Studies) of the University of Dar es salaam**

**University of Dar es Salaam
September, 2011**

CERTIFICATION

The undersigned certify that she has read and hereby recommends for the acceptance by the University of Dar es Salaam a dissertation entitled: *Information needs of Small-Scale Farmers in Tanzania: A case Study of Kongwa District, Dodoma Region* in partial fulfillment of the requirements of the Degree of Master of Arts (Information Studies) of the University of Dar es Salaam.



Prof. Alice Nkhoma- Wamuza

(Supervisor)


Date..... 26th September 2011.....

DECLARATION

AND

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I, **Ronald Benard**, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for similar or any other degree award.

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DEDICATION

This work is dedicated to my beloved parents for laying down the foundation of my education. Without their endless love, encouragement and support throughout my life, I could not have grown up to earn this great achievement.

ABSTRACT

This study was conducted in Kongwa district Dodoma region and it examined the information needs of small- scale farmers in Kongwa district. The study employed a case study research design and used a combination of methods to collect both quantitative (questionnaires) and qualitative data (Focus Group Discussions, observations, and key informant interviews). Purposive and random sampling techniques were used to select a sample of ten (10) key informants and seventy (70) farmers from two Villages that were purposively selected. Key findings revealed that farmers have a wide variety of information needs including information on diseases, pesticides and pest control, weather conditions, agricultural implements, credit and credit facilities, markets, fertilizers and information on improved seeds, agriculture vouchers, and information on crop farming. Key sources of information used by farmers are the radio, neighbours or friends, village leaders, agriculture extension officers and personal experience. The findings further revealed that small-scale farmers face many constraints, including insufficient number of extension officers, the lack of a knowledge- sharing culture, lack of information services/centres, low level of awareness information sources, time constraints, inadequate funds, the lack of timely access to current and relevant information and language barriers. The study recommends that since the information needs of small- scale farmers are not static but change from time to time, there is a need to conduct periodic needs assessments in order to meet their current information needs. The Government should also increase number of extension staff so that more farmers can be accessed by them.

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ABREVIATIONS

ACSP:	African Connection Centre for Strategic Planning
ECA:	Economic Commission for Africa
FGDs:	Focus Group Discussions
GDP:	Gross Domestic Product
IFLA:	International Federation of Library Associations
NGOs:	Non Government Organizations
SPSS:	Statistical Package for Social Sciences
URT:	United Republic of Tanzania

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter discusses the background to the study, statement of the problem, objectives of the study, research questions, significance of the study, limitations of the study, conceptual frame work and definitions of the key terms (operational definitions)

1.1 Background to the Study.

Agriculture is the backbone of Africa's economy. According to ECA (2007), about 70% of Africans and roughly 80% of the continent's poor live in rural areas and depend on agriculture for their livelihood. The sector accounts for about 20 % of Africa's GDP, 60% of its labour force and 20% of all merchandise exports .Agriculture is the main source of income for 90% of rural populations in Africa. According to the Tanzania Economic Forum (2006), the agricultural sector provides 85% of exports, employs 85% of the workforce contributes 75% of foreign exchange earnings and contributes about 25.8% to national GDP (URT, 2008).

In Tanzania, small- scale farmers dominate the agricultural sector, with farm sizes ranging between one and three hectares. Small- scale farmers comprise more than 90 percent of the farming population, while medium and large- scale farmers account for the rest (Shao, 2007 and Matovelo, 2008). Agricultural growth has varied across food

crops, cash, and livestock production. As regards food crops, maize accounts for over 20% of total agricultural GDP, followed by rice, paddy, beans, cassava, sorghum, and wheat. The most important cash crops for export are coffee, cashewnuts, cotton, tobacco, and tea (Shao, 2007).

According to Ozowa, (1995) the vital role played by scientific and technical information for agricultural and industrial development in developing countries is still neglected and accorded a lower status compared to other sectors. In addition, most smallholder growers in Africa lack access to modern processing technology and market information. As a result, farmers sell their produce at very low prices. This is the big challenge facing farmers in Tanzania (Matovelo, 2008).

Ferris (2005) argues that in most African countries lack of accurate and relevant agricultural information by small- scale farmers is a major factor constraining efforts to improve the agriculture sector. According to Meitei and Devi (2009) unmet agricultural information needs result in perpetually low agricultural production. Rural communities face widening information gaps and therefore it is difficult for them to compete in the global market (Aina, 2007). In order to deliver agricultural information effectively requires the recognition of farmers' information needs and how best to provide them with the information they need in a timely manner.

Access to the right information at the right time in the right format and from the right source may mean the difference between farmers' success or failure (Opara, 2008). Moreover, Manda (2002) argues that there is a positive relationship between increased flow of information and agricultural development. Therefore identifying the information needs for small- scale farmers in Tanzania is critical for improving agricultural production.

1.2 Problem Statement

Studies show that lack of timely access to information is a major obstacle to agricultural development (ACSP, 2002). Small- scale farmers need relevant and current information at the right time in order to increase their productivity. Mbwana, (1994) argued that information flow to farmers is an important factor in improved agricultural production and enables small- scale farmers to become aware of new ideas and practices and to choose whether to accept or reject innovations.

According to Richardson *et al.* (1998) the information needs of farmers change from time to time due to changing agricultural technologies, environmental changes, agricultural policies, and the emergence of agricultural innovations. However, few studies have been done to determine the information needs of small- scale farmers in Tanzania, specifically in Kongwa Dodoma region. Therefore, this is the gap that this study seeks to fill.

1.3 Objectives

1.3.1 General Objective

The general objective of the study was to investigate the information needs of small-scale farmers in Kongwa district in Dodoma region.

1.3.2 Specific Objectives

The specific objectives were:

1. To identify the information needs of small- scale farmers in the area of the study
2. To find out the sources of information used by small- scale farmers in the study area
3. To examine the challenges faced by small- scale farmers in meeting their information needs
4. To propose a way forward on how best to meet their information needs

1.3.3 Research Questions

The study was guided by the following broad research questions:

1. What are the information needs of small- scale farmers in the study area?
2. What sources of information are used by small- scale farmers in study area?
3. What challenges do small- scale farmers face in meeting their information needs?
4. How can the information needs of small scale farmers in Kongwa be met?

1.4 Significance and Limitation of the Study

1.4.1 Significance of the Study

The findings of this study will be a basis for influencing policy makers to develop agriculture policies and information systems that focus on the needs of small- scale farmers to improve their productivity. Also the findings will contribute to a better understanding of the information needs of small- scale farmers in Tanzania. The research will also create awareness of the problems facing small- scale farmers in accessing agricultural information and the recommended solutions to the problems. In addition the findings of this study will also contribute to literature on the topic.

1.4.2 Limitation of the Study

The major limitations of this study were financial and time constraints. Therefore the study covered only two wards, namely Mlali and Mkoka, and focused on the information needs of small- scale crop farmers.

1.5 Operational Definitions of Key Terms

1.5.1 Information

According to Marchinion (1995), information can be defined as anything that can change a person's level of knowledge. This study will adopt this definition. Also Chaila

(2001: 61) defines information as a meaningful message transmitted from a source to a user for the purpose of imparting new knowledge to the user.

1.5.2 Information Needs

According to Devadson and Lingam (1996), information needs represent gaps in the current knowledge of the user. In day- to- day work lack of self- sufficiency constitutes an information need. For the purpose of this study gaps in the current knowledge of small- scale farmers constitute information needs. Dulle (1997) defines information needs as the knowledge gap which needs to be filled in order to carry out a certain task.

1.5.3 Agriculture

For the purpose of this study, agriculture is defined as the cultivation of crops for food or export.

1.5.4 Sources of Information

Sources of information are where the information originates and include formal and informal sources, electronic, print, oral, audio and video sources, etc (Ruzegea, 2002). This definition will apply in this study.

1.5.5 Small- Scale Farmers

Small- scale farmers are mainly involved in subsistence agricultural production on a piece of land ranging from 1-3 hectares (URT, 2008). Small- scale farmers rely on agricultural products for their basic survival in terms of food and income generation. This definition will apply.

1.5.6 Information- Seeking Behaviour

Information seeking is the purposive searching for information as a consequence of the need to satisfy some goal (Devadson and Lingam, 1996). In this study information seeking means the process of identifying relevant information sources and accessing information to meet one's information needs.

1.5.7 Crop Farming

For the purpose of this study, crop farming is the practice of cultivating various crops for food or for income generation.

1.5.8 Agricultural Information

In this study agricultural information is defined as all published or unpublished material on all aspects of agriculture.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section presents the reviewed literature on the topic. The literature review is organized around broad themes and covers the following; role of information in agriculture, information needs, information sources, barriers to accessing information and the research gap.

2.1 Role of Information in Agriculture

Information has consistently been a significant element in the development of human society and has shaped over a long period of time the way in which we think and act (Meyer, 2005). It is an ingredient of man's life cycle, such that there is no life in modern society without information (Idiegbeyan-ose Jerome and Theresa, 2009). Human beings always find themselves in situations that demand information in order to function effectively. These situations may include, among other things, answering questions to solve a problem or understanding something in order to handle a given situation. By the same token, information enables farmers to make informed decisions regarding production and marketing and managing their lives successfully to cope with everyday problems and to realize their opportunities (Matovelo, 2008) and (Idiegbeyan-ose Jerome

and Theresa, 2009). Also Ochieng (1999) asserts that access to information is a vital tool for empowering individuals to make informed decisions or take action for themselves or for community development. According to Durutan (1999), agricultural producers already know that information is important and valuable and all they need is its timely accessibility in order to improve agricultural production.

Ferris, (2005) stresses that access to accurate, timely and appropriate information enables farmers to make better decisions about what to produce, when to produce and where to sell it than those who do not have such information. Lesaoanana-Tshabalala (2001) and Kamba (2009), argue that information is a powerful tool in addressing the various agricultural needs of small- scale farmers and if it were used appropriately it could change a nation's economy. Similarly, Byamugisha et al., (2008), note that the potential benefits of using current agricultural information are an improvement in farming techniques and knowledge of when to use manure or fertilizer, what crops to plant, and how to treat animal diseases. According to Ozowa, (1995) information is an essential ingredient in agricultural development programmes. However, African farmers seldom feel the impact of agricultural innovations either because they have no access to relevant vital information or because it is poorly disseminated.

2.2 Information Needs of Small- Scale Farmers

According to Devadson and Lingam (1996), information needs represent gaps in the current knowledge of the user. In day to day work; lack of self sufficiency constitutes an information need. Information needs are thus a factor that may drive small- scale farmers to seek information to fill the gaps in their information and knowledge.

