

**AN EVALUATION OF THE EFFECTIVENESS OF COMMUNICATION
BETWEEN SMALL-SCALE FARMERS AND AGRICULTURAL EXTENSION
SERVICE PROVIDERS: CASE STUDY OF THE CHONGWE DISTRICT
FARMING COMMUNITY**

BY

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DECLARATION

I Jenipher Mulilo, do declare that the work presented in this paper is my own except where it is acknowledged and that it has never been presented anywhere for the award of any degree.

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DEDICATION

To my parents the late Mr. David and Mrs. Winnie Mulilo who have made me what I am today.

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First and foremost, I would like to thank my husband Banji Milambo for enabling me to pursue the master's degree through his unending financial and moral support. I am greatly indebted to him.

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ABSTRACT

Information provision to small-scale farmers such as those in Chongwe District has proven to be a big problem and challenge for the Zambian Government. As part of the solution to the problem, the Government has since identified agricultural extension services to be one of the most important sources of information. Extension staff from Ministry of Agriculture and Co-operatives (MACO), as well as the mass media especially radio, are some of the channels used by agricultural extension service providers to disseminate information to the farmers.

However, It is not clear whether the communication between the small-scale farmers of Chongwe District and the agricultural extension service providers is effective enough to bring about desired behavioural change among the farmers. It is also not clear who the initiators of the messages in the communication process are, that is, whether it is a two-way process. The important questions asked therefore, are: do the farmers participate in the initiation of the developmental messages which are meant to bring about positive change for themselves since they know their problems and needs better and what do they consider as the most effective channels and method/s for disseminating information to them?

This study was thus embarked on to find answers to the concerns raised above. It was undertaken to investigate the effectiveness of the methods used for communicating with the farmers, the adequacy and appropriateness as well as the relevance of the agro information disseminated to the farmers in Chongwe District. The study was undertaken to find out the problems encountered in the communication system currently existing in Chongwe District. The study is meant to make a contribution to the betterment of the communication process between the Chongwe District small-scale farmers and the agricultural extension service providers.

Results of the study show that the communication system in Chongwe District is not very effective and efficient. Though the farmers receive agro information, it is not adequate and feedback is slow, making the full participation of farmers difficult.

TABLE OF CONTENTS

DECLARATION.....	1
DEDICATION.....	2
ACKNOWLEDGEMENTS.....	3
ABBREVIATIONS	8
LIST OF FIGURES.....	9
CHAPTER 1	10
INTRODUCTION/BACKGROUND: ZAMBIA.....	10
1.0 INTRODUCTION.....	10
1.1 GEOGRAPHY OF ZAMBIA.....	11
1.1.1 HISTORY OF ZAMBIA.....	12
1.1.2 PRE COLONIAL ERA	12
1.1.3 COLONIAL ERA	12
1.1.4 POST COLONIAL ERA (1964 TO DATE).....	13
1.2 ECONOMY	14
1.3 AGRICULTURE	15
CHAPTER 2	17
BACKGROUND: THE PROBLEM.....	17
2.0 INTRODUCTION.....	17
2.1 STATEMENT OF THE PROBLEM.	19
2.2 RATIONALE OF THE STUDY.....	20
2.3 OBJECTIVES OF THE STUDY	22
2.4 RESEARCH QUESTIONS	23

CHAPTER 3	25
CONCEPTUAL AND THEORETICAL FRAMEWORK.....	25
3.0 INTRODUCTION.....	25
3.1 DEFINITION OF KEY CONCEPTS	25
3.1.1 COMMUNICATION.....	25
3.1.2 DEVELOPMENT.....	26
3.1.3 PARTICIPATION	27
3.1.4 AGRICULTURAL EXTENSION SERVICES:	27
3.1.5 AGRICULTURAL EXTENSION WORKER:	28
3.1.6 AGRICULTURAL EXTENSION SYSTEM:.....	28
3.2 OPERATIONAL DEFINITIONS	28
3.2.1 COMMUNICATION.....	28
3.2.2 DEVELOPMENT.....	31
3.2.3 PARTICIPATION	33
3.4 THEORETICAL FRAMEWORK.....	33
CHAPTER 4	40
LITERATURE REVIEW.....	40
CHAPTER 5	52
METHODOLOGY.....	52
5.0 RESEARCH DESIGN/DATA GATHERING.....	52
5.1 METHODS.....	52
5.1.1 SURVEY.....	52
5.1.2 IN DEPTH INTERVIEWS	52
5.2 SAMPLING PROCEDURE.....	53
5.3 DATA ANALYSIS.....	53
5.4 LIMITATIONS OF THE STUDY	53
CHAPTER 6	54
FINDINGS AND DISCUSSION	54
6.0 DEMOGRAPHIC INFORMATION OF THE CHONGWE DISTRICT SMALL-SCALE FARMERS	54

6.1 SEX 54

6.1.1 AGE..... 54

6.1.2 NATIONALITY 55

6.1.3 EDUCATION..... 55

6.1.4 NUMBER OF FAMILY MEMBERS PER HOUSEHOLD..... 56

6.1.5 POSITION OF RESPONDENT IN THE HOUSEHOLD..... 56

6.1.6 SOURCE OF INCOME 57

6.1.7 SETTLEMENT 57

6.2 CHARACTERISTICS OF THE RESPONDENT’S FARMING ACTIVITIES IN CHONGWE . 58

6.2.1 SIZE OF LAND OWNED AND CULTIVATED 58

6.2.2 AGRICULTURAL PRODUCTS PRODUCED BY RESPONDENTS IN THE PAST SEASON 59

6.2.3 MEANS OF CULTIVATION AND OWNERSHIP 62

6.3 PRESENTATION OF KEY FINDINGS ON COMMUNICATION BETWEEN THE FARMERS
AND AGRICULTURAL EXTENSION SERVICE PROVIDERS 63

6.3.1 AVAILABILITY OF AGRICULTURAL EXTENSION SERVICES IN CHONGWE DISTRICT. 63

6.3.2 PREFERRED CHANNELS USED TO PASS ON INFORMATION..... 63

6.3.3 APPROACHES CONSIDERED AS THE MOST APPROPRIATE BY FARMERS 64

6.3.4 INFORMATION NEEDS OF THE FARMERS 67

6.3.5 PARTICIPATION OF THE FARMERS IN INFORMATION FLOW IN THE COMMUNICATION
SYSTEM..... 68

6.4 DISCUSSION OF THE FINDINGS..... 70

6.4.1 CONSTRAINTS IN THE ACCESS OF INFORMATION..... 70

6.4.2 OVERALL VIEWS ON INFORMATION PROVISION TO CHONGWE DISTRICT SMALL-
SCALE FARMERS 76

CHAPTER 7 79

CONCLUSIONS AND RECOMMENDATIONS 79

7.0 CONCLUSIONS 79

7.1 RECOMMENDATIONS 81

APPENDICES 86

ABBREVIATIONS

ANC	African National Congress
BSAC	British South African Company
CHOPPA	Chongwe Organic Producing and Processing Association
CSO	Central Statistics Office
FAO	Food and Agricultural Organisation
FRA	Food Reserve Agency
GDP	Gross Domestic Product
JICA	Japan International Cooperation Agency
LINTCO	Lint Company of Zambia
MACO	Ministry of Agriculture and Cooperatives
MMD	Movement for Multiparty Democracy
NAIS	National Agricultural Information Services
NCRDP	Nimba Country Rural Development Project
NGO	Non Governmental Organisation
PASViD	Participatory Approach to Sustainable Village Development
PaViDIA	Participatory Village Development in Isolated Areas
RIS	Rural Information Services
RRF	Radio Rural Forum
SPSS	Statistical Package for Social Sciences
UN	United Nations
UNIP	United National Independence Party

LIST OF FIGURES

Table 1:	Sex of the Respondents
Table 2:	Nationality of the Respondents
Table 3:	Education of the Respondents
Table 4:	Position of Respondents in the Household
Table 5:	Source of Income for the Respondents
Table 6:	Respondent's period of settlement in Chongwe District
Table 7:	Size of Respondent's land
Table 8:	Size of land cultivated by the Respondents
Table 9:	Crops produced by the Respondents in the past year
Table 10:	Marketable surplus
Table 11:	Number of bags sold
Table 12:	Animals kept by the Respondents
Table 13:	Means of cultivation
Table 14:	Ownership of means of cultivation
Table 15:	Availability of information among the Respondents
Table 16:	Channels used to pass on information to Respondents
Table 17:	Approaches used to pass on information to the Respondents
Table 18:	Approaches considered the most appropriate for passing information to Respondents
Table 19:	Reasons for the appropriateness of the approach
Table 20:	Information passed on to the Respondents
Table 21:	Respondent's preferred information
Table 22:	Ranking of functions attended by Respondents
Table 23:	Ranking of Respondent's agricultural related problems
Table 24:	Newspaper reading by Respondents
Table 25:	Respondent's newspaper reading frequency
Table 26:	Percentage of Respondents who read other printed materials on agriculture
Table 27:	Frequency at which Respondents read other printed materials on agriculture
Table 28:	Organisations which Respondents belong to.

CHAPTER 1

INTRODUCTION/BACKGROUND: ZAMBIA

1.0 Introduction

According to the Economist Intelligence Unit (1999), the biggest problem that many Zambians are facing today is poverty. A lot of people are living below the poverty datum line. The Government's policy for combating poverty therefore is to promote economic growth. The Government has since identified boosting agriculture, especially among the small-scale farmers, as one of the ways of boosting the economy of the country and thus reducing poverty and food insecurity.

Adequate information provision to the farmers is one way of assisting the farmers to increase their agricultural productivity. Information access can help the small-scale farmers, such as those of Chongwe District to gain knowledge, which can help them to adopt new technologies and hence, induce positive change in the agricultural sector. The Government of Zambia has identified agricultural extension services as the best source of agro information for small-scale farmers. Agricultural extension service providers use a number of channels to pass information to the farmers. However, agricultural extension workers are considered the best channel because they offer a one-to-one interaction with the farmers, therefore, promoting participation and quick response. Similarly, radio has proven to be effective due to easy access.

The effectiveness, appropriateness and adequacy of the information passed on to the farmers however, is not clear. This study was therefore embarked on to find answers to the above concern.

This paper begins by outlining the background of Zambia and then goes on to highlight the statement of the problem, rational and objectives of the study as well as the research questions.

The paper then goes on to highlight the definition of key concepts, the operational definitions and the theoretical framework. Highlighting of Literature review, methodology, sampling procedure and limitations of the study then follows.

Finally, the paper highlights the findings and discussion of the findings, the conclusions and recommendations.

1.1 Geography of Zambia

Zambia is located on the great plateau of central Africa. It lies between 900 to 1500 meters above sea level. It is a land locked country, which covers an area of 750,000 square kilometers. Its neighboring countries include Tanzania in the north, Zimbabwe, Botswana and Namibia in the south, Angola and the Democratic Republic of Congo in the west and Malawi and Mozambique in the east.

Zambia has abundant natural resources. It has five main rivers, which include, the Zambezi, Kafue, Chambeshi, Luangwa and Luapula rivers. It also has five main lakes and these are the Bangweulu, Mweru Wa Ntipa, Mweru, Tanganyika and the man made lake, lake Kariba. Zambia's tourist attractions include, the mighty Victoria Falls and the game parks and game reserves, which house some of the most spectacular wild animals in the world (CSO, 2003). The national game parks include, the Kafue and Luangwa national parks. Some of the animals found in these parks include the majestic elephant, lechwe, buffalo, lions and giraffes.

Zambia experiences a subtropical climate and has three distinct seasons, which includes the warm-wet season, which normally starts in November and ends in April. The other season is the cool-dry winter season, which runs from May to August with mean temperatures, which vary from 15 degrees Celsius to 27 degrees Celsius. Lastly the hot-dry season lasts from September to October and this season comes with temperatures of 27 to 32 degrees Celsius. Zambia comprises mainly of the Woodland Savanna vegetation found on the main plateau (CSO, 2003).

Administratively, Zambia is divided into nine provinces, which are Copperbelt, Central, Eastern, Western, Northern, Southern, North-Western, Lusaka and Luapula provinces. These provinces are further divided into seventy-three districts with Lusaka being the capital city and the seat of the Government of the country.

Zambia's population according to the 2000 census is estimated at 9.9 million. According to the Central Statistics Office (2003), at the provincial level, Copperbelt province registered the largest number of 1,527,294 persons in the 2000 census. Zambia is one of the most urbanized countries in the Sub-Saharan Africa with an estimate of 36 percent of the people living in urban areas (CSO, 2003).

1.1.1 History of Zambia.

1.1.2 Pre colonial era

Zambia was initially sparsely inhabited by hunter/gatherers for over 20,000 years. The Iron-pastoral migrants and cultivators later moved in from the neighboring countries especially South Africa, Angola and the Democratic Republic of Congo during the 3rd Century BC. This influx of people brought about the 73 tribes of Zambia. The seven principle languages of Zambia however, are Lunda, Luvale, Kaonde, Bemba, Nyanja, Lozi and Tonga (Gann, 1964).

1.1.3 Colonial Era

Zambia's first contact with white people occurred in the 15th and 16th Century BC. These were the Arabs and Portuguese who came to Zambia in search of Copper, slaves and ivory. Other European settlers arrived with an interest to farm. In 1890, the British South African Company (BSAC) secured exclusive mining rights in Barotseland. Around the year 1911, Zambia, which was then called Northern Rhodesia, was firmly under the

BSAC control with the help of the British troops. These troops forced the local inhabitants to work by taxing them. The locals were also removed to 'native reserves' on inferior land while the white people settled on prime agricultural land (E.I.U, 1999).

The British colonial office eventually took control of Northern Rhodesia in 1924. These people started mining copper on a large scale on the Copperbelt Province. The whites also became commercial farmers in 1929 and took up even more land. This was the protectorate period, which extended from 1924 to 1964. The white farmers introduced direct rule where the chiefs were made to collect tax from the natives. In 1945 the chiefs became known as the native authorities and were given the responsibility for rural development. Education was improved to meet the demands of the local growing elites. It was from these local elites that Zambian post-war political leadership emerged (E.I.U, 1999).

The Federation of Northern Rhodesia, Southern Rhodesia and Nyasaland , spear headed by Roy Welensky occurred in 1953. The federation however, was boycotted and it collapsed in 1963. In October 1962, a coalition government of Kenneth Kaunda's United National Independence Party (UNIP) and Harry Nkumbula's African National Congress (ANC) were formed. ANC, however, was banned soon after it was established and its leaders were arrested. UNIP won the elections in 1963 and in 1964, Zambia, under the leadership of Kenneth Kaunda gained its independence (E.I.U, 1999).

1.1.4 Post Colonial Era (1964 to date)

President Kaunda believed in humanism. UNIP'S slogan was, 'one Zambia, one nation' and this was launched at the UNIP National Congress in 1967 thus making it the official philosophy of the country. From 1964 to 1972, President Kenneth Kaunda tolerated political opposition. In 1972, however, he instituted the one party state (E.I.U, 1999).

The country reverted to a multiparty state and saw the birth of the Movement for Multiparty Democracy (MMD) as the ruling party in 1991 under its president Frederick. T. Chiluba. The reversion back to a multiparty state was due to the pressures from various quarters of the Zambian community who were dismayed by the deteriorating economy in the country. MMD was re-elected into power in 1996 and 2001 and is still the ruling party to date under the rule of President Levy Patrick Mwanawasa (E.I.U, 1999).

1.2 Economy

During the pre-colonial era, trade dominated the country. The form of trade that was carried out is what is known as the 'barter system' where people exchanged goods ranging from copper, ivory, salt and even slaves. When the slave trade was banned, people started trading in cattle, especially those from the western part of the country.

During the British company rule, there was the introduction of taxation for the men who worked on the mines. This was the beginning of the labour market where those who were fit enough worked on the mines (Gann, 1964).

According to the E.I.U (1999), manufacturing makes a significant contribution to Zambia's Gross Domestic Product (GDP). This contribution is at a level of about 30 percent. Most of the output is for domestic use while only a small percentage is exported. Some of these outputs include food, beverages, tobacco, clothing and textiles. Privatization however, has had a marked impact on the manufacturing industries.

The agriculture and mining sectors also contribute to Zambia's GDP at levels of 10-20 percent and 10 percent, respectively. Agriculture is currently the largest employer in the country. Some of the commercial products from this sector include cotton, tobacco, vegetables and fresh flowers. Mining on the other hand provides at least 80 percent of the export earnings. 90 percent of the mining production comes from copper and by-products of copper such as cobalt (E.I.U, 1999).

According to Kalinda (2002) the economy of Zambia in the 1980s and 90s adversely deteriorated. The country had huge debts to service, inflation was high and it was difficult to control due to a poor production base, fluctuation of food prices due to vulnerability to weather and dependence on imports. Most of the Zambians to date are living below the poverty datum line. In terms of agriculture, poor functioning markets for agricultural output and low agricultural productivity because of reliance on very basic implements as well as low utilization of agricultural inputs are the largest contributors to rural poverty.

1.3 Agriculture

Zambia's agriculture, which mostly depends on rain and irrigation, is only applied to 6 percent of the potential area. This dependence on rain has usually had adverse effects on production of crops in times of droughts or when there is too much rainfall, which might wash away the crops. In Zambia, farmers are grouped in three categories and these are; small-scale farmers, who constitute about 75% of the households in Zambia. They use family labour and simple hand tools and they produce mainly for subsistence. They lack cash income, appropriate technology and have irregular supply of inputs. These farmers constitute the major farming sector in Zambia and have a huge potential to increase food production and security in the country if properly exploited (Kalinda, 2002).

The emerging farmers who constitute 17% of the farmers are the other category of farmers. These produce both for subsistence and for the market. They use family labour, oxen or hired tractors. Given the supporting technical and advisory services and improving the infrastructure, these people can also assist immensely in reducing poverty and food insecurity in the country.

The last group is the commercial farmers who make up 8% of the farmers. They are located along the line of rail or near major urban centers. With these favorable positions in terms of infrastructure and marketing facilities, they are the main beneficiaries of the support services, public investments and imported agricultural inputs (Kalinda, 2002).

Zambia's agricultural sector, is managed by, the Government and the private sector. The Government formulates the policies through the Ministry of Agriculture and Co-operatives (MACO). The MACO, is headed by, a cabinet minister with the assistance of two deputy ministers. The chief executive of all the operations of the ministry is the permanent secretary who is assisted by a number of directors from various departments. The Field Services Department is responsible for the operations of the extension services as well as the dissemination of information through the National Agricultural Information Services (NAIS) (MAFF, 2001-2005).

CHAPTER 2

BACKGROUND: THE PROBLEM

2.0 Introduction

Over the years, Zambia's economy has experienced tremendous change. A number of people are living below the poverty datum line. Hunger has become widespread partly due to poor agro policies and partly due to inclement weather conditions such as drought (E.I.U, 1999). Several organizations such as the United Nations (UN), Food and Agricultural Organisation (FAO) and Food Reserve Agency (FRA) have tried to respond to such hunger situations with the aim of achieving food security (E.I.U, 1999).

Agriculture in Zambia has therefore been identified and targeted by many development agencies as a means to improve household food security. A lot of development approaches have also been conceived and applied in the agricultural sector with a view of helping the Zambian people become secure with regard to food (E.I.U, 1999).

Agricultural extension services have been considered to be one of the reliable and surest methods of delivering relevant agricultural information to rural farmers especially those that have no access to radio or television (Suzuki and Atsushi, 2002).

Zambia recently moved from a centralized to a liberalized economy. Under this condition of liberalized agricultural markets, those farmers who are able to adopt new technologies as early as possible can keep pace of continuous innovation and gain from the direct effects of technological change. Extension workers are considered to be a much more effective and efficient channel of information dissemination. They help the rural farmers benefit from the technological changes since they have direct contact with the farmers. They are also able to use the participatory approaches to involve the farmers in problem identification, decision-making and finding solutions to the problems (E.I.U, 1999).

Extension services can also be incorporated within the mass media. That is, radio and television can be used for the dissemination of information to rural areas especially when the extension field workers are very few and cannot reach all the farmers. Radio is much more accessible and farmers can listen to programs such as 'Lima Time', 'Rural Notebook' or 'Farm Magazine'. This function is executed by MACO through NAIS (Suzuki and Atsushi, 2002).

The Ministry of Rural Development, in 1965 established Agricultural Communication. They came up with a newsletter which was entitled 'Farming in Zambia'. This newsletter was established to provide information to the commercial farmers. Zambia Information Services in 1967 helped to initiate a communication department whose sole purpose was to disseminate agricultural technical information to the farmers especially the small-scale farmers. In this case, radio programmes, which were covered in the main seven languages of Zambia, were used to achieve this (Kalimbwe, 2001).

In 1967, Radio Rural Forum (RRF) was introduced. Its aim was to come up with radio programmes to use to disseminate information to farmers. The farmers were supposed to listen to the programmes in groups after which they were supposed to discuss and act on the information acquired. The programmes were broadcasted in the seven main Zambian languages.

In 1969, the Agriculture Communication was then transformed into a communication division and was renamed Rural Information Services (RIS). In 1989, RIS was then given the name of NAIS and in 1992 NAIS officially became a department of the extension Department. The Department currently has staff in all the nine provinces of the country (Kalimbwe, 2001). NAIS looks into the affairs of agricultural extension services throughout the country and its main role is to disseminate agricultural information and act as a mediator between the Government and the farming community. The overall mission of NAIS is to promote the adoption of proven agricultural technical innovation and farming skills among the farming community through the use of agricultural extension

services. NAIS also links the MACO to the other players in the agriculture sector and the farming community and it also produces audio and visual materials for use by agricultural extension workers. This helps to enhance the farmers' participation and thus improve their performance.

Chongwe District has a lot of potential in terms of agricultural expansion and therefore with access to the right information, the farmers stand a better chance of expanding their yields. There is need to ensure that the communication between the agricultural extension service providers and the small-scale farmers is very effective. There are currently about 20 extension workers in Chongwe District and a number of wind-up radios, which were donated by the Japan International Cooperation Agency (JICA) for purposes of communicating agro information to the farmers. Currently there are about 19 Radio Farm Forum groups in Chongwe District (Kalimbwe, 2001).

2.1 Statement of the problem.

Agriculture is still far from developed in Zambia. Provision of information to small-scale farmers in rural areas of Zambia has proved to be a problem for many years. Chongwe District is one example of these rural areas and therefore this study was focused on it. The Zambian Government has identified extension services as being one of the most important sources of information (Suzuki and Atsushi, 2002). To this effect, several agricultural projects and programmes have been introduced and implemented to small-scale farmers in Chongwe District through the agricultural extension services. Some of the projects currently running in Chongwe District include the Visit and Training Project and the Participatory Village Development in Isolated Areas (PaViDIA), which is a recent project. PaViDIA is a project, which aims at alleviating poverty in rural areas through total community participation. It was also established as a practical model for sustainable rural development in Zambia. PaViDIA uses a participatory method called Participatory Approach to Sustainable Village Development (PASViD). There is also the Out Grower Fish Farming Scheme and the Cassava project, which are aimed at

improving food security in the country. These are projects initiated by Zambia State Lottery. The programmes include the field days, demonstrations and radio programmes

However, what constitutes the basis of agro information that the agricultural extension service providers disseminate to the farmers in Chongwe District or how this information is initiated, is not clear since the farmers do not seem to be expanding their agricultural production. The questions raised in this study, therefore were:

- are the farmers involved in designing the information that is meant for their development since they have more knowledge of the problems that they face?
- is the information beneficial and relevant to the farmers?
- does the presence or absence of this information create any difference in agricultural production?
- what do farmers consider to be the best source of information among those offered by the extension services?

The above issues needed to be clarified because the farmers of Chongwe District have various needs of agro information, which is vital to their capability to increase production and consequently the wealth of the country. These concerns thus prompted this student to carry out a research, which would provide answers to the questions raised above and to evaluate whether or not the communication system currently running in Chongwe District is beneficial to the farmers.

2.2 Rationale of the study

Agricultural innovations have direct and indirect effects on the income and employment opportunities of the poor, especially the rural small-scale farmers such as those of Chongwe District. Chongwe District has some of the best farmland. If the Chongwe District small-scale farmers therefore adopt the new technology which is communicated to them by the agricultural extension services early enough and keep pace with the innovation, they stand a better chance of gaining from the direct effects of technological change.

It is clear that poverty is on the increase in rural areas. The Chongwe District farmers are facing a lot of problems such as infertile soils, difficulty in input acquisition, inadequate or no market for the produce and most of all, the droughts have also had adverse effects on yields. Most of the farmers do not have access to information. The best way therefore, to take information to these farmers is through agricultural extension services (E.I.U, 1999).

The agricultural extension services enables the farmers to have a one-to-one interaction with the extension field staff, thus enabling the farmers to ask questions where they are not clear. It allows for full participation of the farmers in problem identification, decision-making and finding solutions to the problems. The farmers are allowed and given a chance to initiate development ideas and innovations (CSO, 2003).

In recent years, agricultural extension services have been identified to be very important in popular education, public information and development education and thus improving the farmer's farming methods and techniques. Democratic and progressive nations now regard agricultural extension work as an important feature in development (FAO in Carey and Haberland, 1999).

The potential therefore of agricultural extension is evident. As described above, agricultural extension services can thus be helpful in improving the farmers' farming methods and techniques. They can also be helpful in increasing production efficiency and income and thus lead to better standards of living for the rural small-scale farmers as well as uplift their educational and social standards. In this case, sustainable development is achieved by equipping the farmers with life long skills and knowledge, which they can efficiently and effectively use in their farming. There is also the need to improve the efficiency and effectiveness of the extension system within the present framework and this is important and it is a big challenge for the Zambian Government.

With regard to the concerns discussed above, the intent of this study was to find out the prevailing situation concerning the flow of information between the agricultural extension service providers and the Chongwe District small-scale farmers. The study also intended to establish the participatory levels of the farmers in Chongwe District in decision-making.

This research was intended to lead to improved information flow between the beneficiaries (Chongwe District small-scale farmers) and the benefactors or the agricultural extension service providers who are NAIS, MACO and other stock holders, such as NGOs, not only in Chongwe District but also in other rural areas in Zambia where the study results can be applied.

Finally, very little research has been done in this field of agricultural extension services. This study will therefore in future improve and contribute to the existing body of knowledge on agricultural extension services offered to small-scale farmers, which was acquired from other studies done before. The study will also greatly contribute to agricultural policy formulation in Zambia by the Zambian Government. The more information the Chongwe District rural small-scale farmers acquire, the better their decision-making skills will be. The study will also contribute to the improvement of agricultural production thus leading to food security in the country.

2.3 Objectives of the study

The study was aimed at achieving the following, to:

1. determine whether or not there are effective agricultural extension services in Chongwe District.
2. determine the channels used by agricultural extension service providers to pass information to the farmers.
3. find out what type of communication methods/approaches are used in the agricultural extension services to disseminate information to the farmers.

4. identify which communication channels and approaches/methods the farmers consider the most appropriate and effective to use and why.
5. find out what type of information is passed on to the farmers from the agricultural extension services.
6. find out what type of information the farmers would like to receive more from the extension services.
7. examine whether the communication methods used in the agricultural extension services are participatory (who the initiators of information are) and to establish the impact of extension services in terms of raising awareness and changing behavior of farmers.
8. identify the problems being faced in the use of the mentioned communication methods and channels.
9. come up with possible solutions to the given problems.

2.4 Research questions

1. Are there any effective agricultural extension services in Chongwe District?
2. What channels are used in the agricultural extension services to pass on information to the farmers?
3. What communication methods/approaches are used in the agricultural extension services to disseminate information to the farmers?
4. Which communication channels and methods/approaches do the farmers consider the most appropriate and effective to use and why?
5. What type of information is passed on to the farmers from the agricultural extension services?
6. What type of information would the farmers like to receive more from the extension services?
7. Are the communication methods used in the agricultural extension services participatory?
8. Who initiates the information flow?