However, the level of information needs may differ between people, or a group of people, depending on a variety of factors, such as level of education, age, socio-economic status, level of awareness, acquaintance with, and ease of use of information (Kaniki, 2003). These information needs can be recognized by the information seeker (farmer) him/herself or by information experts on behalf of the information seeker. Identifying of information needs is essential to the design of better information systems and the provision of effective information services (Kainiki, 2003). Furthermore, Dulle and Aina (1999) argue that in order to provide appropriate and relevant information to farmers, it is necessary to identify their information needs.

Meitei and Devi (2009) placed the information needs of farmers in six categories, namely;

- **Field acquisition:** Farmers want to know about the different types of schemes and subsidies available and the purchasing of agricultural land.

- Agricultural inputs: Farmers need information about improved varieties of seeds, as well as pesticides, agricultural implements, weather conditions, harvest and post- harvest technology, etc.
- Agricultural technology: Farmers should be fed with information about innovative technology suitable for their farming activities.
- Access to credit: Farmers need information about credit facilities, terms of loans. etc
- Agricultural marketing: Farmers need information about marketing trends, the price of different varieties of crops and fertilizer.
- Food technology: Farmers need information about post- harvest food technologies to get optimum benefit from their crops.

The findings by Momudu, (2002), Sabo (2007) Meitei and Devi (2009), revealed that the agricultural information needs of small- scale farmers vary and range from where to purchase fertilizers and how to apply it, to information on improved varieties, livestock breeds, pesticides, storage, market situations, weed control, moisture insufficiency, soil fertility, soil erosion, disease control, time for planting materials, new crop system and credit. Studies conducted by Muyepa (2002) in Malawi found that the information needs of farmers ranged from irrigation development and agricultural produce updates to weather forecasts, etc.

A study by Okwu and Umoru (2009) on women farmers' agricultural information needs and accessibility conducted in Benue state in Nigeria revealed that their information needs focused on pesticide application (67.7%), fertilizer application (64.6%), improved farm implements and improved variety of crops (47.7%), better marketing systems and outlets and improved storage systems. Lwoga (2009) found that in Tanzania 66.3% of the small- scale farmers interviewed needed information on controlling plant diseases and pests, 59.1% on marketing, 58.6% on credit facilities, 54.7% on control of animal diseases and 29.3% on irrigation practices. However, Ozowa (1995) argues that information needs of farmers vary, given new and complex problems farmers face every day.

2.3 Sources of Agricultural Information for Small- Scale Farmers

Sources of information are tools that can meet the information needs of different categories of users. The choice of an information source depends on a number of factors, such as farm size, age, and geographical location, level of income and level of education (Riesenberg, and Gor 1999). Information only becomes useful if it is relevant, timely, and appropriate and so the channel through which information is transmitted must be appropriate, perceivable, and affordable to the user (Ochieng, 1999)

According to Ozowa (1995), agricultural innovations can change agricultural production if they reach the farmers. Unfortunately, information, particularly concerning the use of

technology, has not been successfully disseminated in most developing countries. Some private or government institutions and agencies have developed a variety of services that facilitate the dissemination of agricultural information. Momodu (2002) found that the sources of information for rural communities in Nigeria were the government, the radio, television, newspapers, extension workers and agents of all types. Further studies by Bozi and Ozcatalbas (2010) found that family members, neighbor farmer, extension services, input providers and mass media are key sources of information for Turkish farmers. Some of the information sources used are explained in detail below.

2.3.1 Farmers Groups

These are groups which are normally made up of people with different levels of education, ie. from illiterate to literate people and economic and social status (Omosa, 1998). According to Swai (1998), the advantage of farmers groups is that more farmers are reached at less cost, there is a more effective learning environment when people with similar interests are involved in a group, there is more acceptance of agricultural technologies when decisions are taken in a group and there is commitment to decisions taken jointly. Another advantage is that members of a group can easily share their experiences with each other, hence improving their production. Davis (2004) noted that farmers groups are believed to extend the use of technology faster than individual farmers. On the basis of a survey carried out on information utilization among rural fish farmers in Nigeria by Ofuoku *et al.* (2008), it was noted that 86%, 70%, 70% of fish

farmers get information on fish farming through farmers groups, other farmers, and NGOs, respectively. A study by Davis (2004) reported that farmer groups in Kenya have proved to be a useful way of reaching a community and of extending knowledge to other farmers. In Tanzania where there are numerous peasants doing different activities the use of farmers group becomes a matter of necessity.

2.3.2 Extension Services

Extension services have been defined as the communication of improved skills, practices, innovations, technologies and knowledge to farmers (Ani, 2009). This implies that extension services is a service which helps people, particularly farmers, by educating them about and promoting farming practices and techniques that will increase their production and make it more efficient. Pangan(2007) found that agricultural extension officers help farmers increase the productivity of their farms and improve their living standards. These officers have many roles as advisers, technicians and middlemen operating between agricultural research institutions and farm families. They help farmers identify their problems and find their own solutions. Ozowa, (1995) found that, of all the existing channels of agricultural communication, Nigerian farmers rank extension services the highest in terms of providing credible information and advice, especially on agricultural technology. A further study by Daudu (2009) in Nigeria revealed that extension services are still the most preferred sources of agricultural information available. In Tanzania, extension services are the primary means by which the government channels information to farmers in an effort to increase agricultural production (Wambura, 1992).

However, Aina (2006) revealed that the ratio of extension workers to farmers in Africa is low. Thus many farmers are not supplied with information by extension workers in Africa. Studies conducted in Tanzania by Mattee (1989) revealed that the involvement of farmers in extension activities is low to the extent that 60.3% had never attended extension meetings, 58.7% had never participated in a field day, 52% had never listened to a radio extension programme, 46.45% had never been visited by an extension worker and 69% had never read extension pamphlets or bulletins. Also a study conducted in Zambia by Kalusopa, (2005) revealed that the most important sources of information for small- scale farmers are N G Os, information centres and to so a lesser extent from government extension services. This implies that farmers seldom use extension services as a source of agricultural information in solving their day –to- day agricultural problems.

2.3.3 Radio

Radio is one of the mass media through which farmers can get agricultural information. It is an effective medium that can be used to reach masses of rural farmers irrespective of age and the level of literacy (Tire, 2006). When used effectively, radio can provide general information about agriculture quickly and accurately to a large number of farmers and create awareness of extension production recommendations (Ozowa, 1995). Furthermore, Majed (1990), writing on the use of appropriate media in the dissemination of information for rural areas, reported that the radio stimulates learner participation, it

provides a sense of immediacy, and communicates quickly and cheaply in various languages. This implies that the radio can be used to communicate agricultural information to farmers in any language which farmers can easily understand.

Munyua, (2000) revealed that the radio has proved to be appropriate and very effective in most rural areas where the telecommunications infrastructure is inadequate or lacking. A study by Devi and Meite (2009) found that the majority of small- scale farmers in India use the radio for most sources of agricultural information .Also a study by Olade (2006) in Nigeria revealed that the radio is one of the traditional media that is used to disseminate agricultural information to farmers in areas where there is poor communications infrastructure. Since the 1960s, radio programme in Tanzania have been playing a key role in information dissemination. However, many farmers cannot afford to buy a radio in Tanzania, because they are too expensive and also during planting and harvesting time, many of them are too busy to listen to the radio (Mbwana, 1994). Also other problems noted with respect to radio broadcast information include uncertain reliability (few broadcasts use professional agricultural staff), difficulties in knowing when agricultural broadcasts will occur, and the choice of agricultural issues to be discussed , which are often made in accordance with sponsors' interests rather than users' needs (farmers' needs).

2.3.4 Television

Television, as one of the mass media, can be used for disseminating information, making use of a variety of techniques, ranging from lectures, and demonstrations to panel discussions, interviews and dramatizations (Majed, 1990). It is well known that television gives quick, reliable and attractive information regarding various activities relating to agriculture (Halakatti *et al.* 2010). Apart from that both the listening and seeing senses are involved in television. Television provides information in a more convincing manner so that most of the observed information is adopted. A study in China by (Yu, 2010) showed that a large majority i.e. about 90 percent, of the farmers interviewed obtained information from the television. Furthermore a study by Halakatti *et al.* (2010) in India found that highest percent of agricultural information was obtained from the television.

However, a study by Omosa (1998) in Kenya showed that television ownership and use in rural areas is quite low and cannot be relied on to pass on information in rural areas. Also Kiondo, (1998) stated that the low level of access to television as a source of information is a feature common to most developing countries

2.3.5 Printed Materials

This covers written words in the form of leaflets, books, brochures, posters, journals, newsletters, newspapers, magazines, bulletin boards, etc. Printing helps preserve the

technologies in the shape of books, booklets, brochures, newspapers, and magazines (Irfan *et al.* 2006). As cited by David and Cobbah (2008), Moris, (2001), printed materials such as leaflets, magazines and brochures have several advantages, namely, the low cost of production, their portability, and the ability to be a constant point of reference, thereby improving information retention, precision of expression, technical accuracy and credibility, as people tend to trust printed materials more. With printed materials information is permanent and sustainable, easily accessible, and easily duplicated and distributed (Wesseler and Brinkman 2002). Their effectiveness depends upon the extent of literacy and the communicative nature of the people. In areas of high literacy printed materials are very effective if certain preconditions, including a good level of education among the farmers, are met (Wambura, 1992).

For instance, a study by Hassan *et al.* (2010) in Malaysia revealed that farmers relied more on printed materials, such as brochures and pamphlets, in getting agricultural information than other sources. This means that the use of printed materials in those areas presumes a high level of literacy and their availability as well as affordability. In Nigeria, however, the use of printed materials has not been effective in imparting agricultural information to rural farmers because such message carriers are of limited use in reaching illiterate farmers because the technical language used in communicating information is incomprehensible to the farmers (Ozowa, 1995). In Tanzania, a study by Lwoga (2009) revealed that very few farmers made use of printed materials, such as leaflets, posters, books and newsletters, in accessing agricultural information. This can be due to the language used, their availability as well as affordability.

2.3.6 Farm Demonstration

This is the mostly widely used technique for imparting farm information (Nmtambo, (2007). According to Wambura (1992), the demonstration can be educational in practical and experimental ways, because farmers visualize new tasks, such as how to apply fertilizers, timely planting, protection operations and so on, and then later review progress on the local plot. Farm demonstrations help farmers to observe, hear and learn by doing. As cited by Mntambo(2007), Van de Ban and Hawkins, (1996) pointed out that in countries where the mass media play a limited role because of illiteracy or limited access to media outlets, demonstrations are very important for making people aware of innovations. A survey carried out by Riesenberg (1999) on farmers' preferences for methods of receiving information on innovative farming practices in Nigeria, rated on farm demonstrations (54.3%) as the most preferred method. However, studies show that even where demonstrations are used, they seem not to have succeeded in convincing farmers because extension workers have failed to secure and use the necessary inputs due to economic hardship (Ozowa, 1995).