9. Is the information passed on to the farmers from the agricultural extension services relevant to them?
10. Is the information passed on to the farmers from the agricultural extension services tailored to suit their needs?
11. What is the impact of agricultural extension services on the farmers in terms of raising awareness and changing behavior?
12. What problems are faced in the use of the mentioned communication methods and channels?
13. What could be the possible solutions to these problems?

CHAPTER 3

CONCEPTUAL AND THEORETICAL FRAMEWORK

3.0 Introduction

Communication and participation are key components in the effective and efficient agricultural extension service system. Communication plays a very important role in equipping the farmers especially the rural small-scale farmers with the skills and technical know-how for increased and sustainable agricultural production and development of the country as a whole. Agricultural extension is considered to be an adequate means of enabling farmers to participate in the creation of development messages. In other words, since the farmers can ‘name their own world’, that is, they can identify their own problems and theorize the causes and effects of these problems, they should be able to participate in the communication process. Communication should therefore be suited to the farmers and be in context with the intended beneficiaries who in this case are the Chongwe District rural small-scale farmers.

3.1 Definition of key concepts

3.1.1 Communication

a. Communication:

is the exchange of information between individuals, friends, families, nations, regions and at the international level. Communication is also used to expound major socioeconomic development priorities to increase, for example, agricultural productivity, which in turn promotes social welfare or health of the people (Madzingira, 2001: p5).

is a process in which participants create and share information with one another in order to reach a mutual understanding (White and Ascroft, 1994: p155).

b. Agricultural communication:

plays an important role in stimulating and sustaining agricultural development. It is the process of passing on agricultural information to and from the cooperating partners (beneficiaries and benefactors) through the media (traditional and mass), extension services, publications and farmers' group meetings (Wood et al, 1990).

c. Participatory Communication:

is the social process in which groups with common interests jointly construct a message oriented to the improvement of their existential situation and to the change of the unjust social structure (Mody, 1991: p30).

3.1.2 Development

a. Development:

is the process of improving the quality of all human lives. It implies raising people's living standards, their incomes as well as their consumption levels of medical services, food and education (Todaro, 1977: p487).

b. **Participatory Development:**

its function is to serve as a tool for social transformation, a means for democratizing the mass media and play an important role in the selection of new technologies (White and Ascroft, 1994: p20).

c. **Development Communication:**

is the process by which people become leaders in their own development. This is the kind of communication that enables people to move from being recipients of external development to generators of their own development (Bessette, 1996).

3.1.3 Participation

Participation is the process of involving the community or beneficiaries of the intended development in identifying their problems and needs and equipping them with skills and the ability to find solutions to the problems.

3.1.4 Agricultural Extension Services:

is an organisation that ‘extends’ the results of agricultural research to farmers who then put the information to practical use. Agricultural progress depends upon people translating what they know and understand into actions, which will raise the productivity of their land and thereby improve their standard of living and welfare (Sandys, 1960: p7).

is a service which assists farm people through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living and lifting the social and educational standards of rural life (Maunder in Axinn, 1988: p2).

3.1.5 Agricultural Extension Worker:

is a bridge between the research worker and the farmer. His principle function is to interpret the results of the research work to the farmer in a way and in terms, which the farmer can understand (Sandys, 1960: P7).

3.1.6 Agricultural Extension System:

refers to an organisation like the Ministry of Agriculture, Department of Agricultural extension or perhaps to a Cotton Development Board's agricultural extension section (Axinn, 1988: p4).

3.2 Operational Definitions

3.2.1 Communication

Communication is not just a mere transfer of messages from one person to another. It is an interactive process, that is, a two-way process. In a one-to-one interaction, the sender of the message also becomes a receiver during the process of communication. There is no permanent receiver and sender. The roles interchange during the conversation. This means that at one point, one has to listen while the other talks and vice versa.

Communication plays a very important role in bringing about social change and development. For any person to change, he/she must acquire some useful information to bring about that change and for any person to influence another person to change, he/she must communicate or pass on ideas to this person through the process of communication.

Communication emerged as a new social science in the 1940s. It constituted theories, which were sender-oriented and it occurred in one-way systems or channels. It was

predominantly through mass communication and the messages were intentional and persuasive. The theories have, however, gradually shifted focus on the communication transaction as a dialogic human interaction where the sender now places importance on the needs of the receiver in the formation of messages. Meaning is now perceived as important and it should be shared rather than just information transfer. For communication to be effective, it should be a two-way and not a one-way process (White and Ascroft, 1994).

In order for communication to be effective especially when used for developmental purposes, it must be participatory. It reinforces the purpose of freedom, liberation, egalitarian ideologies and justice. This means that people must participate not only in identifying what information is needed but also in the process of message development and dissemination. Participatory development also reduces the possibility of conflicts between groups, communities and nations and that includes both the developed and the developing nations (White and Ascroft, 1994).

Effective communication should also have the following characteristics:

- a. It should be a social process: In this kind of communication there should be intentional sharing of knowledge, ideas or values between the communicator and the receiver/s. There should also be mutual interaction and interpretation whereas people are able to share their value, beliefs, traditions, cultures and so on. Communication in this case therefore becomes a continuous process where messages are passed on with the intension of affecting the latter's or each other's behavior.
- b. It should be in context: this means that communication in this case should suit the beneficiary's expectations, needs, wants, interests and their cultural traits such as beliefs, values, customs, norms, behavior or attitudes and perceptions of things. Communication in this case is contextual and this means that if the same communication is used in different contexts, it can be interpreted differently.

These different contexts may include: interpersonal context, small groups, public, Health, intercultural, mass media, organizational or applied situations such as family.

- c. It should involve shared meaning and individual interpretation: When we say that communication should involve shared meaning, this means that the communicators and those being communicated to, should share the same values, beliefs or norms for them to understand each other better. For instance, the type of communication that minibus drivers use may differ from that used by lawyers because these two groups have no shared meaning. Lastly, communication should also involve individual interpretation. This means that each individual involved in a conversation must come up with their own meaning.

In any country, an effective agricultural communication system is a central component of the extension programme. It plays an important role in stimulating and sustaining agricultural development. There is need for a two-way communication between the farmers and the agricultural extension workers. There should be feedback from both sides (Wood et al, 1990).

Two types of communication mentioned in the proposal will be defined so as to have a clear understanding of what they are. These are:

- i. **Interpersonal Communication**

This is the type of communication that occurs between two people or within a small group of people. The audience is homogeneous and feedback is immediate.

ii. Mass Communication

This is communication that occurs among a large, anonymous and heterogeneous audience. It uses electronic media such as television and radio as well as print media such as newspapers and magazines. Mass communication inculcate into people (most of which are illiterate) patterns of behavior likely to help them become active protagonists in different processes of social and economic change (Lihamba in Madzingira, 2001).

In communication, different channels of communication are used. In agricultural communication, both modern and traditional media are important. Modern media includes the electronic (television and radio) and print media, which includes newspapers or publications. Traditional channels of communication include folklores, traditional healers or medicine men, drums, flutes, gongs and rattles, as well as interpersonal communication, which may include riddles, proverbs, theatre or drama and social gatherings or use of opinion leaders. Among the electronic media, radio is used on a wider scale and is more popular than television. In Chongwe District, wind-up radios were donated by JICA, for purposes of communicating with the farmers. Traditional channels of communication, especially theatre, however are gaining popularity as the best source of information because they allow face-to-face interaction and discussion. There is also immediate feedback and community participation (Madzingira, 2001).

This study established which communication channel is more appropriate and effective among the Chongwe District small-scale farmers.

3.2.2 Development

According to Kasongo (1998) development in the earlier days, was viewed simply as a process of articulating ideas and information on development from the development

experts to the beneficiaries with the hope that the information would bring about social change and hence development. It was a top-down development approach where the benefactors simply trickled down the information to the beneficiaries. The beneficiaries were not involved in deciding what kind of development they needed. This development approach was used in the modernization theory by the western countries, which focused only on economic growth. It excluded the beneficiaries from participating in making development decisions. This is because it assumed that the beneficiary's participation would only lead to too many demands from them thus incapacitating the governments or development providers in reaching decisions on priorities.

Over the years, development has since been given a human face. It is the type of development that is centered on the people or is people-based and therefore, it is said to be for the people, of the people and by the people. This is what is known as participatory development approach.

This is the kind of development approach that is most suitable for the Chongwe District small-scale farmers. It envisions the beneficiaries acting collectively together in the key steps of development. These steps are as follows: collectively identifying and characterizing what the problems are; discussing ways in which these problems can be tackled; choosing suitable approaches from among the ways that have been discussed; laying out the steps that are needed to carry out the tasks involved, delegating these tasks, and identifying the materials needed, and the anticipated time-scale; acting collectively towards the desired change and finally; meeting at the end of the planned intervention in order to evaluate and lay down further responsibilities (Kasongo,1998).

Today, most development scholars and practitioners believe in beneficiary driven development. This approach of development came into being from the desire to make development contextual, that is, to suit the intended beneficiary's needs and to also make it sustainable. It is often said that when a person is allowed to do something on his own, such as building a house, he gains self-confidence in himself/herself and has a sense of lasting pride (Kasongo, 1998).

Development seeks to nurture and expand the beneficiary's capabilities and choices such that they can then use these capabilities to raise, maintain and sustain their living standards. Development thus entails equipping people with problem identification and decision-making skills so that they can identify their own problems and thus make informed decisions to solve these problems. Development projects today use the participatory development approach because it is the kind of development that is sustainable and thus outlives the project. When people are involved in development they become empowered and develop a sense of ownership, which is long lasting (Kasongo, 1998).

3.2.3 Participation

Simply put, participation means taking part. It is a basic need and human right and thus it should be accepted and fostered. Participation emphasizes the liberation of the individual and the community through sustained effort. It is the liberation of human beings towards the fulfillment of his/her desires to be free. Participation recognizes that every individual has knowledge, ability and experiences, which they can put to good use or share with others when allowed to participate (White and Ascroft, 1994).

It is the individual's awareness of the community through consciousness and individual's capacity to abstract thinking, conceptualizing and taking decisions, choosing alternatives and planning for social change (White and Ascroft, 1994).

3.4 Theoretical framework

In this study, four theories were useful in guiding the research. These included the Multi-Step Flow theory, the Social Marketing theory and the Diffusion of Innovation theory and the Agenda Setting theory. These theories are still applicable to the present day researches in order to yield good results and as such, they can be useful in guiding research or describing the relationship between variables. The Multi-Step Flow theory for example, is considered to be the best and surest approach to use in the process of

information dissemination because it suggests a number of ways in which information can be received by the beneficiaries.

In case of the Chongwe District rural small-scale farmers, they can obtain information from extension services through agricultural extension workers or the extension workers can suggest to them which channels they can use to obtain information from. These channels, for example, can be radio through Radio Farm Forums. The farmers can also use opinion leaders such as chiefs, as their source of information. Interpersonal communication is also another way to get information.

In order to have an effective research, it is good to use different theories and not just one so that, the limitations of one theory are covered by another. Therefore, in rural areas, where radios are not easily accessed, agricultural extension workers or interpersonal communication can instead be utilized as sources of information.

i. Multi-step Flow Theory:

This theory suggests that there are a number of steps involved in the flow of information and communication. It suggests that apart from the audiences getting information only through opinion leaders as the Two-Step Flow theory suggests, there are a number of other ways in which audiences can get information. The Two-Step Flow theory suggests that an opinion leader is a person who has greater access to information content or subject matter than the other members of the group and therefore has power to influence. The audience can also get information straight from the mass media or through interpersonal interactions or contact with other members of society. The theory suggests that every community has a network in which information flows. When one person learns about something, they pass on the information to their neighbors who in turn also pass the information on to other people (Rensburg, 1996).

The Multi-Step Flow approach was used in this research for guidance. In Chongwe District, different channels of communication as the theory suggests can be used to disseminate information to the farmers. Therefore, there is need for agricultural extension service providers to carefully plan how to reach the farmers in Chongwe District by using different extension methods. One of the important extension methods that can be used is working with opinion leaders. The agricultural extension service providers need to identify key people, that is, opinion leaders such as chiefs or village headmen, in the community who can help them not only to disseminate the information but to also facilitate dialogue and foster collaboration. These people can help to reinforce the acceptance of information since they command a lot of respect from the people and they are perceived as being more knowledgeable. Since most of the rural areas are not easy to access, agricultural extension service providers can take advantage of local leaders to help them by training them or equipping them with the necessary information. The leaders can in turn pass on the information on behalf of the agricultural extension service providers to the rest of the community.

Apart from the method mentioned above, the Chongwe District rural farmers should also be provided with or encouraged to get their information directly from mass media. In the Zambian rural areas, the best form of mass media is the radio. Chongwe District recently received wind-up radios and therefore these can be put to good use.

Finally, the rural farmers can be encouraged to establish information networks by sharing any useful agricultural information that one comes across through interpersonal interaction. This means that when a person acquires useful agricultural information, he/she can pass it on to the next person, and the next until it is spread throughout the village.

According to a survey done by JICA (2002), The farmers of Chongwe District showed preference to interpersonal interaction as the best source of acquisition of agro information. It was ranked as number one in terms of information source or channel.

ii. The Social Marketing theory:

According to Elkamel (1986: p2) the use of communication for social or cultural development has been referred to by different names, the most recent being 'Social Marketing'. This term encompasses more of the elements essential to promoting the adoption of socially desired ideas and behavior.

This theory attempts to show the importance of communication in activities such as advertising, promotion, publicity, public relations and personal selling where people are motivated to use services, beliefs, patterns of thinking or ideas. The target market (audience) is made aware of the offer through communication and likewise communication about the target market's needs, wants and resources is important to the agricultural extension service provider. Social marketing is also used to increase the acceptability of an idea. The whole concept of using the social marketing approach is to change the manner in which the individuals or communities lead their lives by transforming adverse or harmful practices into productive ones. It is also used to change attitudes and values in the entire community (Rensburg, 1996).

In this research, Social Marketing entailed selling of socially desired agricultural advice, ideas, beliefs or patterns of thinking to the Chongwe District small-scale farmers. The agricultural extension service providers can use different tools to try and sell this information to the farmers. He/she can regularly visit the farmers, hold meetings, workshops or seminars with them, do demonstrations in order to effectively communicate and thus endeavor to bring about the desired behavior change. The survey by JICA (2002), showed

that farmers in Chongwe District ranked the demonstration method as the most effective in information transmission and selling or marketing of socially desired agricultural ideas. This theory helped to confirm the idea that the use of different tools by agricultural extension service providers to disseminate information to the farmers in Chongwe District helps in behaviour change.

iii. Diffusion of Innovation Theory:

As is the case in most communication actions, the outcome of the diffusion process is supposed to be change. This is often supposed to be behavioral change. The intermediary steps in a decision process are considered to be changes in terms of knowledge and attitudes. Other theories are usually only primarily interested in how people receive information and then distribute it. Diffusion of innovation theory on the other hand focuses more on whether and how people adopt or reject an innovation. Rensburg (1996: p48) defines an innovation as; “an idea, practice or object that is perceived to be new by an individual or other unit of adoption.” Diffusion on the other hand is defined as; “the process by which an innovation is communicated through certain channels over a period of time among the members of a social system.” A researcher is mostly interested in the adoption process in which people are confronted with an innovation and they react to it in some way.

The diffusion process has different stages of adoption and they are as follows: the awareness stage where the would-be adopters of the innovation first encounters or become aware of the innovation. The second stage is the interest stage where the people, because of curiosity seek more information about the idea or product. The third stage is the evaluation stage where the people use what they have learnt to assess or appraise the possible value to their situation. Further information or advice is usually gathered. The fourth stage is the trial stage where the people try out the idea or product usually on a small scale.

The last stage is the adoption stage where the people accept the idea or product and integrate it into their operation.

The Chongwe District small-scale farmers form a social system. The farmers get their information about an idea or product from the agricultural extension service providers, which is their role in the process of social change. Therefore, the agricultural extension service providers make the farmers aware of the idea or product. They also supply them with further information for the interest and evaluation stages. It is very important that the farmers first try out the idea or product on a small scale before they can try it on a larger scale just in case it fails to materialise. It is always advisable to start a project on a small scale because this way apart from not taking too much risk, it is also easier to monitor and evaluate the project.

The diffusion of innovation was thus useful in this research. The farmers have to go through the different stages of the adoption of an innovation process because every stage is important.

iv. Agenda Setting Theory:

According to Green (2000), this theory is based on how mass media puts an impact on society through the transfer of news items. It asserts that although the mass media does not tell us what to think, it however, tells us what to think about through framing and priming. Framing is when the media brings to our attention some aspects of reality while ignoring others, which might cause the recipients of the message to have different reactions. Priming on the other hand is when the media puts a lot of emphasis on a certain issue to increase its importance and bring up old memories.

Farmers in Chongwe District own wind-up radios which were donated by JICA. Although there are arguments about the effects of the mass media, the

Chongwe District farmers can learn a lot from the agro messages, which they receive from the agricultural extension service providers via mass media, such as radio, which is easily accessible for them. This study shows that the farmers cited radio broadcasts as being one of the most important sources of agro information for them. More over through priming and framing, the farmers of Chongwe District can receive developmental issues thus changing their focus so that they concentrate more on beneficial activities, which are relevant to the improvement of agricultural production.

CHAPTER 4

LITERATURE REVIEW

The small-scale agricultural sector will continue to be very significant in developing countries for a long time to come. The rural area currently houses the majority of the population and most of the disadvantaged people live in rural areas. This means that agriculture will remain one of the major means of livelihood for these people in the foreseeable future. Agriculture is also important for the rural people because it absorbs those who cannot be absorbed by the non-agricultural sector whose absorption capacity is very low. Lastly, those people who are employed in the non-agricultural sectors are often vulnerable economically, especially those in the lower income brackets. In this case therefore, a socially steady and commercially viable small-scale agricultural-sector, is thus important because it can act as a buffer in reducing economic vulnerability in cases where economies are in transition.

In view of the importance of agriculture in rural areas therefore, it is important that the rural small-scale farmers receive the necessary and appropriate information in order to spearhead development. Information is a key factor in the spread of development and it acts as a lubricant for the fabrics of rural areas and thus contributes greatly to the spread of development. It is often said that ‘information is power’ and therefore it is mandatory that the rural small-scale farmers receive the information that they need (FAO, 1994).

According to FAO (1994), most rural areas, including those of Zambia have limited or no access to information. In the ‘information society’, usually also referred to as the ‘post industrial society’, information is now considered more important than energy as the basic component of economic development. For people to develop, even when they have the resources, they need to have knowledge and information on how to use these resources. Zambia, for instance is richly endowed with natural resources but they are not adequately and fully exploited because people lack adequate and appropriate information and knowledge to take advantage of these abundant resources.

Agricultural extension services have been identified as one of the best medium of information dissemination to rural areas. The extension services can be provided through field workers, radio, television or through publications such as ‘Agriculture Today’. Ever since man learnt how to domesticate certain animals or select, protect or discourage certain plants, the function of learning has been an essential component of agriculture and rural life (Axinn, 1988).

Learning, through the ages has been considered to be just as vital as marketing of outputs or supply of inputs and it is found in every rural social system in the world. Axinn (1988: p13), further adds on that,

as human beings become more specialized in particular functions over the years, learning has been divided into education and research. Within education, two major types have emerged: formal and non-formal education. When non-formal education has focused on improved agricultural production supply and marketing, it has been called agricultural extension.

Through out the world, various systems of agricultural extension are found. These systems have a long history and are constantly changing. Agricultural extension organisations today may trace their origin to itinerant instructors of agricultural schools, then to horticultural societies, to rural community fairs, to government bureaus, which were created to protect against inflow of plant and animal disease and also to import new crops. Agricultural extension also started as formal schools, for rural youth or for degree training. These developed ‘extension’ arms and the function was to reach out into the community with the issue that had been discussed in the classroom. The name ‘extension’, therefore, has its roots in this concept (Bailey et al in Axinn, 1988). Bailey et al in Axinn (1988), further explains that other agricultural extension works started as a natural out growth of agricultural research farms. Germany chemists, for example, in the United Kingdom began to apply science to agriculture. The scientists did this research as

a request from the farmers who needed the information, which was generated from these researches.

For most African, Asian and Latin American countries, during the period of colonialism agricultural extension was introduced to many countries as an instrument to increase production of crops to be exported to the metropolitan centers. For many industrialized countries, extension branches of the government were used to increase the productivity of rural people so as to ensure that the cities had cheap food, that the urban industries had a good supply of agricultural raw materials and also to ensure that there were exports to improve trade balances. Sometimes in the cases where the rural people had sufficient political power, agricultural extension was controlled by farmers' organizations. When this happened, extension was used to enhance the quality of rural life (Axinn, 1988).

In the 1900s, agricultural extension was soon recognized, as one of the means for agricultural modernization and rural development of the developing countries by bilateral, multilateral and international development assistants.

Over the years, the contributions of agricultural extension services to agricultural and rural development have been many and varied. Some of the best examples of this have been the increase in production of food and fiber. According to Axinn (1988), some of the recent examples include the rapid spread of short-stemmed varieties of wheat, maize and rice in many parts of Asia, Latin America and Africa. Agricultural research systems normally introduced these varieties while agricultural extension often provided the interface, which made them known to farmers. The extension personnel facilitated the communication of messages on such issues as the new improved seed, fertilizers and also about water requirements and other necessary cultural practices. It is therefore evident that in countries where there has been substantial gain in agriculture, agricultural extension was seen to perform its significant performance. Other significant contributions of agriculture extension were helping the rural people learn about skills of organisation and leadership and helping organize the rural youth clubs. They also helped to implement various types of locally appropriate youth activities. These activities were designed to

encourage the spread of scientific agriculture and help to prepare the next generation for rural leadership.

Sison in Axinn (1988) cites the Masagana 99 Programme of the Philippines as one of the best examples of a typical successful story of agricultural extension. 'Masagama' means bountiful and '99' signifies or quantifies the goals of the programme, which are to increase yields up to 99 cavans of palay (the un milled rice) per hectare. One cavan is 44 kilograms, making the goal of reaching approximately 4.35 tons per hectare. Sison points out that there were three major means of achievement used in this programme,

1. Intensification of agricultural extension methods and massive information campaigns
2. The correct use of recommended rice production methods, such as the use of high yielding rice varieties, weedicides and fertilizers as well as the adoption of good agricultural practices
3. Linkage of crop production loans with marketing as an incentive to farmer cooperation to produce more.

Sison notes that the Masagana 99 programme was rated a success because it brought economic and social development. The farmers were able to double their net income. This programme substantially augmented the farmer's income and completely revolutionized the farmer's farming habits throughout the Philippines and it also brought about the attainment and maintenance of self-sufficiency in rice growing. The programme also had an effect on the national level where it triggered the multiplication and expansion of the country's irrigated farms.

In Indonesia, the programme called 'The Bimas' is another example of the successful contribution of agricultural extension services. This programme also yielded positive results. According to Adjid in Axinn (1988), one of the major contributing components of the success of the Bimas programme was agricultural extension. From 1974-1982, the numbers of extension personnel in the field expanded about three times as a medium of

dissemination of appropriate and necessary information to the farmers. Dry stalked paddy rose from 3.9 million metric tons to 19.9 million metric tons.

Carol and Engle (1989) carried out a research on agricultural extension services in aquaculture in Liberia. In Liberia the extension programme started more like the fisheries programme in other countries. Some Peace corps volunteers and Liberian technicians, covered large areas of the country to work with farmers who were interested. The aim was to build ponds to introduce fish culture to as many people as possible. This project however, was not very successful. New extension in fish culture was then introduced with the Nimba County Rural development Project (NCRDP) in 1979. This project was conceived as a multisectoral integrated approach to development by the Government of Liberia and the Federal Republic of Germany. The objectives of the project were to increase rural fish supply and to increase rural cash income. The project outputs were training of farmers and extension staff, providing extension and advisory services to farmers as well as establishing district fish hatcheries. The beneficiaries of the project were rural communities of non-coastal countries in the hinterland.

The extension and advisory services were, delivered jointly by the NCRDP Agricultural Extension and Training Section and Peace-corps/Liberia. This project was based on the six-year cycle in the Democratic Republic of Congo. The task of the project was to develop small fish farms made up of several large ponds, rather than work with many farmers and their isolated ponds like in the past. The extension programme was designed around clusters of farmers within reasonable distance and the idea was that these farmers would give each other moral support, fingerlings, advice and physical help for construction and harvesting. Material support was gradually withdrawn but not the technical support. The results of the extension services offered were the farmer's increase of multiple pond systems as a productive farming enterprise and ultimately increase in their income and standard of living. The project also brought about the utilization of good farmers who were more effective than volunteers or the other technicians to communicate technology to other farmers in the local language.

Carol and Engel (1989) also carried out another research on extension services in aquaculture in Rwanda. In Rwanda, after several approaches had also failed there, a new approach was initiated in 1982, which focused on intensive training and extension in addition to research. One of the reasons why earlier projects failed was that little effort was made to adapt fish culture technologies and extension programming to local conditions. In the new approach, the extension project began training extension agents in 1983. Farmer's opinions and observations were also sort for and a series of production and yield trials at various project-operated fish stations were done.

The methodology of the extension was based on the premise that, to ensure an effective transfer of ideas from agents to farmers, it was suggested that the two parties develop an intimate relationship and this could only happen if they kept in constant contact. The extension workers were encouraged to work with fewer farmers than a lot of them for more effective and efficient interaction. Emphasis was placed on quality rather than quantity results. The extension agents worked within a 15-kilometer radius zone, which they covered by bicycles. The workers visited 10 to 15 sites in each zone and the zone was arranged in such a way that the sites were situated on 5 major axes like the spokes of a wheel with the agent's home as a hub. Therefore, each day of the week, the agent traveled along one axis and the schedule was repeated weekly. The same axis was followed the same day of each week.

The primary objective of the project was to renovate the existing fish ponds and one key element of achieving the project's goal was to have qualified field personnel who would be able to transfer appropriate technical knowledge to fish farmers to obtain the desired and improved yields and therefore the agents underwent intensive training and attended a number of workshops. They also visited the rural fishponds, which were considered to be exemplary. Apart from that, they were also provided with technical backstopping from the University graduates. The continual provision of relevant and appropriate technical information to farmers by the extension agents contributed to the growth of the fish industry in Rwanda. The primary aim of the agricultural extension service in Rwanda was

to regulate the growth of the aquaculture industry for long term sustainability rather than to achieve short-term dramatic expansion.

In India, there have been a lot of testimonies from farmers about how agricultural extension services have helped them to increase their yields and thus improve their living standards. Benor and Harrison (1977) have shown how agricultural extension services have played a major role in uplifting the living standards of many rural Indian farmers. They identified a number of guidelines that were introduced that contributed to the success of these agricultural extension services in boosting agricultural production in India. These include the Training and Visit System, which entailed clearly specifying schedules of work, duties and responsibilities and close supervision at all levels. The number of farmers visited by the extension workers was kept small and manageable. The extension workers were also properly trained so that they could have more confidence in their work and thus this made them better at convincing the farmers.

Another guideline was what they called the concentration of efforts. This meant that efforts were concentrated only on agricultural extension rather than spreading them on a wide range of activities. The reason for doing this was to achieve a clear, visible impact and continued progress. The extension workers concentrated only on the most important crops, the few practices that would bring the best economic results and the training sessions only on the most important points. The best use of available resources was another guideline that was followed. One of the fundamental concepts of the new approach was to teach farmers to make the best use of the available resources. Some cultural practices were encouraged in this case rather than concentrating on increased use of purchased inputs. These practices include, better land preparation, improved seedbed, seed treatment, weeding, timely operations and proper spacing of plants. The practices were known to produce sure results and therefore the farmers faced little risk. Their adoption also required little cash expenditure.