2.3.7 Farmer –to- Farmer Contacts

Farmer- to- farmer contacts enable farmers to exchange news and adopt new technology, especially from experienced fellow farmers (Nmtambo, 2007). According to Muhammad and Garforth (1999), the mode of information flow from farmer to farmer can be through observation or dialogue. A study by Shama *et al.* (2008) revealed that neighbours, friends, progressive farmers, and opinion leaders were the sources widely used by

farmers in India. The study by Mbwana (1994) asserted that in Tanzania villages, farmer- to- farmer contacts have served as an instrument for diffusing technological knowledge.

Therefore, since each farmer prefers certain information sources or channels over others, it is important to do a thorough study before opting for an information source or channel.

2.4 Barriers to Information Access

Several barriers to information access affecting small- scale farmers have been identified. For example, Obadiah et al. (2008) and Momudu, (2002), found that the major barriers to obtaining information were lack of funds to obtain the necessary information for agricultural productivity, outdated information and the poor format of the information, which hinders its usability by farmers, and illiteracy, and making it difficult for them to understand the information because it is often in English. This implies that only those who can read English can access and use the information.

Also Aina, (1990) pointed out that the factors hindering the flow of agricultural information to farmers in Africa include the low literacy level of farmers, the limited number of radios and television sets and the inadequate number of personnel trained in agricultural information . Furthermore a study by Ogboma (2010) identified some of the problems encountered by farmers in Nigeria in accessing agricultural information. These include the lack of relevant materials in agricultural offices and libraries in the area, the lack of use of mass media and unreliable supply of electricity.

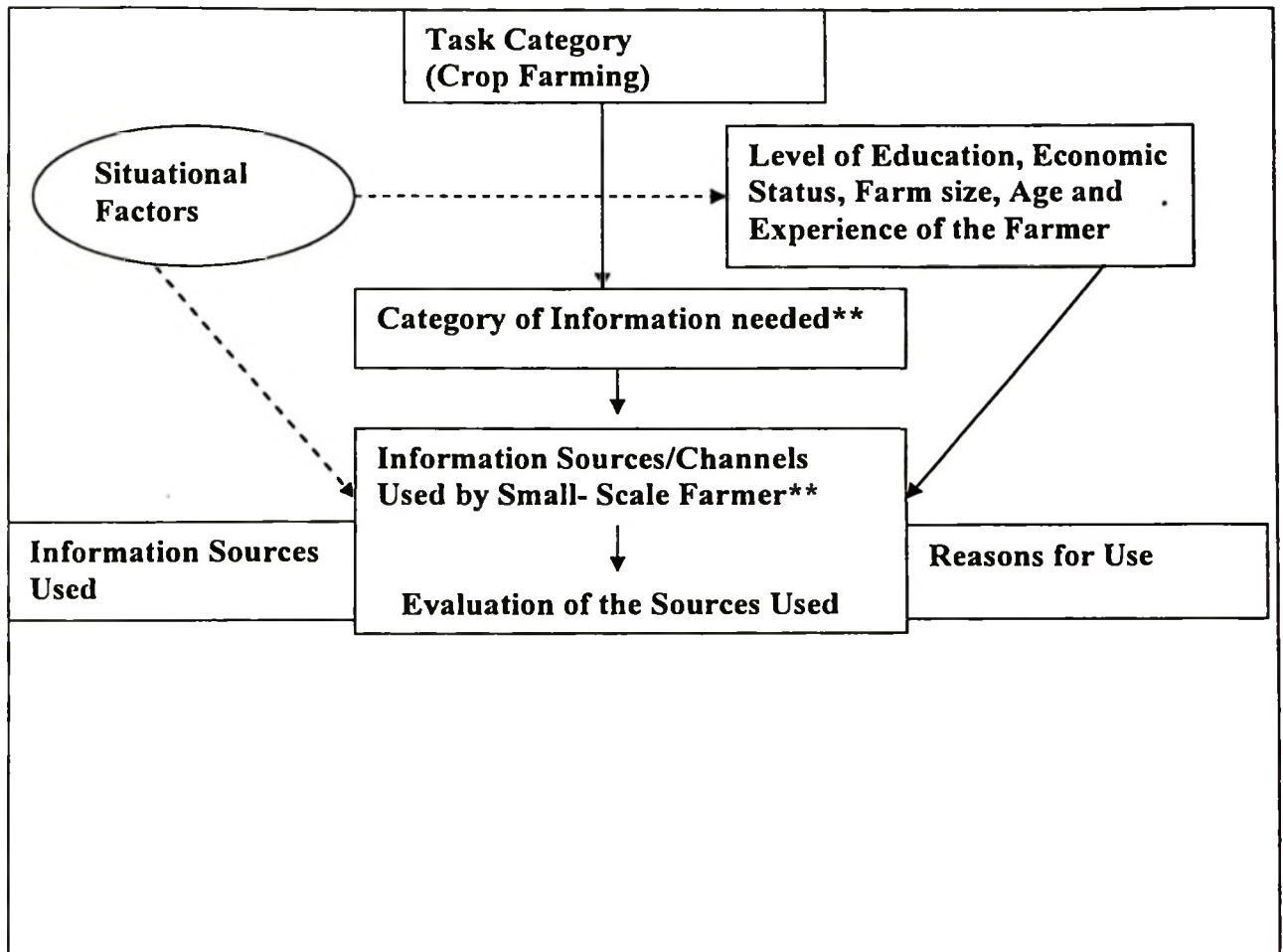
Byamugisha et al., (2008), found that the problems encountered by farmers in Uganda when searching for agricultural information were lack of cooperation from fellow farmers in sharing agricultural information and language barriers. A survey carried out by Lwoga (2009) on the application of knowledge management approaches and the use of Information and Communications Technologies to manage indigenous knowledge in the agricultural sector in Tanzania found out that the problems facing small- scale farmers in accessing agricultural information include the unavailability of public extension officers, which means that most of the communities that she had surveyed had only a few extension officers who are not easily able to solve their problems. Another challenge was the lack of awareness of information sources and the distant location for consultations with extension officers. In his review of issues relating to community information, Bunch (1987) as quoted by Chaila (2001), identifies three factors affecting access to information. These can broadly be described as:-

- Lack of publicity; most of the time users lack awareness of information which is likely to help them.
- Inappropriate communication channels or in other words presenting information to users in forms they cannot understand.
- Location and mobility; the problem of access caused by geographical location or individual mobility. This is generally true for people living in remote rural villages and nomadic people.

2.5 Conceptual Framework

Based on the specific objectives of this study, a modified Bystrom and Javelin's (1995) conceptual framework was adopted for this study, because it shows the relationship between task category, the category of information needed and the sources of information consulted. The task category in this study is crop farming. Task category influences the type or category of information needed by the small scale- farmers. The category of information needed in turn determines the sources of information that the small- scale farmers consult. Included in the framework are situational factors (the level of education, economic status, age, farm size, and experience of the farmer). These are situational since they change and differ from one farmer to another. Additionally the situation factor strengthens the farmers' ability to identify the types and sources of information needed. The evaluation of sources to be used is based on the reason for using the information and the type of information sources relevant to the information needed.

Figure 1: A Modified Bystrom and Jarvelin Conceptual Framework



. Source: Bystrom and Jarvelin (1995)

** Indicates main area of focus in this study

2.6 Research Gap.

The reviewed literature revealed that although the information needs of various categories of farmers have been studied, the information needs of small-scale farmers,

especially in Kongwa, Dodoma Tanzania, have not been adequately addressed. This is the gap that this study intends to fill.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

Research methodology refers to a systematic way of solving problems (Kothari, 1999). This section describes the elements of the methodology used in conducting the study. These elements include the research design, study area and justification, population, sample size and sampling techniques, data collection methods and instruments, and data analysis.

3.1 Research Design.

A research design is a general plan for the collection, measurement and analysis of data with the central goal of solving a given research problem (Tripath, 1999). To attain the main purpose and objectives of the study, a case study research design was opted for, which used a combination of methods to collect both quantitative and qualitative data, with the research methods of focus group discussion, questionnaires, observation, and interview being used.

3.2 Study Area

The study was conducted in Kongwa district, in Dodoma Region. Kongwa district was selected because it is one of the main producers of agriculture produce in Dodoma Region. Also, the researcher is familiar with the region.

3.3 Study Population.

Population refers to individuals that have one or more characteristics in common that are of interest to the researcher (Kombo and Trump, 2006). A population targeted for a specific study shares a number of common features. In this study, the population was drawn from residents of Kongwa district and included small- scale crop farmers and key informants (agriculture extension officers, village leaders, influential farmers). These were selected because they are knowledgeable and have a lot of experience and some disseminate information to farmers.

3.4 Sample and Sampling Techniques

A sample is a subset of the cases selected from a population (Singleton, 1993). It is a subset of the population which is a full set of the elements or people or whatever you are sampling (Johnson and Christensen, 2004). Sampling techniques are the methods used to select a sample to be studied in a given population. According to Krishnaswami (2002), random and non- random sampling methods are the major sampling techniques in social science research. In this study, both random and non random sampling techniques were

used to select respondents (small- scale farmers), and key informants, wards and villages respectively.

3.4.1 Non- Random Sampling

Non- random sampling is purposive in nature; John and Christensen (2004) argue that non- random sampling relies on the decision of the researcher, based on some well known criteria. In this study, purposive sampling was used to select key informants (agriculture extension officers, village leaders, and influential farmers) and the wards and villages to be included in the study area. Ten key informants were selected, as follows: 6 village leaders, 2 agricultural extension officers and 2 influential farmers. The two wards were also selected purposively, namely Mlali and Mkoka. In each ward, one village was selected purposively making a total of two study villages, which were, Mlali- iyegu and Mkoka.

3.4.2 Simple Random Sampling

Simple random sampling was used because it gives each case in the population an equal chance of being included in the sample (Singleton, 1993). According to Krishnaswami (2002), simple random sampling is used when the population is a homogeneous group with specified characteristics. This sampling technique was used to select respondents (small- scale farmers) from each of the selected villages.

3.4.3 Sampling Frame and Sample Size

The sample frame consisted of 22,021 people living in the 2 villages selected by the study. There were 9,109 people living in Mlali and 12,912 people living in Mkoka. Thus 35 respondents were randomly selected from each village and 10 key informants were purposive selected as follows; 3 village leaders, 1 extension officer, and 1 influential farmer, making a total sample size of 80 respondents. Saunders et al., (2007) argue that a sample size of 30 or more will usually result in a sampling distribution that is very close to the normal distribution and the larger the absolute size of a sample, the closer its distribution will be to the normal distribution.

3.5 Methods of Data Collection

Both secondary and primary data were collected for this study.

3.5.1 Secondary Data

According to Krishnaswami (2002), secondary data can be defined as data which has been collected and compiled for another purpose. It consists of not only published records and reports but also unpublished records. In this study, secondary data was collected from books, journals, government reports, dissertations, various reviewed reports, newspapers and online sources.