Recommendation according to ability was another principle and this one required that the farmers adopt the above-mentioned practices first only on a small part of their land so as

to reduce the farmer's risks and hesitations. It allowed the farmer to compare the results of the improved practices with the traditional practices in the farmer's own fields and since the practices were well known and tested, they could easily be fed into the agricultural extension system without any time consuming and elaborate screening and trial processes. The other guidelines were research and supply of inputs and credit and finally the continuous improvement. It was recommended that there be a link between research and extension so as to reduce the gap between the already existing agricultural practices and the research findings. Extension was linked to a vigorous research programme, which was well tuned to the needs of the farmers and continuously provided feedback to the farmers. The links between the extension and input supplies and credit was carefully defined and developed. Finally, The agricultural extension services had to have a built-in process for continuous adaptation to changing conditions and modification of the farming systems.

Benor and Harrison (1977: pp51-52) further give an example of an Indian farmer who followed the above mentioned extension guidelines to improve his agricultural production. A thirty four year old small-scale farmer called Shri K. N. Deb Goswami in Nowgong, in the state of Assam of North East India, adopted and used most of the above mentioned extension guidelines to increase his yields in paddy (rice) and jute. Initially his yields were not as good until the agricultural extension service using the training and visit programme conducted by the Village Extension Worker introduced him to new farming methods and gave him sound technical advice in April, 1976. He adopted the line sowing on all of his 3 acres, grew seedlings for his entire land in raised seedbeds and provided sufficient spacing and plant population and also gave top dressing of fertilizers at the rate of 60 kilograms per hectare. This he supplemented by farmyard manure and took care to remove the weeds and also learnt to use pesticides and cure plant diseases. He possessed the technical knowledge of agriculture and his yields increased. Goswami even contemplated growing wheat and winter vegetables as per advice from the Village Extension Worker whose presence and advice he learnt to treasure. Goswami also learnt a lot about inputs, land and water management from the extension worker and he gave advice to fellow farmers in his extension group on agricultural practices and input use.

Agricultural extension has also greatly contributed to helping rural people to organize many types of groups. These groups have then in turn provided the key 'receiving mechanism' for the messages sent by agricultural extension and other agencies trying to influence rural people especially where the numbers of agricultural extension personnel are quite low. Agricultural extension has assisted a lot of organisations in their early formulation. Some of these organisations include the Small Farmer's Development Programmes in Nepal and Malaysia, many of the Soil Conservation Districts of the United States of America, Community Forest Plantations in Malawi and Radio Listeners Groups in Columbia and India. The formation of the above stated organisations was a deliberate action by the respective country's agricultural extension system to encourage the spread of information so as to boost economic development.

In Zambia, agricultural extension can be traced as far back as the colonial period. The provision of agricultural extension advice was biased in favour of the European farmers. The extension advice, which came from the Department of Agriculture, was primarily directed towards the settler farmers through out the colonial period. Africans on the other hand received little or no extension service before the 1940s for fear that the Africans would force the settlers off the land if they increased their production. By the 1950s, staff posts for African agricultural extension were created and training schools were also created but the support they received was not as adequate as that of the settlers (Baldwin in Wood et al, 1990).

After independence in 1964, the Zambian Government started redirecting the extension services towards the local farmers. This was aimed at increasing the local's participation in market-oriented agriculture. The Government came up with initiatives such as African Settlement Schemes and Cooperatives. Unfortunately, as is still witnessed today, the extension services were concentrated only on the relatively small elite, that is, 'emergent' or semi commercialized farmers and the commercial farmers. The bulk of the rural population classified as villagers, were given little or no extension advice (Wood et al, 1990).

The Government's agricultural policy, during the mid-1970s, increasingly started stressing the need and importance of involving the majority of rural households. This was as a response to Zambia's philosophy of 'Humanism' and the foreign exchange situation, which made it difficult for long-term sustainability of farming based on imported tractors, fertilizer, chemicals and fuels. The decline in copper mining was also one of the causers of the growing importance of agriculture in the economy. It was noted that increased agricultural production, would be achieved through, the adoption of improved farming techniques by the rural producers. The innovations included more timely planting, use of composite seeds, better weeding, more efficient harvesting and storage and improved spacing of plants (Wood et al, 1990).

Introducing these innovations however, was difficult because of a number of reasons. The number of households needing agricultural extension services increased meaning that there was need for more extension workers. The extension staff lacked accommodation and this soared their motivation and morale. The numbers of the staff therefore declined. The post-independence pressures on Extension Branch to serve farmers throughout the country and to give more attention to the small-scale farmers, led to the supervision of extension agents by the District Agricultural Officer who regularly toured the district. The expansion in the number of extension staff raised the operational costs such as fuel, vehicle repairs, stationery, night allowances and in-service training and this prevented the tour exercise from being adequately executed (Wood et al, 1990).

In 1978, a programme was introduced which reorganized the extension branch. This included the training and visit system, the Lima programme, farmer training and increased interaction between extension workers and research. The Training and Visit programme was started in 1978 by the Department of Agriculture. Each District was divided into four to eight blocks. Each block had a supervisor who was appointed to maintain fortnightly or monthly contact with all the camps in the block. The field staff had seasonal and monthly programmes of work so as to make sure that they had regular programmes of visits to farmers. They also had specific objectives for each target group

at different times of the year. One of the advantages of the Training and Visit approach was that there was intensified contact between the extension workers and the farmers. There was also larger coverage of farmers by using farmer groups and also increased staff motivation as a result of greater supervision, use of detailed work programmes and regular in-service training (Wood et al, 1990).

The Lima programme was, introduced in 1979 by the Department of agriculture. The programme was, designed by scientists from the research branch and the extension officers. The main aim was to facilitate the adoption of proven technological packages by small-scale farmers and the efficient use of inputs and intensifying production on areas of land smaller than one hectare. The Lima programme, was supported by several donors (Wood et al, 1990).

The farmers under the Lima programme were trained by extension services through field visits by the staff who were based at extension camps. The high costs of running these training programmes caused a decline in these programmes. Courses were then run within the villages at the request of the farmers. Another programme that was introduced was the linking of the extension and research workers with the aim of improving the generation and dissemination of appropriate technical messages for small-scale farmers (Wood et al, 1990).

One good example where extension was useful in Zambia is at the Lint Company of Zambia (LINTCO), which runs an efficient extension service for cotton, coffee and Soya bean farmers to improve crop husbandry practices and therefore, increase yields. In this case, the extension officers at provincial, district and camp level, were seconded to LINTCO by the department of Agriculture. The extension worker's job descriptions were formulated by LINTCO, which also provided the workers with essential necessities such as allowances, transport and specialized training. The work of these extension farmers was to give advice to farmers about how to grow any crop but with emphasis placed on cotton growing. They made sure that the farmers knew the pest control practices to follow and the proper crop management. These extension workers were supervised

regularly as a means of keeping them motivated. The workers underwent training to enable them to keep abreast with new cultivation practices, pest control methods and techniques for improving the quality of cotton and how to cope with the constantly changing developments in the cotton industry. The extension workers were thus basically provided with the knowledge and skills to service the farming community. These services offered to the farmers, especially the cotton growers, by the extension workers, enabled to increase their yields (Wood et al, 1990).

Extension services today are still being offered to farmers through NAIS. However, the liberalization of the economy has left farmers to fend for themselves in terms of agro information acquisition and they are almost incapable of obtaining appropriate and necessary agricultural information. Most of the farmers have little knowledge of how to obtain their inputs and loans especially that the traditional government sponsored channels are no longer in existence.

It was important therefore, that it is established as to how agricultural extension services are offered in the quest to empower the farmers. It is not clear however, how relevant and appropriate the information passed on to the farmer especially that the information is meant to improve the farmer's farming methods and their ability to make better and informed decisions especially when it comes to storage and marketing of their inputs?

CHAPTER 5

METHODOLOGY

5.0 Research Design/Data gathering

In this research, both the quantitative and qualitative research designs were used. Triangulation was used in this research so as to achieve more accurate results. Both research methods have their advantages.

5.1 Methods

5.1.1 Survey

A questionnaire was administered to the farmers as a means of gathering data. The questionnaire had closed ended questions (quantitative) so that numbers would be used. The use of numbers permits precision and allows for the use of mathematical tools for analysis such as percentages. A minimum number of 80 questionnaires were distributed to the small-scale farmers of Chongwe District in order to gather demographic and psychographic data. Chongwe District has 5 farming blocks, which are divided into 30 camps. Due to proximity and transport problems, questionnaires were distributed in only 2 blocks out of the 5. These are namely the Chongwe block, which has 6 camps and Bunda Bunda block, which has 7 camps. In Chongwe block, 30 questionnaires were administered in 1 camp called Shellen and in Bunda Bunda block, 30 questionnaires were administered in Nyangwena camp and another 30 in Chiyota camp.

5.1.2 In Depth Interviews

In-depth interviews were also used to gather data from 2 agricultural extension staff and 1 community leader. This is a qualitative method where unstructured discussions were conducted with the staff. Knowledge is created in the process of interaction and not

discovered. The role of the researcher was therefore to interpret the information rather than predict it. This method allowed for more probing and in-depth understanding on the part of the researcher.

5.2 Sampling Procedure

For the survey, farmers were sampled using a probabilistic sampling method. This method was used to ensure that every member of the community of Chongwe District had a non-zero chance of being picked for questioning in the research. The samples included both male and female. The first house for the survey was picked randomly since there are no proper streets in Chongwe District and the houses in the villages are scattered. The remaining houses were also picked randomly.

Extension workers and community leaders in Chongwe District according to my findings are very few. This meant that they were purposively selected for an interview.

5.3 Data Analysis

The findings of the research were analysed using the computer data analysis programme, Statistical Package for Social Sciences (SPSS).

5.4 Limitations of the study

The biggest limitation in this study was that there was limited data on agricultural extension services, especially for Zambia. This led to having very little data for literature review and few case studies to make reference to. Resources, especially financial resources were a limiting factor since the researcher was self-sponsored. This made it difficult to meet the intended target of 100 questionnaires to be administered to the farmers. Skewed data and lack of time also contributed to this

CHAPTER 6

FINDINGS AND DISCUSSION

6.0 Demographic information of the Chongwe District small-scale farmers

6.1 Sex

The study covered both male and female. Due to the random sampling method used, there were more men than women in the study. The percentage of male respondents was 52 and the female respondent’s was 28 as shown in table 1 below.

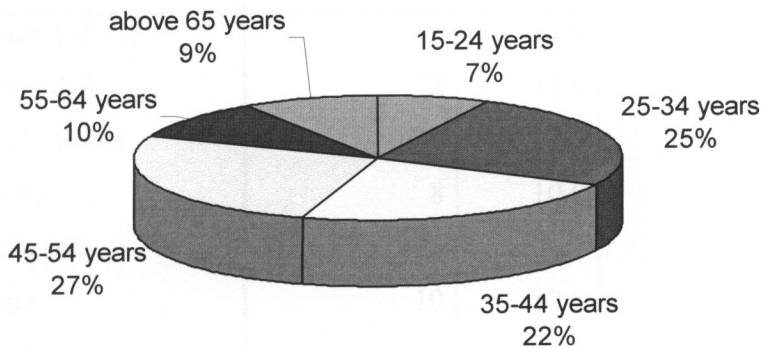
Table 1. Sex of the Respondents

		Frequency	Percent
Valid	Male	52	65.0
	Female	28	35.0
	Total	80	100.0

6.1.1 Age

The study covered all the age groups, which included the youths, middle aged and elderly people. The age group of the respondents ranged from 15 years to those over 65 years. The majority however, fell in the range of 25-44 years (47%) and 45-64 years (37%) as shown in the chart below.

Age of Respondents



■ 15-24 years ■ 25-34 years □ 35-44 years □ 45-54 years ■ 55-64 years ■ above 65 years

6.1.2 Nationality

All the respondents who were included in this study are Zambian.

Table 2. Nationality of the Respondents

	Frequency	Percent
Valid Zambian	80	100.0

6.1.3 Education

The study revealed that most of the Chongwe District farmers have not gone beyond Grade 7 where formal education is concerned. About 12.5% have no education at all and about 38.8% have only gone up to Grade 7. The table below also shows that those who have gone beyond Grade 9 are only 33.8%.

Table 3. Education of the Respondents

		Frequency	Percent
Valid	Grade 1-7	31	38.8
	Grade 8-9	12	15.0
	Grade 10-12	18	22.5
	College	8	10.0
	University	1	1.3
	None	10	12.5
	Total	80	100.0

6.1.4 Number of family members per household

The study shows that most of the households of the farmers do not have large numbers of family members. The numbers of children under 17 years are concentrated between 2 to 4 children for most households, while the numbers of the adults are concentrated between 1 to 4 per household.

6.1.5 Position of respondent in the Household

Most of the respondents who participated in this study (78.8%) are household heads. 15% of the women folk, are spouses to the household heads. The rest are children and relatives who are few in number.

Table 4. Position of Respondent in the Household

		Frequency	Percent
Valid	Household head	63	78.8
	Spouse to household head	12	15.0
	Child	4	5.0
	Relative	1	1.3
	Total	80	100.0

6.1.6 Source of Income

As shown in the table below, the most important source of income for all the respondents is farming (100%). Apart from that, at least 50% of the respondents also engage in other businesses for their source of income. Some own groceries while others hire out farm machinery such as tractors. The other sources such as beer brewing, charcoal burning, fishing and carpentry are also considered as important sources of income though they are secondary sources.

Table 5. Source of Income for the Respondents

	Source of Income	Frequency	Percent	Number of cases
1	Farming	80	100.0	80
2	Salaried job	11	13.8	80
3	Beer brewing	3	3.8	80
4	Charcoal burning	8	10.0	80
5	Fishing	3	3.8	80
6	Carpentry	2	.5	80
7	Business	40	50.0	80

* n=80
* Percentages do not add up to 100

6.1.7 Settlement

Most of the respondents, about 73.8% have lived in Chongwe District for over 9 years as shown in table 6 below. A few (13.8%) have lived there over 5 years and the rest have only been there for less than 4 years.

Table 6. Respondent’s period of settlement in Chongwe District

		Frequency	Percent
Valid	Within the past year	1	1.3
	1-2 years ago	3	3.8
	3-4 years ago	6	7.5
	5-6 years ago	8	10.0
	7-8 years ago	3	3.8
	Above 9 years	59	73.8
	Total	80	100.0

6.2 Characteristics of the respondent’s farming activities in Chongwe District

6.2.1 Size of land owned and cultivated

As shown in the tables below, the majority of the farmers in Chongwe District own less than 8 hectares of land and cultivate less than 4 hectares. Those who own less than 8 hectares comprises 72% and the rest own over 8 hectares. Over 68.8% cultivated less than 3 hectares of land last season. This therefore, shows that most of the farmers in Chongwe District, almost 3 quarters, belong to the subsistence group of farmers. Only about 2.5% of the farmers cultivated over 15 hectares of land, therefore, belonging to the group of emergent farmers.

Table 7. Size of Respondent’s land

		Frequency	Percent
Valid	Half- 3 hectares	26	32.5
	4-7 hectares	31	38.8
	8-11 hectares	10	12.5
	12-15 hectares	7	8.8
	16-18 hectares	1	1.3
	Above 19 hectares	5	6.3
	Total	80	100.0

Table 8. Size of land cultivated by the Respondents

		Frequency	Percent
Valid	Half- 3 hectares	55	68.8
	4-7 hectares	15	18.8
	8-11 hectares	7	8.8
	12- 15 hectares	2	2.5
	None	1	1.3
	Total	80	100.0

6.2.2 Agricultural products produced by the respondents in the past season (2005-2006)

The results of the study show that the majority of the farmers are engaged in both the production of crops and rearing of animals. The crop, which was grown more than the others according to table 9 below in the past farming season is maize, which makes up 98.8%. The respondents also grew quite a substantial amount of groundnuts (75%), followed by sweet potatoes at 42.5%. The respondents reared a number of chickens and goats. Only a small number of respondents (40%) as shown in table 12 kept cattle, which is one of the important means of cultivation for small-scale farmers. The study shows that over half of the respondents (56%), cultivated crops for home consumption only. Very few had surplus for sell and those who did sell some, sold less than 5 bags (25kg and above). Most of the respondents (above 64%) also sold very few animals in the past season. The animals are kept more for home consumption than for commercial purposes. The scenario shown above is a typical small-scale or subsistence farming scenario.

Table 9. Crops produced by the Respondents in the past season

	Crops	Frequency	Percent	Number of cases
1	Beans	24	30.0	80
2	Maize	79	98.8	80
3	Cotton	14	17.5	80
4	Sorghum	2	2.5	80
5	Groundnuts	60	75.0	80
6	Cowpeas	29	36.3	80
7	Sweet potatoes	34	42.5	80
8	Soya beans	10	12.5	80
9	Okra	2	2.5	80
10	Cassava	2	2.5	80
11	Water Melons	2	2.5	80
12	Sunflower	2	2.5	80

* n=80

* Percentages do not add up to 100

Table 10. Marketable Surplus

	Frequency	Percent
Valid Yes	35	43.8
No	45	56.3
Total	80	100.0

Table 11. Number of bags sold

	Frequency	Percent
Valid 1 bag	3	3.8
2 bags	1	1.3
3 bags	1	1.3
4 bags	1	1.3
Above 5 bags	29	36.3
None	45	56.3
Total	80	100.0

Table 12. Animals kept by the Respondents

	Animals	Frequency	Percent	Number of Cases
1	Goats	51	63.8	80
2	Cattle	32	40.0	80
3	Chickens	75	93.8	80
4	Pigs	7	8.8	80
5	Pigeons	1	1.3	80
6	Ducks	8	10.0	80
7	Rabbits	1	1.3	80
8	Donkeys	1	1.3	80
9	Sheep	1	1.3	80
10	Guinea Fowls	1	1.3	80

* n=80

* Percentages do not add up to 100

6.2.3 Means of cultivation and Ownership

Most of the respondents (87.5%) said that they used hand hoes for cultivation in the past farming season. Oxen were also used by 71.3% of the respondents. These means of cultivation are commonly used in subsistence or small-scale farming where produce is mostly for home consumption than for sale. Tractors and Donkeys were only used by 5% of the respondents. Over 60% of the respondents said that they own the means of cultivation while others hired some.

Table 13. Means of cultivation

	Means	Frequency	Percent	Number of Cases
1	Hoe	70	87.5	80
2	Oxen	57	71.3	80
3	Donkey	2	2.5	80
4	Tractor	2	2.5	80

* n=80

* Percentages do not add up to 100

Table 14. Ownership of means of production

		Frequency	Percent
Valid	Own	50	62.5
	Hired	14	17.5
	Both	15	18.8
	Not applicable	1	1.3
	Total	80	100.0

6.3 Presentation of key findings on Communication between the Farmers and agricultural extension service providers

6.3.1 Availability of Agricultural extension Services in Chongwe District

According to the results of the study, most of the respondents said that they do have access to information through Agricultural Extension Service Providers. Table 15 below shows that 75% of the respondents said that information is available.

Table 15. Availability of Information among the Respondents

		Frequency	Percent
Valid	Very much available	10	12.5
	Available	60	75.0
	Not available	5	6.3
	No answer	5	6.3
	Total	80	100.0

6.3.2 Preferred channels used to pass on information

Radio seems to be the most popular channel used to pass information to the respondents as shown in table 16 below. 91.3% of the respondents get their information through radio. Another important channel used to pass on information to the farmers is through the MACO extension workers, which makes up 82.5%. Other important channels, as shown in the table below are neighbours/friends and printed materials. Opinion leaders are also used but not as much as the ones mentioned above.

Table 16. Channels used to pass on information to Respondents

	Channels	Frequency	Percent	Number of Cases
1	Radio	73	91.3	80
2	Battery powered television	14	17.5	80
3	MACO extension workers	66	82.5	80
4	Neighbours/friends	52	65.0	80
5	Printed materials	34	42.5	80
6	Opinion leaders	12	15.0	80
7	NGOs	2	2.5	80
8	Associations	2	2.5	80
9	None	3	3.8	80

* n=80

* Percentages do not add up to 100

6.3.3 Approaches considered as the most appropriate by farmers

The respondents pointed out a number of approaches that are used by agricultural extension service providers to pass on information to them. Table 17 below however, shows that radio broadcasting (78.8%) is the approach that is used more to disseminate information to the farmers in Chongwe District. Group meetings and discussions follow on at 73.8% and Demonstrations at 71.3%. Field days/farm visits are another approach used and this makes up 68.8%. Other approaches such as seminars/workshops and training in the fields also seem to be used frequently. The rest are used to a very little extent. Among the approaches mentioned, the farmers, as shown in table 18 below, preferred the field days/farm visits (53.8%) as the most appropriate approach to use to pass on information to them. The farmers stated that this approach enables quick response from the extension service providers due to the one-on-one interaction. They are able to see and immediately learn what the extension officers are doing and they are therefore also able to fully participate in the exercise (table 19).

Table 17. Approaches used to pass on information to the Respondents

	Approaches	Frequency	Percent	Number of Cases
1	Field days/farm visits	55	68.8	80
2	Seminars/workshops	45	56.3	80
3	Demonstrations	57	71.3	80
4	Agricultural shows	27	33.8	80
5	Group meetings/discussions	59	73.8	80
6	Cooperative meetings	42	52.5	80
7	Radio broadcastings	63	78.8	80
8	Television programmes	14	17.5	80
9	Training in the fields	41	51.3	80
10	Printed materials/magazines	25	31.3	80
11	Audio-visual aids	2	2.5	80
12	Individual talk	21	26.3	80
13	No idea	1	1.3	80

* n=80

* Percentages do not add up to 100

Table 18 Approaches considered the most appropriate for passing information to the Respondents

	Approaches	Frequency	Percent	Number of Cases
1	Field days/farm visits	43	53.8	80
2	Seminars/workshops	40	50.0	80
3	Demonstrations	37	46.3	80
4	Agricultural shows	13	16.3	80
5	Group meetings/discussions	37	46.3	80
6	Cooperative meetings	27	33.8	80
7	Radio broadcastings	34	42.5	80
8	Television programmes	4	5.0	80
9	Training in the fields	32	40.0	80
10	Printed materials/magazines	11	13.8	80
11	Audio-visual aids	1	1.3	80
12	Individual talk	9	11.3	80
13	No idea	1	1.3	80

* n=80

* Percentages do not add up to 100

Table 19. Reason for the appropriateness of the approach

	Why	Frequency	Percent	Number of Cases
1	Most accessible	39	48.8	80
2	Cheapest	36	45.0	80
3	Fastest	21	26.3	80
4	Quickest response	58	72.5	80

* n=80

* Percentages do not add up to 100

6.3.4 Information needs of the farmers

The farmers of Chongwe District receive some information from the agricultural extension service providers. The study shows that information that is received more is crop diversification (90%) followed by conservation farming at 85% as shown in table 20 below. The farmers also receive information on pest and disease control and animal husbandry, which follows on at 63.8% and 55% respectively. They receive other information also but not as much as that mentioned above. The farmers however, considered some information more useful than others. They stated that they would like to receive a lot more information on crop diversification and conservation farming. According to them, this information is relevant and appropriate and therefore they find it useful but it is not adequate enough due to the low frequency in acquisition.

Table 20 Information passed on to the Respondents

	Information	Frequency	Percent	Number of Cases
1	Animal husbandry	44	55.0	80
2	Conservation farming	68	85.0	80
3	Crop diversification	72	90.0	80
4	Low cost irrigation system	13	16.3	80
5	Record keeping/budgeting	34	42.5	80
6	Farm management	27	33.8	80
7	Formation of farmer's groups	36	45.0	80
8	Loan repayment	17	21.3	80
9	Pest and disease control	51	63.8	80
10	Out grower schemes	3	3.8	80
11	Agro forestry	2	2.5	80
12	Sustainable agriculture	0	0.0	80
13	Fish farming	1	1.3	80
14	Nothing useful	6	7.5	80

* n=80

* Percentages do not add up to 100

Table 21. Respondent’s preferred information

	Information	Frequency	Percent	Number of Cases
1	Animal husbandry	39	48.8	80
2	Conservation farming	53	66.3	80
3	Crop diversification	56	70.0	80
4	Low cost irrigation system	9	11.3	80
5	Record keeping/budgeting	18	22.5	80
6	Farm management	22	27.5	80
7	Formation of farmer’s groups	14	17.5	80
8	Loan repayment	9	11.3	80
9	Pest and disease control	35	43.8	80
10	Out grower schemes	1	1.3	80
11	Agro forestry	2	2.5	80
12	Sustainable agriculture	1	1.3	80
13	None	6	7.5	80

* n=80

* Percentages do not add up to 100

6.3.5 Participation of the farmers in information flow in the communication System

The Chongwe District farmers do participate in information flow. Information flow is two-way between the farmers and the agricultural extension service providers. Approaches such as the Train and Visit as well as the field days/farm visits, are designed to ensure that farmers participate in the information flow that is meant to bring about positive change for them. Table 22 below shows that the farmers do participate in the

agricultural related functions, which requires them to voice their needs and also to make decisions concerning their needs. JICA has introduced a project in Chongwe District called Participatory Village Development in Isolated Areas (PaViDIA). The aim of this project is to alleviate poverty in rural areas. The project uses an approach called Participatory Approach to Sustainable Village Development (PAViDIA). The main objective of this approach is to establish a practical model for sustainable rural development in Zambia. It ensures full participation of the farmers in problem identification and decision-making. It uses the bottom-up approach communication system.

This approach however, has had some problems. During the initiation stage of the project, the farmers fully participated and showed a lot of enthusiasm and cooperation. However, as time went by and there was the introduction of finances, personal gain took over as a result of lack of constant supervision from the extension officers and thus hindering progress of the project. Moreover, due to lack of an efficient and effective means of communication, as a result of the remoteness of the villages and few numbers of extension officers, through which feed-back can be transmitted from the farmers to the initiators of the project, dissemination of information is greatly affected. One of the extension officers who were interviewed further shade some light on the frequency at which meetings and workshops/seminars are held for farmers. Both at district and camp level, meetings, demonstrations, farm visits/field days and workshops/seminars are held depending on availability of resources. At district level, meetings are held 2 times in a year, while at camp level they are held 2 times in a month. Agriculture shows, field days and demonstrations are held on a quarterly basis and as many as possible of these functions are supposed to be held in every quarter. However, the functions are not held as much as expected due to lack of resources, especially financial. Only about 2 to 3 functions are held every month. Agriculture shows are held every second and third quarter while on the other hand field days are held every first and second quarter of the year. Demonstrations are held every first and fourth quarter of the year. This is not adequate enough in terms of information flow and for effective and efficient feedback between the farmers and the different stakeholders. According to one of the extension

officers who were interviewed, extension officers are supposed to conduct farm visits at least 20 times in a month but limited resources only allow for 1 visit. This is preventing farmers from participating fully and making progress. In order for a project to work, there is need for constant supervision, monitoring and evaluation, which is not consistently done by the extension officers.

Table 22. Ranking of functions attended by Respondents

Functions	Rank
MACO extension meetings	1
Cooperative meetings	2
Demonstrations	3
Field days	4
Agriculture show	5
Mobile courses	6
Chongwe District Farmer’s Association	7
Radio farm forum meetings	8

6.4 Discussion of the findings

6.4.1 Constraints in the access of information

According to the results of the survey, there are agricultural extension services and information provision to small-scale farmers in Chongwe District. 75% of the farmers said that they do have access to information. However, the farmers are still facing a lot of problems, especially at camp level, not only in information acquisition but also general agricultural problems. Table 22 shows the agricultural related problems, which the farmers face in Chongwe District. Inadequate and late delivery of inputs tops the chart followed by lack of market. The other problems include lack of transport, bad road network, lack of access to agricultural information, lack of animal draught power, lack of

capital and access to loans, lack of labour, infertile soils, poor storage facilities, low yields and food security and droughts.