3.5.2 Primary Data

Primary data is original data which the researcher directly collects that has not been collected previously (Krishnaswami 2002). Therefore in this study, primary data was gathered from selected respondents, using the following methods.

3.5.2.1 Questionnaire

The questionnaire was the main data collection instrument, and was administered to seventy respondents using face- to -face interviews. It was a structured and standardized questionnaire with closed and open- ended questions. A major advantage of face- to- face interviews is that they allow the researcher to probe and clarify issues on the spot (Walliman, 2006).

3.5.2.2 Key Informant Interviews

An interview is a two- way systematic conversation between an investigator and an informant, initiated for obtaining information that is relevant to a specific study (Krishnaswami, 2002). One advantage of the interview is that detailed and in-depth information can be obtained. The researcher conducted in-depth interviews with 10 key informants (2 agriculture extension officers, 3 village leaders and 2 influential farmers) in order to capture any additional information to complement the questionnaire. The researcher prepared a checklist of questions for key informants to capture any additional information and fill in the gaps left by the questionnaires. See appendix 3

3.5.2.3 Focus Group Discussions

Two Focus Group Discussions (FGDs) were also conducted to enable the researcher to get more information quickly and to identify and explore beliefs, ideas, or opinions on the research topic and to validate information obtained from the interviews. In this case two FGDs were conducted, with 6 respondents from each village being selected. The participants of the FGDs consisted of men and women. A FGDs guide with a list of questions was prepared in order to guide them. (Appendix 2)

3.5.2.4 Observations

A checklist of things to be observed was prepared and used by the researcher during observation. (Appendix 4). According to Krishnaswami (2002), observation is a systematic viewing of a specific phenomenon in its proper setting for the specific purpose of gathering data for a particular study. This method enables a researcher to study and record facts, conditions, events, activities and behaviors through looking rather than asking. In this case, the researcher observed the communication channels used by small- scale farmers, their information- seeking patterns, the types of information sources used e.g. the availability of extension officers, the presence of a village information centre, internet availability, and the availability and use of printed agricultural materials, etc.

3.6 Data Analysis

The collected data was organized, described, coded and analyzed both quantitatively and qualitatively and the findings presented in tables and figures. The Statistical Package for Social Sciences (SPSS) was used to derive percentages and frequencies.

3.7 Data Quality Control

Data quality control was crucial in order to ensure the reliability, validity and objectivity of this study. To achieve this, the following was done.

3.7.1 Pre-testing of the Research Instruments

To ensure that there were no inconsistencies or misinterpretation of the questions, a pre-test was conducted on 12 small- scale farmers in Kongwa district, which was not part of the study area, after which the questions were re-phrased or corrected where necessary, in order to make them clearer to the respondents. Also this ensured that the data obtained is of good quality and free from errors.

3.7.2 Triangulation

Triangulation is the process whereby the combination of more than one method of data collection is used to collect the data (Newman, 2000). It serves as a means of confirming

the measures and validating the findings. Therefore questionnaires, FGDs, interviews supplemented by observations were used.

3.7.3 Ethical Issues

Before administering the questionnaire, the respondents were informed about the purpose of the study and assured that confidentiality would be maintained and that the information collected would be used only for academic purposes.

3.7.4 Rigour

The study was rigorously and seriously conducted to ensure the correctness and accuracy of the data collected, and follow-ups were also made to ensure a high response rate.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the study and the discussion, which are based on the objectives and research question of the study.

4.2 The Demographic Information of the Respondents

The demographic information of the respondents was the personal information of the respondents which includes their sex, age, and marital status, educational level, farming experience, income level, size of land owned and types of crops grown.

4.2.1 Sex of Respondents

Table 1: Sex of the Respondents

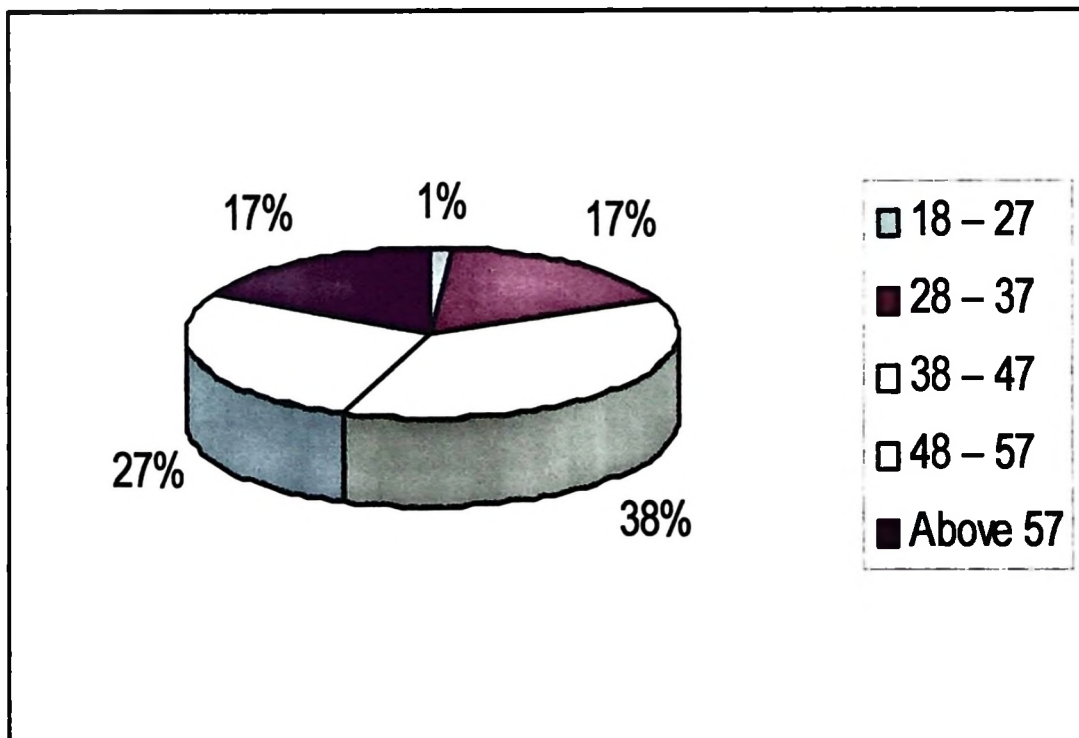
Total Sample N=70	Category	Frequency	Percent
	Male	38	54.3
	Female	32	45.7
	Total	70	100.0

Source: Field Data 2010

Table 1 above summarises the respondents involved in the study. A total of 70 respondents were involved in the study. The study involved both male and female respondents. The majority, 54.3% were males and 45.7% were females. The percentage variation in the sex of the respondents is explained by the availability of respondents in their houses it was identified that most females were attending to farming activities when this study was being conducted.

4.2.2 Age of Respondents

Figure 2: Distribution of Respondents by Age



Source: Field Data 2010

Figure 2 above shows the age of the respondents involved in the study. The findings show that 38% of the respondents were in the 38 to 47 age group; 27% of them were in the 48 to 57 age group; and 17% were those aged over 57 years of age. It was also found that 17% and 1% of the respondents were in the 28 to 37 and in the 18 to 27 age group, respectively. This implies that the majority of farmers interviewed were in the active age group. Age is known to influence attitudinal change and level of adoption of an innovation.

4.2.3 Marital Status of Respondents

Table 2: Distribution of Respondents Based on Marital Status

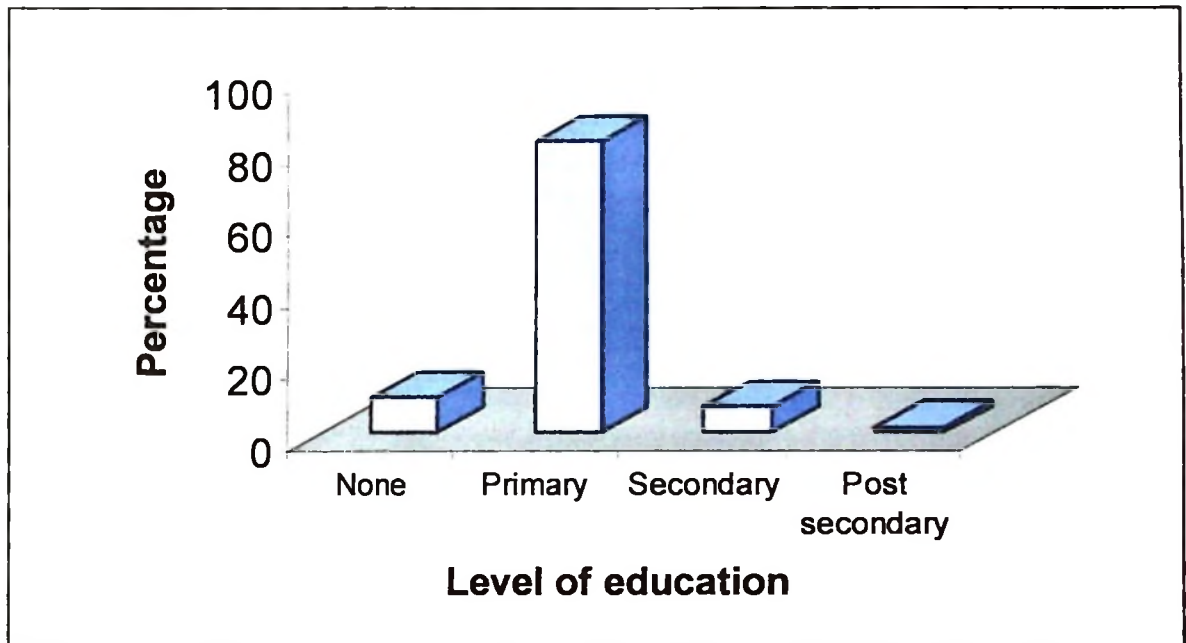
Total sample N= 70	Marital status	Frequency	Percent
	Single	4	5.7
	Married	53	75.7
	Separated	7	10.0
	Widowed/widower	6	8.6
	Total	70	100.0

Source: Field Data 2010

The respondents were asked to state whether they were single, married, separated or widowed. Table 2 above shows that the majority of the respondents, 75.7%, were married, 10% were separated, 8.6 % were widowed and 5.7% of them were single. The high percentage of respondents who were married implies that the society is a stable one. Stable families can concentrate more on production than unstable ones and thus may influence efficiency in production.

4.2.4 Level of Education

Figure 3: Distribution of Respondents by Educational Level



Source: Field data 2010

Figure 3 above shows the respondents' levels of education. The findings show that the majority of the respondents (81.4%) had completed primary level of education, 10% of them had not attended school at all, while 7.1% had received secondary education. It was found that only 1.4% of the respondents had received post- secondary education. Their level of education influences how farmers work. Their level of education affects information accessibility, comprehension and adoption of modern agricultural practices (Aina and Dulle, 1999). Well educated farmers can easily access information from various sources, create knowledge out of the accessed information and use the various information services for better agricultural practices.

4.2.5 Size of Land Ownership

The respondents were asked about the size of the land they own for their farming activities. The results are summarized in Table 3 below.

Table 3: Distribution of Respondents by Farm Size

Total sample N= 70	Size of the farm category	Frequency	Percent
	Below 3	21	30.0
	4 – 6	30	42.9
	Above 6	19	27.1
	Total	70	100.0

Source: Field data 2010

The findings show that 30 respondents (42.9%) owned between 4 and 6 acres of land, 21 (30%) of them had below 3 acres, while 19 (27.1%) had more than 6 acres of land for farming. Agricultural production in Tanzania and Africa as a whole is dominated by small- scale and subsistence agriculture. A study by Idiegbeyan-ose Jerome and Theresa (2009) show that agriculture in Africa is basically subsistence in nature, where farmers have small pieces of land for farming and these farms are used for producing food for their households with very little remaining for sale.

4.2.6 Farmers' Experience of Crop Farming

Table 4: Distribution of Respondents by Farming Experience

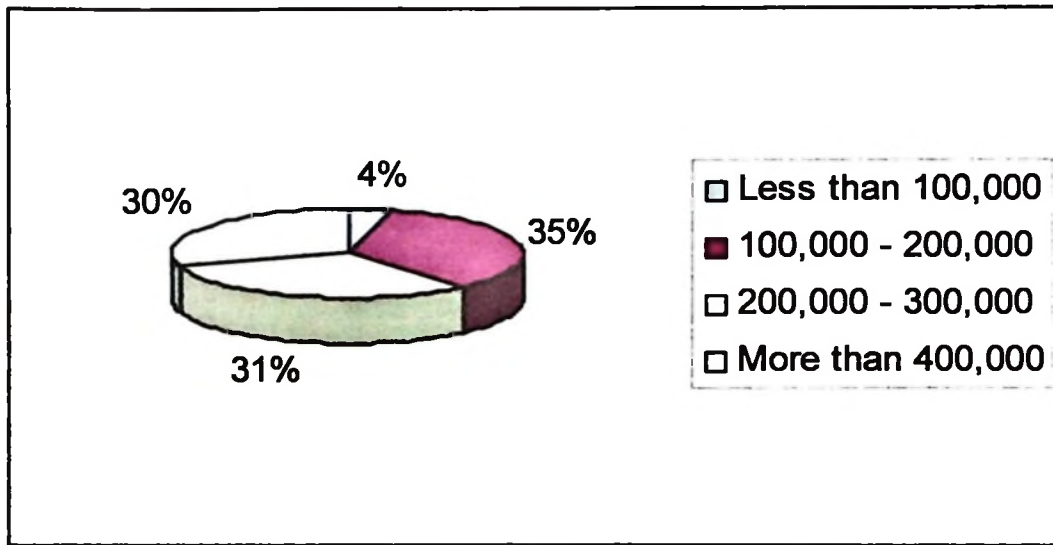
Total Sample N= 70	Farming Experience	Frequency	Percent
	Below 5	1	1.4
	5-10	4	5.7
	10-15	10	14.3
	Above 15	55	78.6
	Total	70	100.0

Source: Field Data 2010

The farmers were asked about their experience in farming activities. The question was asked in order to find out farmers' experience of crop farming and to associate farming experience with level of use of agricultural information and sources of information. The findings are summarized in Table 4 above. It was found that 55 (78.6%) have engaged in farming for more than 15 years, 10 (14.3%) of them had 10 to 15 years experience, 4 (5.7%) of them had 5 to 10 years experience, while only 1 (1.4%) respondent had less than 5 years experience. One's involvement in farming activities for many years influences how agricultural information will be accessed and used. Various scholars including Schnitkey *et al.* (1992) report that farmers with more experience have less demand for external information on both production and marketing.

4.2.7 Income Level of Respondents Per Annum

Figure 4: Distribution of Respondents by Annual Income



Source: Field Data 2010

Figure 4 above shows the annual income distribution of respondents in the study area. The findings show that 4.3% of the respondents earned TZS 100,000/=. It was also found that 24 (34.3%) respondents earned between TZS 100,000/= and 200,000/=: 22 (31.4%) of them earned between TZS 200,000/= and 300,000/=: and 30% of the respondents earned more than TZS 400,000/= annually.

Generally, the respondents' annual income is relatively low. Limited access to agricultural information services partly accounts for the problem.

4.2.8 Crops Grown

The farmers in the study area grew ten main types of crops, including maize, sunflower, bambaranuts, groundnuts, cassava, sorghum, beans, millet, pigeon peas, and sweet potatoes.

Table 5: Distribution of Respondents by Crops Cultivated

Total sample N= 70	Category	Frequency	Percent
	Sweet potatoes	7	10.0
	Millet	16	22.9
	Sorghum	30	42.9
	Maize	70	100.0
	Beans	26	37.1
	Bamabara nuts	56	80.0
	Sunflower	68	97.1
	Groundnuts	56	80.0
	Cassava	42	60.0
	Pigeon peas	14	20.0

Source: Field data 2010

Table 5 above shows the distribution of respondents by crops grown in the study area. The findings show that maize was the main crop grown in the study area, as it is grown by all the respondents. It is the staple food, and each household must have a plot of maize for either consumption or sale.

The respondents produced other crops; it was seen that 80% cultivated sunflower, bambaranuts and groundnuts, 60% grew cassava and 42.9% planted sorghum. The

findings also show that 37.1% grew beans, 22.9% cultivated millet, 20% grew pigeon peas while only 10% produced sweet potatoes. These findings are supported by Shao (2007), who reports that most farmers in Tanzania grow maize.

4.3 Information Needs of Small- Scale Farmers

Before asking the farmers to identify their information needs, they were asked if they need information to support their farming activities.

Table 6: Information Needed to Improve their Farming Activities

Total sample N= 70	Category	Frequency	Percent
	Information on market situation	56	80.0
Information on weather conditions	61	87.1	
Information on agricultural credit	59	84.3	
Information on how to use fertilizers	52	74.3	
Information on pesticides availability and its application	60	85.7	
Information on weed control	19	27.1	
Information on diseases and pest control	62	88.6	
Information on soil fertility	19	27.1	
Information on fertilizer availability	34	48.6	
Information on land preparation	9	12.9	
Information on agricultural tools	60	85.7	
Information on agricultural irrigation	13	18.6	
Information on crop farming	23	32.9	
Information on soil classification	35	50.0	
Information on new seed availability	47	67.1	
Information on food storage	18	25.7	
Information on voucher availability	33	47.1	

Source: Field data 2010

The findings revealed that all the respondents (100%) need and use information for their crop farming activities. This is probable because information is a key factor in quality decision making. These findings support earlier findings by Kamba, (2009) who argues that no community can develop without knowledge and it can only become knowledgeable if it recognizes and uses information as the tool for development, including agriculture.

The farmers were asked to indicate the type of information they need from the checklist of answers and were asked to provide more than one answer. Table 6 above summarizes the agricultural information needs of small- scale farmers. The findings revealed that a majority of farmers (88.6%) indicated that they need information on disease and pest control, 87.1% said they need information on weather conditions, 85.7% on agricultural tools, 85.7% on pesticides and application methods, 84.3% said they need information on credit, 80% said they need information on markets, 74% said they need information on how to use fertilizers and 67.1% said they need information on improved seed varieties.

Similarly, 48.6%, mentioned they need information on fertilizer availability, 47.1% said they need information on agriculture vouchers, 32.9% said they need information on crop farming, 27.1% said they need information on weed control , 25.7% said they need information on food storage ,18.6% said they need information on agriculture irrigation and only 12.9% said they need information on land preparations. The findings

from FGDs were not very different, except that in addition they said they also need information on agricultural tools, such as power tillers. Similarly, the key informants had similar views to the farmers on the information needs of farmers. These findings are consistent with those of Okwu and Omoru, (2009), Momudu, (2002), Sabo, (2007), Meitei and Devi, (2009), Lwoga, (2009) on the information needs of farmers.

Therefore, both farmers and key informants know what information they need but perhaps the issue is to what extent these needs are being met. For example, one respondent from the FGDs commented:

“Researcher, army worm is a serious problem facing us.

We need skills to eliminate them”

It appears that pest control is a major concern of farmers, particularly army worms which destroy their crops. They also complained about lack of current and relevant information on weather conditions, which would enable them to make informed decisions on when to plant their crops, because of climate change which has resulted in unpredictable rains and variability. In addition, farmers complained about low prices for their produce, especially sunflower, maize, and groundnuts, because the income generated does not even cover their production costs or meet their basic needs. This means that farmers have no access to market information about prices for their crops. This was also confirmed by Shepherd, (2000), who pointed out that information on market prices, quantities traded, and other marketing-related matters rarely reaches farmers in developing countries. The findings further revealed that most farmers do not

know where to get credit, hire tractors or purchase agricultural tools such as power tillers a new piece of technology recently introduced in Tanzania, which would enable them to cultivate more acres and increase their yield per acre.

Farmers need information on credit facilities that provide loans to farmers and the size of the loans, interest rates, and mode of payment so that they can maximize their production. Furthermore the findings revealed that farmers do not know where to get improved seed varieties. During the interview with key informants it was revealed that only a few farmers use improved seed varieties. Lwoga, (2009) found that the use of traditional farming techniques and inputs by farmers is very prevalent due to the poor extension services and the high cost of farming inputs. However, a few farmers needed information on agricultural irrigation. This is probably because Dodoma is a semi- arid region characterized by low rainfall. Hence it is difficult to practice irrigation.

Generally, the accessibility of agricultural information to farmers has the potential to transform agricultural practices in the study area. Nevertheless, if the above mentioned information needs were to be translated into farmers' training and information programmes through governmental and NGOs assistance, most of the farmers' skills in crop production would be enhanced, which would probably improve agricultural productivity.

4.4 Farmers' Initiatives in Meeting their Information Needs

The farmers were asked if they ever try to find information to meet their needs to find out what efforts are made by farmers to find the current and relevant information they needs to improve the quality of farming. The findings revealed that 55 (78.6%) the respondents always try to find information that meets their needs. The study findings agree with those of Lwoga, (2009) who reported that slightly more than half of the respondents had attempted to find information to meet their needs. Based on these findings there is a need to promote a culture that would encourage farmers to seek information in order to improve their farming activities and the quality of decision making. However, 21.4% of the respondents said they have never tried to find information, because 80% of the majorities were not aware of the existence of such information, 53.3% claimed that information sources were not easily accessible and 20% said they rely on personal experience.

4.5 Information Sources Consulted by Small- Scale Farmers

The respondents were asked about the key sources of information used in the study area. The question aimed at identifying the various sources of information used by farmers in the study area. The respondents had to choose answers from a detailed checklist provided. However they were allowed to add any other source not included in the checklist.