Table 23. Ranking of Farmer’s agricultural related problems

Problems	Rank
Lack of inputs (Inadequate and late delivery of inputs)	1
Lack of market	2
Lack of transport	3
Bad road network	4
Lack of access to agricultural information	5
Lack of animal draught power	6
Lack of capital and access to loans	7
Lack of labour and infertile soils	8
Poor storage facilities and low yields	9
Low food security and droughts	10

Despite having access to information, the Chongwe District farmers still face a lot of constraints in the acquisition of this information. As mentioned earlier, the farmers get their agricultural information from a number of sources. These include the MACO extension officers, mass media, which is mainly radio and television, printed material on agriculture and different organizations such as NGOs. The following is an outline of the constraints in information acquisition from the above mentioned information sources.

(i) MACO extension officers

The numbers of extension officers are very low. The HIV/AIDS pandemic has been one of the major contributing factor to this as well as de-motivation of the officers, which has resulted in most of them leaving the government for greener pastures. The officers are lowly paid and lack funds and transport to enable them to visit the farmers as often as

possible so that they can closely monitor their progress and for quicker response. The Chongwe District extension officers only have 1 vehicle and 15 motorbikes, which were a donation from the stock holders (Africa Development Bank and JICA). This makes it difficult for them to make frequent visits and cover all the 30 camps. More over, the extension officers are not able to keep abreast with modern agricultural technologies or new methods of farming because they lack training. The government does not give them sufficient funds to enable them to have refresher courses. The extension officers in Chongwe District have limited access to information due to irregular supply of information sources such as newspapers and printed materials. One of the staff members interviewed expressed that they lack stationery most of the time to print agricultural related materials.

(ii) Radio

The biggest problem with radio in being the most important sources of information for the farmers is ownership. Most of the radios are communally owned. They belong to the Radio Farm Forum Groups, which is an initiative by JICA. This kind of setting has been a problem for the farmers because they have a specific time to listen to the programmes and in Chongwe District this is done between 13:00 and 14:00 hours. This means that the farmers can only listen to one specific programme aired at that time and thus miss out on other important agricultural programmes, which are aired at different times. The farmers participate in deciding on what programmes they want to listen to but unfortunately response is slow because of the irregular visits from the extension officers who are responsible for collecting and submitting the farmer's requests to programmers for airing on the radio. This disturbs the flow of information to the farmers as programmes are not consistently aired on the radio and the farmer's queries and needs are not immediately answered. Sometimes programming is also disrupted due to constant disruption of the reception especially during the rain season as a result of the type of radios used (short-wave band).

(iii) Battery powered television

According to the survey, only 17.5%, as shown in table 16 above, of the farmers said that they get their information through television broadcasts. Lack of electricity in the villages is the main cause of farmers not owning television sets. Television sets are also expensive and the batteries that are used to power them are equally expensive and therefore, very few farmers are able to afford them.

(iv) Printed materials on agriculture

Printed materials on agriculture especially newspapers are very difficult for the farmers to access. Table 23 below shows that over half (56.3%) of the farmers do not have access to newspapers. The frequency at which the farmers read the papers is also very low. Table 24 below shows that only 2.5% of the farmers read newspapers everyday and only 12.5% read once a week. The survey shows that although over 50% of the respondents read other printed materials on agriculture, the frequency at which they do that is very low. Only about 17.6% are able to read these materials once a week. Lack of accessibility to newspapers among the Chongwe District farmers is mainly due to the bad road network. The distributors of the papers are not able to access the villages because the roads are very bad. The farmer's accessibility to printed materials on agriculture is also hindered due to lack of Government's capacity to print and distribute the materials to farmers. One of the extension officers interviewed expressed that the Government lacks funds to supply stationery to the extension officers to print and distribute the materials. More over, when they do print some materials, they are usually inadequate and because of lack of transport, it takes the extension officers quite some time to distribute them. As shown in table 3 above, the literacy levels of the farmers in Chongwe District are quite low. 12.5% of the farmers have completely no education and only 38.8% have education up to Grade 7. Only 33.8% have been educated beyond Grade 10. Lack of education among the farmers therefore, also makes it difficult for the farmers to find the printed materials on agriculture useful.

Table 24. Newspaper reading by Respondents

		Frequency	Percent
Valid	Yes	35	43.8
	No	45	56.3
	Total	80	100.0

Table 25. Respondent’s newspaper reading frequency

		Frequency	Percent
Valid	Every day	1	1.3
	Once a week	13	16.3
	Once a month	11	13.8
	After one month	14	17.5
	After one year	7	8.8
	Never	34	42.5
	Total	80	100.0

Table 26. Percentage of Respondents who read other printed materials on agriculture

		Frequency	Percent
Valid	Yes	46	57.5
	No	34	42.5
	Total	80	100.0

Table 27. Frequency at which the Respondents read other printed materials on agriculture

		Frequency	Percent
Valid	Every day	1	1.3
	Once a week	13	16.3
	Once a month	11	13.8
	After one month	14	17.5
	After one year	7	8.8
	Never	34	42.5
	Total	80	100.0

(v) Organisations

As seen from table 28 below, 21.3% of the farmers do not belong to any organisation. The Chongwe District women do not seem to participate actively in the organizations, especially the women’s organisations. Only 7.5% of the respondents belong to the women’s clubs. To solve this problem, the extension officers have come up with a deliberate policy to try and involve as many women as possible in the running of organisations and projects. 30% of the decision-making positions in organisations are supposed to be held by women so as to have both men and women’s participation in decision-making. The village extension group as shown in table 28 below is the only organisation, which has a relatively high percentage of members (45%). These low numbers of members in organisations has an adverse implication on information acquisition by the farmers. The organisations can be used as a very good source of information but very few farmers belong to them. In the case of NGOs such as Chongwe Organic Producing and Processing Association (CHOPPA), the problem lies in the fact that they normally operate on a short-term basis. Sometimes projects initiated by these NGOs are not run up to the end and sometimes there are no follow-up projects to ensure that the farmers have full knowledge of what is offered to them.

Table 28. Organisations, which Respondents belong to

	Organisation	Frequency	Percent	Number of cases
1	Village Extension Groups	36	45.0	80
2	NGOs	27	33.8	80
3	Cooperatives	31	38.8	80
4	Women’s clubs	6	7.5	80
5	Chongwe District Farmer’s Association	13	16.3	80
6	None	17	21.3	80

* n=80

* Percentages do not add up to 100

6.4.2 Overall views on information provision to Chongwe District small-scale farmers

The survey has reviewed that there is information flow in Chongwe District between the farmers and the agricultural extension service providers. About 75% of the farmers who participated in the survey indicated that agro- information is available in Chongwe District. However, the frequency of dissemination of this information by extension service providers, especially at camp level to the farmers, is quite low and quite inadequate. A number of reasons have been cited for this and the major one is the incapability of the extension officers to easily reach the farmers due to logistic and financial problems. The officers have no transport and funds to make as many visits as possible to the farmers. The numbers of the extension officers are also very low therefore, hindering them from reaching all the farmers and making regular visits to ensure full participation of farmers in agricultural projects.

Mass media (television and radio) are another alternative information source for the farmers. Television has proved to be a problem because very few farmers own television

sets due to the fact that besides television sets being expensive to purchase, the source of power, which are the batteries are also expensive. The Government therefore should introduce a deliberate policy to electrify rural areas so that the peasant farmers can also have access to television programmes.

Radio on the other hand seems to be a popular source of information for the Chongwe District farmers who communally own wind-up radios donated by JICA for Radio Farm Forum. So far, it has helped the farmers a lot in acquisition of information though it also has its own hiccups. The communal ownership of the radios dictates that the farmers meet at a specified time everyday, which is between 13:00 hours and 14:00 hours in Chongwe District, to listen to specific programmes. This has led to the farmers missing out on other important programmes aired at different times. Feedback has also been cited as being slow thus crippling progress for the farmers.

Printed materials on agricultural related issues are not readily available due to the extension officer's incapability to print and distribute them. Newspapers are inaccessible and the high illiteracy levels of the farmers have also been a hindrance to information acquisition.

Organisations such as NGOs, which are meant to help in information flow, are usually on a short-term basis and this is a problem in ensuring continuity of the projects.

Most of the farmers in Chongwe District produce for subsistence and not for sale. They mostly use hand hoes and oxen to cultivate their fields and very few use hired labour. The farmers who said that they used tractors or donkeys for cultivation in the last season only make up 5%. Clearly the farmers are facing a lot of problems, most of which are a result of lack of access to agro-information. Limited access to information on loan acquisition for instance, has led to the farmer's lack of capital to venture into commercial farming. Lack of access to market information has also led to farmers selling their produce at a loss to devious businessmen and women. Most of the farmer's suggested solution to this

problem is that government should introduce market places or selling points within the villages for easy access.

In view of the discussions made thus far, it is evident that a lot still needs to be done in order to reach small-scale framers and to make information flow between them and the agricultural service providers efficient, effective and adequate. A lot of world changes such as technological, climatic, price, market and environmental changes are taking place today. Small-scale farmers such as the Chongwe District farmers need to keep abreast with such changes in order for them to expand their produce and move on to commercial farming.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.0 Conclusions

Agriculture has been identified as one the important and potential means of future national development in Zambia. Small-scale farmers in Zambia make about 75% of the households and therefore most of the growth expected to come from agriculture is expected to come from these small-scale farmers. This category of farmers however has proved to be the most uneducated and uninformed and their production is below expectation.

It was discovered from the study that over 50% of the farmers in Chongwe District who participated in this study had no marketable produce and their produce was only for home consumption. Without information on, for instance, new agricultural technologies and new and better methods of farming, these farmers will not be able to expand their production and hence contribute positively to national development. Farmers engage in different agricultural activities, which constantly change due to changes in technology, market prices, climate and economic status of the country and the world at large. These bring about a different dimension and broad information needs for farmers. This therefore means that there is need for more and constant information provision and exchange between the farmers and the agricultural extension service providers.

This study was therefore undertaken with the aim of evaluating whether there is effective communication between the Chongwe District small-scale farmers and the agricultural extension service providers. It was also undertaken to investigate the effectiveness and efficiency of the channels and methods/approaches used for communicating with the farmers, the adequacy and appropriateness as well as the relevance of the agro information disseminated to the farmers in Chongwe District. The study was undertaken to also evaluate the participation levels of the farmers in the communication system and

the problems that are faced in this system. These concerns were addressed by the study hence shading light on the prevailing state of affairs in Chongwe District.

The study found that there is information flow between the farmers and the agricultural extension service providers. 75% of the framers stated that they are able to access information from the agricultural extension service providers and that this information is relevant and useful to them but it is not adequate. The study found that the problem that the farmers are facing with this communication system at present is the low frequency of the flow of information and the slow feedback between them and the agricultural extension service providers. A number of problems were cited as being the major contributors to the hindrance of the smooth flow of information.

At present the agricultural extension service providers are using a number of channls and approaches to disseminate information to the Chongwe District farmers. Radio, which is considered as one of the best sources of information by the farmers has some problems, which inhibit the smooth flow of information. The communal ownership of the radios, which restricts farmers to listening only to specific programmes, thus missing out on other important ones and bad reception, are some of the weak points of using radios for information dissemination. More over, feedback is slow most of the time and there is no immediate response from the programmers.

Extension officers in Chongwe District are failing to disseminate adequate information to farmers on time due to insufficient numbers and lack of resources. Lack of regular visits to the farmers is hindering the farmers from fully participating in agricultural projects. There is no proper and adequate supervision, monitoring and evaluation of projects by the extension officers.

Printed materials are hardly used because Government is not able to print and distribute some due to lack of stationery. Another hindrance to the use of printed materials as a source of information is the high illiteracy levels of the farmers.

Organisations normally operate on a short-term basis and this does not ensure continuity of projects and therefore they are not a reliable source of information.

Approaches such as demonstrations, field days, farm visits and workshops, are said to be the best sources for information dissemination to the farmers because of the face-to-face interaction. In Chongwe District, these approaches are used but they are not effective and efficient enough because they are not done on a regular basis due to lack of resources.

In order for farmers to be committed and motivated an effective and efficient communication system between the farmers and the agricultural extension service providers must be established. Improved information acquisition by small-scale farmers is needed in order for them to adopt new agricultural technologies, new methods of farming and development. Agricultural programmes and policies drawn by Government should treat the improvement of the agricultural information delivery system with importance.

7.1 Recommendations

(1) Improve funding at district level

Government needs to improve funding at district level. Most of the projects in Chongwe District are currently not running efficiently and effectively due to lack of resources such as transport, stationery for printing agricultural materials, teaching materials and funds for conducting workshops/seminars. There is need for Government to complete the decentralization process. There is need for a bottom-up approach, that is, planning should be done from district level going upwards so as to allow the extension officers at district level to do their own planning since they know what problems they are facing better.

2) Empower and motivate extension officers

Extension officers are one of the most important channels used to disseminate information to the farmers in Chongwe District. They play a very important role in communication between the farmers and the agricultural extension service providers. Due to low salaries and lack of resources to execute their work effectively, the extension officers are de-motivated and thus large numbers have left for greener pastures. The Government therefore, should look into improving the working conditions of the extension officers.

(3) Improve the extension officer's information acquisition

There is need for Government to establish an improved mechanism by which the extension officers who have difficulties in accessing necessary information, can have access to up-to-date information on the latest technologies and farming methods. One way of doing this is through strategic use of mass media in the extension system. The extension officers also need constant refresher courses so that they can keep abreast with the changes taking place in the agricultural sector.

(4) Create effective use of radio broadcasts in rural areas.

The farmers of Chongwe District considered radio broadcasts as their main source of information. The problem with the use of this information source is the communal ownership, which restricts the farmers to listening only to specific programmes and thus missing out on others. It was suggested by the farmers that Government increase their ownership of radios through having duty exemption on radios and providing radios on credit. In order to improve reception in rural areas, the Government should establish community radio stations.

(5) Intensify the Training of Trainers system

Due to limited numbers of extension officers which hinders them from making frequent visits to the farmers, some of the farmers should be trained to become community based agricultural extension workers. In the absence of the MACO extension officers, these farmers can be the source of information for the other farmers and they can also supervise, monitor and evaluate the farmer's projects.