Table 7: Information Sources used by Farmers in the Study Area

Total sample N= 70	Category	Frequency	Percent
	Villages leaders	59	84.3
Agricultural extension officers	54	77.1	
Neighbours and friends	65	92.9	
Family/parents	46	65.7	
Radio	67	95.7	
Television	30	42.9	
Internet	1	1.4	
Books	24	34.3	
Bronchures	19	27.1	
Films	36	51.4	
Leaflets	15	21.4	
Newspapers and magazines	30	42.9	
Non governmental organization	28	40.0	
Farmers groups	43	61.4	
Personal experience	54	77.1	
Agricultural inputs supplier	25	35.7	
Posters	17	24.3	
Agricultural show	8	11.4	
Churches and mosques	13	18.6	
Notice board	10	14.3	
Seminars and workshops	13	18.6	

Source: Field data 2010

The results in Table 7 show that 95.7% of the respondents access information through the radio, 92.9% through neighbours and friends, 84.3% through village leaders, 77.1% through agricultural extension officers and personal experience, 65.7% through family and friends/ 61.4% through farmer groups and 51.4% from documentaries/films.

Other information sources mentioned by the respondents include television, (43. %), newspapers and magazines (43. %), NGOs (40%) and inputs suppliers (35.7 %). Based

on these findings, farmers use a combination of methods to access the information they need, including books (34%), village meetings, farmers groups, head teachers, posters, (24.3%), notice boards, (14.3%), visits to individual farmers, churches/mosques (19%) announcements, seminars and workshops (18.6%), agriculture shows (11.4%) and the Internet (1.4%).

Findings show that radio is the most useful source of information among farmers. Similar findings showing radio as a key source of agricultural information among farmers have been reported by Meitei and Devi (2009); Agwu and Adeniran (2009);Lwoga (2009); Mtega (2008); and Chapman *et al.* (2003). These scholars reported that the radio is the most widely used source of information among farmers in different developing countries, including Tanzania. The Internet on the other hand was the least used source of information. The difference in the radio and internet infrastructure explains the disparity.

4.6 Frequency of use of Information Sources

The respondents were asked to indicate the frequency of use of the sources of information which was provided to solve their agricultural problems. (Frequently, occasionally, and never).

As indicated in the Table 8 below, the findings of this study revealed that the sources frequently consulted by small- scale farmers were radio (71.4%), neighbours and

friends 67.1%, own personal experience 52.9%, family/friends 50%. Other sources were agricultural extension officers 30%, farmers' groups 30% and village leaders 28.6%.

Table 8: Frequency of Use of the Information Sources for Answering Agriculture Queries

category	Frequencies of use of the sources					
	Frequently		Occasionally		Never	
	N	%	n	%	n	%
Villages leaders	20	28.6	39	55.7	11	15.7
Agricultural extension officers	21	30.0	33	47.1	16	22.9
Neighbours and friends	47	67.1	18	25.7	5	7.1
Family	35	50.0	11	15.7	24	34.3
Radio	50	71.4	17	24.3	3	4.3
Television	17	24.3	13	18.6	40	57.1
Internet	0	0.0	1	1.4	69	98.6
Books	9	12.9	15	21.4	46	65.7
Bronchures	7	10.0	12	17.1	51	72.9
Film	0	0.0	36	51.4	34	48.6
Leaflets	6	8.6	9	12.9	55	78.6
Newspapers and magazines	4	5.7	26	37.1	40	57.1
Non governmental organization	0	0.0	28	40.0	42	60.0
Farmers groups	21	30.0	22	31.4	47	67.1
Personal experience	37	52.9	17	24.3	16	22.9
Agricultural inputs supplier	4	5.7	21	30.0	45	64.3
Posters	2	2.9	15	21.4	53	75.7
Agricultural show	0	0.0	8	11.4	62	88.6
Churches and mosques	0	0.0	13	18.6	57	81.4
Notice board	3	4.3	7	10.0	60	85.7
Seminars and workshops	0	0.0	13	18.6	57	81.4

Source: Field data 2010

However, 98.6% of respondents claimed they had never used the internet, 88.6% claimed they had never attended agriculture shows, 85.7% claimed they had never used the village notice board, 81.4% claimed they had never attended workshops and

seminars, 81.4% claimed they had never used churches/ mosques and 78.6%, 75.7%, and 72.9% claimed they had never used printed leaflets, posters, and brochures, respectively.

The radio is frequently consulted as a source of information by farmers because it is readily available, affordable and reaches a wide audience even in remote areas. These views are also shared by Nazari and Hasbulallah, (2010) and Irfan *et al.* (2006). Thus, the radio is an effective channel for disseminating the latest knowledge and information or technology to farmers.

The study findings show that, even though agriculture extension officers are key sources of information for farmers, they are rarely consulted by farmers in the study area compared to other sources. This is probably because they are few in number compared to the population they are expected to serve. For example, the researcher found that the area surveyed had only two extension officers which made it difficult for them to visit every farmer. This also corroborates Aina's (2006) findings, which revealed that the ratio of agricultural extension workers to the population in Africa is low.

The findings also revealed that farmers rarely consult village leaders on agricultural problems because they believe that village leaders have little knowledge or education on agricultural matters and therefore cannot help them solve technical agricultural problems. This means there is a need to train leaders through short courses on

agricultural issues so that farmers can develop trust and ask them for assistance when the need arises.

However, the findings revealed that most of the farmers (98.6%) have never used the Internet to access agricultural information. This is probably because of lack of skills, lack of IT infrastructure in rural areas, lack of awareness of the role of the Internet as an important source of agricultural information, the low level of education and the fact that most farmers cannot afford to invest in computers. This was not surprising as, for example, Malhan and Rao, (2007) also found that the Internet is less used in developing countries due to poor information infrastructure and the poverty level of rural communities, which does not allow them to invest in computers. In view of this, there is a need to invest in rural IT infrastructure and training in basic computer skills which would enable farmers to access information on the Internet. The findings further revealed that most farmers do not attend agricultural shows, seminars or workshops on agricultural issues. This is probably because of the lack of opportunities, or the lack of awareness of such opportunities, the costs involved and time constraints. Some of the respondents pointed out that the few workshops and seminars that have been organized in the villages mainly target village leaders and extension officers and not the farmers who are the key stakeholders.

Neither print sources (leaflets, posters, and brochures) nor notice boards were widely used to display agricultural information in the study area due to the low level of

awareness of their role and importance, availability and also sometimes due to language barriers and the high illiteracy level. However, when there is an outbreak of crop diseases this media is used to inform farmers. Generally, consulting a given source of information depends on the availability of the source, one's skills in using the information source, and the affordability and friendliness of the source. Information sources which were never used were either unavailable, very expensive, they needed a lot of skill to use them, or they were not trusted.

On whether the information sources they use meet their needs, a majority of the farmers (84.3%) said they meet their needs somewhat, while 11(15.7%) said they do not. The lack of adequate numbers of extension officers and limited access to current and relevant information were also important factors. Therefore information providers should view these as challenges which need to be concretely addressed so that farmers can maximize their productivity.

4.7 Influence of Selected Demographic Variables on the Use of Information

Sources.

Table 9: Influence of Selected Demographic Variable on the Use of Information Sources

Total Sample N= 70	Category	Level of Education	Age	Income Level	Farming Experience
	Villages leaders	0.089	0.012	0.102	-0.162
	Agricultural extension officers	-0.041	0.087	0.132	0.175
	Neighbours and friends	0.000	0.09	0.007	-0.060
	Family/parents	0.116	0.325*	0.087	-0.028
	Radio	0.218	-0.094	-0.067	-0.155
	Television	-0.159	0.31	-0.177	-0.302
	Books	-0.389*	0.018	-0.023	-0.008
	Bronchures	0.411*	-0.224	-0.129	-0.037
	Film	-0.058	-0.104	-0.190	-0.118
	Leaflets	-0.438*	-0.240	-0.141	0.008
	Newspapers and magazine	-0.392*	0.002	0.045	0.145
	Non governmental organization	-0.038	-0.188	-0.099	-0.116
	Farmers groups	0.073	0.036	0.193	0.099
	Personal experience	0.197	-0.004	-0.108	-0.181
	Agricultural inputs supplier	0.209	0.171	0.130	-0.071

Source: Field data 2010

* Significant at 0.05

Demographic variables have an influence on farmers' use of sources of information. In order to achieve this, correlation coefficient (r) was employed. The major sources of information were cross tabulated with selected demographic variables (level of education, age, income and personal experience). Correlation coefficient (r) was derived for each bivariate variable as shown in Table 9 above. The results show that there is a negative significant relationship between the level of education and the use of printed

sources of information (books, brochures, leaflets and newspapers and magazines). This implies that a farmer's level of education influences the use of printed sources, i.e. the more educated an individual the more exposure to current sources of information. This finding is supported by Anyanwu *et. al.*, (2002), whose study indicated that educational attainment, predisposes one to use of different sources of information, the emphasis being more on professional rather than interpersonal sources of information. Furthermore, the analysis of the results showed that age has a positive significant relationship with the use of family/ parents as sources of information. This means that old people have enough experience of the use of different information sources and hence use personal experience rather than family members/ parents, unlike young family members who depend on their elders. Thus the older the farmer the more experienced in farming methods and so has less need of external information for both production and marketing.

However, further analysis showed that farming experience and a farmer's income level had no relationship with the use of information sources. This finding is inconsistent with that of Agwu and Adeniran (2009) who found that farming experience and the income of a farmer has a positive significant relationship with the use of various information sources. This difference could be attributed to the level of development of the area, the socio- economic background of farmers, and the awareness and availability of the sources.

4.8 Usage of Agricultural Information Sources to Improve Agricultural Productivity.

The farmers were asked to what extent the sources help them to improve their agricultural productivity. This was close ended questions whereby farmers had to tick more than one option.

Table 10: Use of Information Sources

Total sample N= 70	Category	Frequency	Percent
	To market my produce	51	72.9
	To improve productivity	66	94.3
	To plan my daily agricultural activities	59	84.3
	To make informed decisions	33	47.1
	To improve the quality of the produce	61	87.1
	To reduce crop loss	41	58.6
	To simplify field operations	42	60.0
	To increase production	21	30

Source: Field Data 2010

Table 10 shows that 94.3% of the respondents use agricultural information sources to improve productivity, 87.1% to improve the quality of the produce, 84.3% to plan agricultural activities, 72.9% to look for markets for their produce, 60% to simplify field operations 58.6%, to reduce crop loss, 47.1%, to improve the quality of decision making, and 30% to increase production.

Based on these findings, farmers use information sources for a wide variety of reasons, including to improve productivity and the quality of their produce, to plan agricultural activities including how to use farm inputs, to identify markets for their produce, to become aware of new seed varieties and technologies and innovations in agricultural technology, as well as when to plant, where to obtain credit, which fertilizer to apply and which agriculture tools to use.

Market information enables farmers to make rational decisions on when to produce, what to produce, how to produce it and for whom to produce it. This implies that when farmers are supplied with current, timely and relevant information sources they will improve their productivity and quality of living.

4.9 Constraints/ Barriers Faced by Small- Scale Farmers in Accessing Information

The farmers were asked what constraints/barriers they face in accessing information and to choose their answers from the checklist.

Table 11: Barriers to Information Access

Total Sample N= 70	Category	Frequency	Percent
	Language	33	47.1
	Inadequate funds	52	74.3
	Time	55	78.6
	Information not easily accessible	49	70.0
	Information not current too old	35	50.0
	Lack of information services	58	82.9
	Lack of reading culture	26	37.1
	Inadequate numbers of extension agents	63	90.0
	Lack of awareness of information sources	56	80.0
	Lack of knowledge- sharing culture	60	85.7
	Too much information	5	7.1
	Lack of Offices	26	37.1

Source: Field Data 2010

Table 11 above shows that 90% mentioned the inadequate number of extension staff as a major constraint, 85.7% said lack of knowledge sharing, 82.9% said lack of information services, 80% said the low level of awareness of information sources, 78.6% said time constraints and 74.3% said inadequate funding. Furthermore, 70% said the information is not easily accessible, 50% said the information accessed is outdated, 50% mentioned the language 47.%, said the lack of a reading culture, 37.1% said lack of extension offices and only 7% said too much information. These findings corroborate those of previous studies (Obadiah et al. 2008; Aina, 1990; Ugboma 2010; Byamugisha et al., 2008 and; Lwoga 2009).

4.9.1 Shortage of Agricultural Extension Officers

A shortage of extension officers in the study area is a major problem, constraining farmers from accessing agricultural information. For example, in the study areas surveyed, there were only two extension officers. In view of this it is difficult for them to cover all the villages and reach out to all the farmers. Agriculture extension officers assist farmers in improving productivity and consequently their income and standard of living.

4.9.2 Lack of Knowledge- Sharing Culture

The findings further revealed that some of the farmers were reluctant to share their knowledge and experiences of agricultural issues with other farmers. For example, one farmer from Mkoka village commented

Some of the farmers in our village are very selfish. Someone can attend a seminar and an agricultural training/course but that person never shares with others" what the skills were obtained

Most farmers who attend agriculture seminars do not share what they have learnt with others when they return home. In view of this information providers should encourage farmers to build a culture of information and knowledge sharing so that they all benefit.

4.9.3 Lack of Information Services

The absence of information services, such as village/ward libraries and information centres was also considered a major constraint in accessing timely information by farmers. This is a common problem in most rural areas in Tanzania. During the interview one farmer noted:

If we had a village information centre in our village we could have the opportunity to access agricultural information through various ways, including leaflets, books, brochures, etc.

Given the critical role of information for national development, Local Government Authorities in collaboration with the Tanzania Library Service Board should look into this issue as it deters development. Therefore information providers should regard it as a challenge and provide farmers with access to current and relevant agricultural information.

4.9.4 Lack of Awareness of Information Sources

The lack of farmers' knowledge about existing information sources and services was also noted in the study area. For instance, a respondent from Mlali village reported that he does not know where to get help apart from friends, family members and the radio. During FGDs one respondent in Mkoka village claimed that she did not know whether she could get agriculture information from agriculture shows like *Nane Nane* (annual agricultural show), as she thought such shows were only for traders. This also requires

that where they exist, information sources and services should be widely published and promoted, not only to create awareness but also to promote and encourage usage by farmers.

4.9.5 Time

Time was another major constraint cited by farmers as a key factor hindering them from accessing information, attending agricultural shows or listening to agricultural radio programmes. Farmers have busy and demanding schedules. Some of them are illiterate and therefore may not understand the importance of information or why they should take the trouble to look for it unless they know its value. Similar findings were noted by Ozowa, (1995) and Munyua, (2000).

4.9.6 Inadequate Funding

Due to the low prices they get for their produce, the lack of markets and marketing information, farmers face many financial challenges. As such they cannot afford to pay for information. Due to these financial constraints some of the farmers cannot afford to buy information reference sources or attend important seminars/workshops or agricultural shows. Transport problems also limit extension officers from visiting farmers to conduct demonstrations on a regular basis.

4.10 Solutions to Constraints/Barriers in Accessing Information.

This question sought to find out what efforts are made by farmers to seek and access agricultural information for solving agricultural problems. In response to this question some of the respondents said they use their personal experience or consult other knowledgeable farmers. This is also confirmed by Byamugisha et al. (2008), who reported that some of the farmers in Uganda use indigenous knowledge such as cow urine and soap to kill pests or past experience that yielded good results. Those who cited financial constraints as a problem said that sometimes they borrow books and leaflets or other sources of information on agriculture from relatives or extension officers, while those who cite time as a major constraint indicated that they try to arrange a time when they can search for information. For example, a farmer during FGDs commented;

I have planned when to seek agricultural information, so that most I spare a few hours each day to listening to the radio.

This means some farmers understand the importance of information and devote some time to look for information, especially by listening to different agricultural radio programmes or asking school children to translate materials written in English into Kiswahili which they understand. Extension officers reported that they sometimes use their own money to hire a bicycle to visit farmers and to purchase extension materials, such as extension bulletins, to ensure that farmers have access to information. However, spending their own money could be a demotivating factor.

4.11 Role of Information in Agriculture Production

The findings revealed that 100% of the small- scale farmers were of the opinion that information plays a major role in improving agricultural productivity and decision making, including problem solving, how to apply fertilizer, how to control pests, how and when to plant. For example, a farmer from Mlali village pointed out that information helps him to plan what to produce, how, how much and when to plant. Another farmer from Mkoka village said: “when I get the relevant information on where to market my crops I become highly motivated and produce more”. Others indicated that timely access to information has enabled them to move from traditional farming to modern farming methods, which has improved their productivity. This implies that farmers understand that information is a very important resource for improving productivity.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study examined the information needs of small- scale farmers in Kongwa district in Dodoma region. The study was guided by the following broad research questions:

1. What are the information needs of small- scale farmers in the study area?
2. What sources of information are used by small- scale farmers in study area?
3. What challenges do small- scale farmers face in meeting their information needs?
4. How can the information needs of small- scale farmers in Kongwa be met?

The study employed a case study research design and used a combination of methods to collect both quantitative (questionnaires) and qualitative data (Focus Group Discussions, observations, and key informant interviews). 70 respondents participated in this study, of whom 54.3% were male and 45.7% were female.

5.2 Summary

The key findings revealed that farmers need access to a wide variety of information to improve productivity. The information they need includes information on diseases, pesticides and pest control, weather conditions, agricultural tools, markets, fertilizers, improved seed varieties, credit and credit facilities, and agricultural vouchers to help

them make informed decisions. Moreover, the key sources of information used by small-scale farmers in the study area include the radio, neighbours and friends, village leaders, agriculture extension officers, personal experience, family members, farmers associations, films, television, newspapers and magazines and input suppliers.

The findings further revealed that farmers face a number of problems, which are few extension officers, the lack of a knowledge-sharing culture, lack of information services, the low level of awareness of information sources, time and financial constraints. Basically, financial constraints limit their ability to acquire information resources, or attend agricultural shows and seminars. Even where available free of charge most information resources are outdated and are often in English, and therefore inaccessible to farmers who cannot understand English. Despite these barriers, farmers use alternative sources to find the information they need, including personal experience, knowledgeable farmers or borrowing print resources from other farmers.

5.3 Conclusion

People seek information in order to bridge the information gap they experience. The information needs of the small-scale farmer vary and range from pesticides and how to control diseases and pests, to weather conditions, agricultural tools availability and application methods. They also need information on where they can obtain credit, where to market their produce, where and how to use fertilizer, where to obtain improved seed varieties and agricultural vouchers, and information on crop farming. When these needs

are met and the information used and applied, this can improve farmers' productivity and the quality of living.

Also from this study it was found that the radio, neighbours and friends, village leaders, agriculture extension officers, personal experience, and family members were key sources of information. The major constraints faced by farmers in using these sources were the few extension officers, the lack of a knowledge-sharing culture, lack of information services, the low level of awareness of information sources, time and financial constraints. Also among the demographic characteristics examined education and age had a significant relationship with the use of information sources. In view of this, when planning any agricultural dissemination programmes for farmers, the education and age of the farmers should be taken into consideration, since it determines the type and use of information sources.

However, information needs are not static, but change with time as new needs, new technology and new developments arise in a given field. Given this, a regular assessment of information needs is crucial in order to ensure users' access to relevant and current information that meets their needs.

5.4 Recommendations

i. Government

In order to meet the information needs of small-scale farmers, it is recommended that the Government should increase the number of extension officers in all the villages to

ensure that farmers have access to expert advice, technology and information. It is further recommended that extension officers should be motivated and be provided with transport to facilitate their movements between villages and to enable them to cover more villages within a short period. Motivating extension officers is crucial for improving their efficiency and commitment.

Also the government should empower small- scale farmers through training and by providing them with access to credit. The government should also subsidize farm inputs to enable farmers to afford and use them.

ii. Information Resource Centres

Local government authorities, in collaboration with the Tanzania Library Services should establish Resource or Documentation Centres in rural areas. These should be stocked with relevant and current agricultural information resources in Kiswahili to meet the needs of small- scale farmers.

iii. Education and Training

Education and training are critical for improving efficiency, performance and productivity. Therefore it is recommended that seminars and workshops on agricultural issues should be organized for farmers on a regular basis to update their knowledge and skills. Similarly in this information age, farmers should be provided with information literacy skills and trained in search techniques. They should also be exposed to a wide variety of search engines and information

resources databases to ensure that they have access to a wide variety of information resources.

iv. Media Owners

Media owners should broadcast more agricultural programmes on both radio and television and should make sure that the programmes are broadcast at appropriate and convenient times for farmers.

v. Agriculture Extension Officers

Agriculture extension officers should encourage farmers to form farmers' associations as a platform for sharing information and experience. In addition, extension officers should use participatory methods to train farmers including farm demonstrations.

vi. Village Leaders

Village leaders should be trained and be familiar with the agricultural information disseminated, so that farmers can consult them when they encounter problems.

vii. Farmers

Level of education has an influence on information use. Therefore it is recommended that adult education should be accessible to farmers to enable them to get the knowledge needed to improve productivity.

viii. Non Government Organizations (NGOs)

Due to the shortage of funds and extension officers, NGOs should provide assistance in disseminating agricultural information to farmers so that farmers can have wide access to current and relevant agricultural information.

5.5 Areas for Future Research.

This study suggests the following areas for future research

To assess the effectiveness of mobile phones in the dissemination of agricultural information to small- scale farmers.

How to repack information sources into appropriate forms.

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APPENDICES**APPENDIX I: QUESTIONNAIRE FOR SMALL SCALE FARMERS IN KONGWA DISTRICT****Introduction to Respondents**

I am **Benard Ronald** a Masters student at the University of Dar es Salaam doing research on: **Information Needs among Small- Scale Farmers in Tanzania**. I would appreciate it if you could spare a few minutes for an interview with you. The information provided will be treated confidentially and your name will not be mentioned.

SECTION A: PERSONAL INFORMATION

1. Name of District Kongwa
2. Name of the Ward.....
3. Name of the Village.....

4. Sex of respondents

1= Male

2= Female

5. Age in years.....

6. Marital Status. (Please tick the applicable)

1=Single

2=Married

3=Divorced

4=Separated

5=Widowed

7. Level of education. (Please tick the applicable)

1=None

2=Primary

3=Secondary

4=Post Secondary (please specify)

5= Other, Please specify.....

8. Mention the main types of crops that you cultivate in your area:

1= Sweet potatoes

2= Millet

3= Sorghum,

4= Maize

5= Beans

6= Paddy,

7= Bambara nuts

8= Grapes

9= Sunflower

10=Groundnuts

11= Cassava

12=others, please specify.....

9. What size of your farm do you cultivate? -----

10. For how long have you been involved on farming activities?.....

1= Below 5 years

2=5- 10 years

3=10- 15 years

4=20 years and above

11. What is your income level per annum? (Please tick the applicable)

1=Less than 100,000

2=100,000-200,000

3=200,000-300,000

4=300,000-400,000

5=More than 400,000

SECTION B: INFORMATION NEEDS AND SOURCES USED BY SMALL SCALE FARMERS.

12. In your effort to improve on your Crop farming activities do you need information?

1=No 2=Yes

13. If YES, What information do you need in order to improve your farming activities (Tick all that are appropriate)

1=Information on Market situation

2=Information on Weather conditions

3=Information on agriculture credit/ loans

4=Information on how to use fertilizers

5=Information on pesticide availability and its application

6=Information on Weed control

7=Information on disease and pest control

8=Information on Soil fertility

9=Information on fertilizer availability

10=Information on land preparation

11=Information on agricultural tools

12=Information on irrigation

13=Information on Crop planting

14=Information on soil classification

15=Others, please

specify.....
.....
.....
.....

14. If your answer to question 12 is "No" how do you improve your crop farming activities?.....

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

15. Have you tried to find this information in order to meet your needs?

1= Yes, 2= No

16. If your answer to question 14 is "No" why have you not tried to find it

.....
.....

17. What Sources of Information do you normally use for accessing agricultural information in your area? (Tick all that are appropriate)

1=Village leaders

2= Agricultural extension officers

3=Neighbours and or friends

4= Family/ parents

5=Radio

6= Television

7= Internet

8= Books

9= Brochures

10=Film

11=Leaflets

12= News paper and Magazines

13= Non Governmental Organization (NGO)

14= Farmer groups

15=Personal experience

16= Agricultural inputs suppliers

17= Others, Please

specify

.....

18. Indicate the frequency of use of the sources from question no17 above for answering agriculture queries (Circle only ONE number for frequency of use)

Source	Frequent of use		
	Frequently	Occasionally	Never
Village leaders	1	2	3
Agricultural extension officers	1	2	3
Neighbours and or friends	1	2	3
Family/ parents	1	2	3
Radio	1	2	3
Television	1	2	3
Internet	1	2	3
Books	1	2	3
Brochures	1	2	3
Film	1	2	3
Leaflets	1	2	3
News paper and Magazines	1	2	2
Non Governmental Organizational	1	2	3
Farmers' groups	1	2	3
Personal experience	1	2	3
Agriculture input suppliers	1	2	3
Others please specify	1	2	3

19. Do these sources meet your information needs (Tick one)

1=Yes

2=No

3=don't know

20. If No, please

explain.....
.....
.....
.....

21. How do the information sources in question no (14) above help you in improving agriculture activities? (Tick all that apply)

1= To market my produce

2=To improve Productivity

3=To plan my daily agricultural activities

4= To make informed decisions

5= To improve the quality of the crops produced

6= To reduce crop loss

7= To simplify field operation

8= Other, Please

specify.....

SECTION C: PROBLEMS/ BARRIERS TO INFORMATION ACCESS

22. What Challenges do you encounter in accessing information? (Tick as applicable)

1= Language barrier

1= Inadequate funds

2= Time

3= Information not easily accessible

4= Information not current / too old

5= Lack of information services

6= Lack of reading culture

7= Inadequate numbers of extension agents

8= Lack of awareness of information sources

9= Poor knowledge- sharing culture

10=Too much information

11=other, please specify

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

23. How do you overcome such challenges? Please

explain.....
.....

24. In your opinion do you think information has a role to play in improving agriculture productivity?

1=YES

2=NO

3=DON'T KNOW

If yes Please explain.....
.....
.....
.....
.....

25. In your opinion what should be done in order to meet your information needs

Thank you for your time and input

APPENDIX II: FOCUS GROUP DISCUSSIONS GUIDE FOR FARMERS

1. Do you use information in your daily activities? If yes what kinds of information do you normally need to run your agricultural activities?
2. What sources do you use to meet information needs and where do you get them?
3. What are the challenges facing you in searching for information?
4. In your opinion what strategy (ies) can be used to overcome those challenges?
5. In your opinion what should be done in order to meet your information needs

APPENDIX III: INTERVIEW GUIDE FOR KEY INFORMANTS

1. Sex (Please tick the applicable)
 1. Male
 2. Female
2. Education qualification
 - 1=Certificate
 - 2=Diploma
 - 3=Graduate
 - 4 =Postgraduate
 - 5 = Other, Please specify.....
3. How long have you held this job?
 - 1=Under 2 years
 - 2=3- 4 years
 - 3=5- 6 years
 - 4=6 years and above
4. What kind of informations do farmers ask for to run their agricultural activities in your District?
5. What existing information sources and services are used in your District?
6. How do you disseminate information to farmers?

7. What challenges/ problems do you face when disseminating information to farmers? Please explain

8. How do you go about overcoming these challenges?

9 In your own words what should be done in order to meet information needs of the farmers

Any other comment

Thank you for your time and input

APPENDIX IV: OBSERVATION GUIDE

1. Presence of internet services
2. Presence of printed materials such as Brochures, Books, News papers, Magazines, Leaflets etc.
3. Presence of radios, Televisions, Films and cell phones
4. Presence of libraries and computers
5. Presence of different crops grown in the area
6. And other observations



UNIVERSITY OF DAR-ES-SALAAM

OFFICE OF THE VICE-CHANCELLOR

P.O. BOX 35091 ♦ DAR ES SALAAM ♦ TANZANIA

Ref. No: AB3/12(B)

Date: 20th October, 2010

To: The Regional Administrative Secretary,
Dodoma Region.

UNIVERSITY STAFF AND STUDENTS RESEARCH CLEARANCE

The purpose of this letter is to introduce to you **Mr. Benard, Ronald** who is a bonafide student of the University of Dar es Salaam and who is at the moment conducting research. Our staff members and students undertake research activities every year especially during the long vacation.

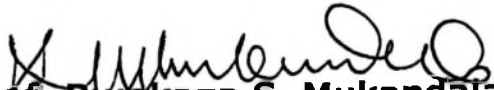
In accordance with a government circular letter Ref.No.MPEC/R/10/1 dated 4th July, 1980 the Vice-Chancellor was empowered to issue research clearances to the staff and students of the University of Dar es Salaam on behalf of the government and the Tanzania Commission for Science and Technology, a successor organization to UTAFITI.

I therefore request you to grant the above-mentioned member of our University community any help that may facilitate him to achieve research objectives. What is required is your permission for him to see and talk to the leaders and members of your institutions in connection with his research.

The title of the research in question is "**Information Needs among Small Scale Farmers in Tanzania: The Case of Kongwa District in Dodoma Region**".

The period for which this permission has been granted is **October, 2010 to December, 2010** and will cover the following areas/offices: **Kongwa District**.

Should some of these areas/offices be restricted, you are requested to kindly advise him as to which alternative areas/offices could be visited. In case you may require further information, please contact the Directorate of Research and Publications, Tel. 2410500-8 Ext. 2087 or 2410743.


Prof. Rwekaza S. Mukandala.
VICE-CHANCELLOR

**VICE CHANCELLOR
UNIVERSITY OF DAR-ES-SALAAM
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DAR-ES-SALAAM**

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JAMHURI YA MUUNGANO WA TANZANIA

OFISI YA WAZIRI MKUU
TAWALA ZA MIKOA NA SERIKALI ZA MITAA



MKOA WA DODOMA

OFISI YA MKUU WA WILAYA,
S.L.P. 11,
KONGWA.

Simu Nambari: 2320426
Tafadhali unapojibu taja,

Kumb. Na. KOG/ E.10/7 VOL.II/83

25 Novemba 2010

Afisa Mtendaji Kata:

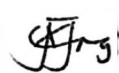
- **Kibaigwa**
- **Mlali**
- **Mkoka**

YAH: RUHUSA YA KUFANYA UTAFITI

Ndg. Benard Ronald ni mwanafunzi wa Chuo Kikuu cha Dar-es-Salaam. Katika kipindi hiki anafanya utafiti hapa Wilayani, aidha tafiti yake inahusu " **Information Needs among Small Scale Farmers in Tanzania**".

Muda wa utafiti wake ni kuanzia mwezi Oktoba 2010 hadi Desemba 2010. Tafadhali apewe ushirikiano.

Nawasilisha..

 KATIBU TAWALA (W)
KONGWA

James L. Ngonyani
KAIMU KATIBU TAWALA (W)
KONGWA

Nakala: Ndg. Benard Ronald.

**THE UNITED REPUBLIC OF TANZANIA
OFFICE OF THE PRIME MINISTER
REGIONAL ADMINISTRATIVE AND LOCAL GOVT.**

Dodoma Region
Address REGCOM
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E-Mail No. rasdom2002tz@yahoo.com
Fax No: 255 026 2320046
In reply please quote:



Regional Commissioner's Office
S.L.P 914
Dodoma.

Ref. No. DB. 122/467/02/8

19th November, 2010

District Administrative Secretary,
Kongwa District.

RE: RESEARCH PERMIT

I am hereby introducing to you Mr. Benard, Ronald who is a bonafide student of the University of Dar es Salaam and who is at the moment conducting research in Kongwa District.

The title of the research in question is **Information Needs among Small Scale Farmers in Tanzania.**

The period for which this permission has been granted is October to December, 2010.

Please assist him accordingly.

A handwritten signature in black ink, appearing to read 'Masanja'.

P. K. Masanja
**For: REGIONAL ADMINISTRATIVE SECRETARY
DODOMA**

Copy to:- Mr. Benard, Ronald.

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