(6) Incorporate information dissemination in Cooperatives

The main purpose of Cooperatives is to ease and facilitate delivery of services and farming implements to farmers. This does not include exchange of information between the farmers and stock holders such as NGOs. Through the Cooperative meetings, there should be information flow and farmers should be enabled to participate in the communication process.

(7) Improve infrastructure in rural areas

Implementation of the rehabilitation of the feeder road programme by Government should be done quickly so that the extension service providers can have access to remote areas to disseminate information. Rural areas should also be electrified so that farmers can own television sets and make use of television broadcasts. Government and other stakeholders should build schools in rural areas so that farmer's literacy levels can be increased and this will enable them to make good use of printed materials on agriculture.

BIBLIOGRAPHY

1. Axinn George. H: *Guide to Alternative Extension Approaches*, Rome, FAO, 1988
2. Benor Danial and Harrison: *Agricultural Extension: The Training and Visit System*, Washington, World Bank, 1977
3. Bessette Guy: *The Role of Communication in Social Settings*, New York, Sage, 1996
4. Carey Harry. A and Haberland Heather N: *Communication in Extension, A Teaching and learning guide*, Rome, FAO, 1990
5. Carole Engel. R and Nathan Stone. M: *A Review of Extension Methodologies in Aquaculture*, Rome, FAO, 1989
6. Central Statistical Office: *Agricultural and Pastoral Production (small and medium scale holdings 1999-2000), Structural and Post Harvest Data*, Lusaka, CSO, 2003
7. Economist Intelligence Unit: *Zambia: Country Profile, 1999-2000*, London, E.I.U, 1999
8. Elkamel Farag Dr: *Developing Communication Strategies and Programs: A Systematic Approach*, UNICEF Mena Regional Office, 1986
9. Food and Agricultural Organisation: *Farming Systems Development: A Participatory Approach to helping Small-Scale Farmers*, Rome, FAO, 1994
10. Gann I. H: *A History of Northern Rhodesia: Early Days to 1953*, London, Chatto and Windus, U.K, 1964
11. Green k: *Application for the Agenda Setting Theory*:
<http://oak.catsohiou.ed/agenda.htm>, 2000
12. JICA: *Zambia Agricultural Extension and Information Survey, Lusaka, Ministry of Agriculture and Cooperatives*, 2002
13. Kalimbwe George: *Radio Farm Forum in Zambia: A Participatory Approach in Muswishi- Chilibombiwe*, Lusaka, UNZA, 2001

14. Kalinda Thompson H: *"Agriculture and Food Security in Zambia" in African Social Research*, Lusaka, UNZA,
15. Kasongo Emmanuel Dr: *Development in Practice, Volume 8*, February, 1998
16. Madzingira Nyasha: *Culture, communication and Development in Africa*, Harare, IDEP, 2001
17. Ministry of Food and Fisheries: *Strategic Plan for the Ministry of Agriculture, Food and Fisheries (2001-2005)*, Lusaka, MAFF
18. Mody Bella: *Designing Messages for Development Communication: An Audience Participation Based Approach*, New Delhi, SAGE Publications, 1991
19. Rensburg R. S: *Communication Planning and Management*, Cape Town, Juta and company, ltd, 1996
20. Sandys A. J et al: *The Extension Approach: Extension Staff Circular*, Zomba, Department of Agriculture, 1960
21. Severen Werner J and Tankard James W. Jr: *Communication Theories*, New York, Longman, 1988
22. Suzuki and Atsushi: *Zambia Agricultural extension and information Survey*, Lusaka, JICA, 2000
23. Todaro Michael P: *Economics for a developing World*, New York, Longman, 1977
24. White Shirley A and Ascroft Joseph K: *Participatory Communication, Working for change and Development*, New Delhi, SAGE Publications India Pvt ltd, 1994
25. Wood Adrian P et al: *The Dynamics of Agricultural Policy and Reform in Zambia*, Iowa, Towa State University Press, 1990

APPENDICES

Appendix 1

Farmer's questionnaire

THE UNIVERSITY OF ZAMBIA

**SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
DEPARTMENT OF MASS COMMUNICATION
LUSAKA**

QUESTIONNAIRE

Dear Respondent,

This questionnaire is being administered in order to gather information intended for an academic research. The aim of the research is to evaluate communication between small-scale farmers and agricultural extension service providers.

Please note that the information, which will be collected from you will be treated with utmost confidentiality and it is purely for academic purposes. We hope that you will answer the questions as openly and honestly as you possibly can.

We thank you in anticipation for your favourable response.

Jenipher Mulilo

M.C.D STUDENT/RESEARCHER

Answer the questions by ticking in the appropriate box, which is provided for you or by filling in the blank spaces where you are required to do so. Please respond to all the questions asked.

SECTION A

PERSONAL DETAILS

1. Sex of respondent:
1. Male () 2. Female ()
2. Age of respondent:
1. () 15-24 2. () 25-34 3. () 35-44 4. () 45-54 5. () 55-65 6. ()
Above 65
3. Nationality of respondent:
1. () Zambian 2. () Non Zambian
4. Level of education attained:
1. () Grade 1-7 2. () Grade 8-9 3. () Grade 10-12 4. () college 5. ()
University
5. Number of family members in the home excluding visitors:
1. () Children below 17 years
2. () Adults above 18 years
6. Position of respondent:
1. () Household head
2. () Spouse to household head
3. () Child
4. () Relative
5. () Other (Specify).....
7. Source of income for respondent's household:
1. () Farming
2. () Salaried job
3. () Beer brewing
4. () Charcoal burning
5. () Fishing
6. () Others (Specify).....
8. When did you settle in the village?
1. () Within the past year

2. () 1-3 years ago
 3. () 4-5 years ago
 4. () 6-7 years ago
 5. () 8-9 years ago
 6. () Above 10 years
9. What is the size of your farm?
.....
10. From the started land size, how much did you cultivate last season (2004-2005)?
.....
11. What crops did you grow last season?
1. () Beans
 2. () Maize
 3. () Cotton
 4. () Sorghum
 5. () Groundnuts
 6. () Others (Specify).....
12. Did you have any marketable surplus from the harvest?
1. () Yes
 2. () No
13. If yes, how many bags (25 kg and more) did you produce?
1. () 1
 2. () 2
 3. () 3
 4. () 4
 5. () Above 5
14. What was the means of cultivation used?
1. () Hand hoe
 2. () Oxen
 3. () Donkey
 4. () Tractor
 5. () Other (Specify).....
15. If yes, are these means of cultivation yours or they were hired?
1. () Own
 2. () Hired
 3. () Both
16. What animals did you keep in the last season?
1. () Goats
 2. () cattle
 3. () Chickens
 4. () Pigs
 5. () Others (Specify).....
17. How many did you sell?
1. Cattle.....
 2. Goats.....
 3. Chickens.....
 4. Pigs.....
 5. Other (Specify).....

SECTION B

INFORMATION ON FARMING ACTIVITIES AND COMMUNICATION BETWEEN FARMERS AND AGRICULTURAL EXTENSION SERVICE PROVIDERS

18. What agricultural related organization/s do you belong to?
- 1. () Village Extension Group
 - 2. () NGOs
 - 3. () Cooperatives
 - 4. () Others (Specify).....
 - 5. () Non
19. What agricultural functions have you attended in the past 1 year?
- 1. () Cooperative meetings
 - 2. () Radio Farm Forum meetings
 - 3. () Agricultural Show
 - 4. () MACO extension meetings (with extension workers)
 - 5. () Farmer’s field days and schools
 - 6. () Demonstrations
 - 7. () Mobile courses
 - 8. () Others (Specify).....
 - 9. () None
20. Did you find them useful?
- 1. () Yes 2. () No
21. If yes, indicate how useful?
- 1. () Very useful 2. () Useful 3. () Not useful
22. How did you get to learn about these functions mentioned in question 18?
- 1. () NGO staff
 - 2. () MACO extension staff
 - 3. () Neighbour/ friend
 - 4. () Traders/businessmen
 - 5. () Television programmes
 - 6. () Radio programmes
 - 7. () Newspapers
 - 8. () Printed materials
 - 9. () Opinion leaders (chiefs, headmen etc)
 - 10. () Other(Specify).....
 - 11. () Can not remember

23. Which of the officials stated below visited you last year?

- 1. () Social workers
- 2. () Health officials
- 3. () Crop extension officers
- 4. () Animal husbandry or veterinary officers
- 5. () Others (Specify).....
- 6. () None

24. Did you find them useful?

- 1. () Yes 2. () No

25. If yes, indicate how:

- 1. () Very useful 2. () Useful 3. () Not useful

26. What type of information is passed on to you from the agricultural extension service providers?

- 1. () Animal husbandry
- 2. () Conservation farming
- 3. () Crop diversification
- 4. () Low cost irrigation systems
- 5. () Record keeping/budgeting
- 6. () Farm management
- 7. () Formation of farmer's groups
- 8. () Loan repayment
- 9. () Pest and disease control
- 10. () Out grower schemes
- 11. () Other (Specify).....
- 12. () Nothing useful

27. Which of the information mentioned (or not) in question 25 do you find most useful and therefore would you like to receive more of it?

- 1. () Animal husbandry
- 2. () Conservation farming
- 3. () Crop diversification
- 4. () Low cost irrigation systems
- 5. () Record keeping/budgeting
- 6. () Farm management
- 7. () Formation of farmer's groups
- 8. () Loan repayment
- 9. () Pest and disease control
- 10. () Out grower schemes
- 11. () Other (Specify).....

28. To what extent is the information you receive available?

- 1. () Very much available 2. () Available 3. () Not available 4. () No

answer

29. What type of channels do you receive agricultural information from?

1. () Radio
2. () Battery powered television
3. () MACO extension workers
4. () Neighbours/friends
5. () Printed materials (news papers, news letters, magazines etc)
6. () Opinion leaders (chiefs, headmen etc)
7. () Others (Specify).....
8. () None

30. What approaches/methods are used to pass on agro information to you?

1. () Field days/ farm visits
2. () Seminars/workshops
3. () Demonstrations
4. () Agricultural shows
5. () Group meetings/discussions
6. () Cooperative meetings
7. () Radio broadcasting
8. () Television programmes
9. () Training in the fields
10. () printed materials/magazines
11. () Audio-visual aids
12. () Individual talk
13. () Other (Specify).....

31. Among the approaches/methods you have mentioned, which one/s do you consider as the most appropriate and effective and why?

- (a).
1. () Field days/ farm visits
 2. () Seminars/workshops
 3. () Demonstrations
 4. () Agricultural shows
 5. () Group meetings/discussions
 6. () Cooperative meetings
 7. () Radio broadcasting
 8. () Television programmes
 9. () Training in the fields
 10. () printed materials/magazines
 11. () Audio-visual aids
 12. () Individual talk
 13. () Other (Specify).....

- (b)
1. () It is the most accessible
 2. () It is the cheapest
 3. () It is the fastest

4. () It enables quick response
 5. () Others(Specify).....

32. Have you heard about crop rotation?

1. () Yes 2. () No

33. If yes, do you understand what it means?

1. () Yes 2. () No

34. Where did you first learn about it from?

1. () NGO staff
 2. () MACO extension staff
 3. () Neighbour/ friend
 4. () Traders/businessmen
 5. () Radio programmes
 6. () Television programmes
 7. () Newspapers
 8. () Printed materials
 9. () Opinion leaders (chiefs, headmen etc)
 10. () Other (Specify).....
 11. () Can not remember

35. Have you read any newspapers in the last 6 months?

1. () Yes 2. () No

36. If yes to question 34, which newspaper/s have you read and how often?

- (a) 1. () The post
 2. () Times of Zambia
 3. () The daily Mail
 4. () The Monitor
 5. () Other (Specify).....

- (b) 1. () Everyday 2. () Once a week 3. () Once a month 4. () After one month 5. () After one year 6. () Never

37. Do you read anything else on agriculture such as newsletters, pamphlets or magazines?

1. () Yes 2. () No

38. If yes to question 36, how often do you read them?

1. () Everyday 2. () Once a week 3. () Once a month 4. () After one month 5. () After one year 6. () Never

39. Which of the agricultural related problems do you face here in Chongwe Distict?

1. () Lack of transport
 2. () Lack of inputs

- 3. () Lack of market for produce
- 4. () Bad roads to transport produce and inputs
- 5. () Lack of access to appropriate agricultural information
- 6. () Other (Specify).....
.....
.....
.....
.....

40. What do you think should be done to get rid of the these problems and improve the agricultural sector in Zambia?

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THANK YOU FOR YOUR COOPERATION.

Appendix 2

INTERVIEW GUIDE FOR AGRICULTURAL EXTENSION WORKERS

1. Gender 1. () Male 2.() Female
2. How old are you?
3. What level of education have you attained?
4. Are you based here?
5. What training concerning extension work have you attained?
6. How long have you been doing the extension work?
7. Are you a full time or part time employee of MACO?
8. Do you physically visit the farmers at their homes?
9. If yes, how often do you visit them?
10. What is the means of your transportation?
11. What type of information do you disseminate to the farmers?
12. Who initiates the information, which is passed on to the farmers? Is it a two-way process?
13. What channels do you use to disseminate the information?
14. Among the channels mentioned, which one/s do you think the farmers consider the most effective and why?
15. What type of approaches/methods do you use to disseminate information to the farmers? Which of the following communication methods/approaches do you think are the most effective in passing on agro information to the farmers?
 - i. Agricultural show
 - ii. Audio/visual aids
 - iii. Printed materials (e.g. magazines, pamphlets or newsletters)
 - iv. Group meetings/discussions
 - v. Radio programmes
 - vi. Television programmes
 - vii. Demonstrations
 - viii. Seminars/workshops

- ix. Individual talk/ opinion leaders
- x. Field days/farm visits
- xi. Other, specify

16. Do you think, in your opinion, the farmers find the information passed on to them useful, effective, appropriate and adequate.
17. Do they participate fully in the given projects and do they practice what they are taught?
18. Do you hold any meetings or workshops for the farmers?
19. If yes, how often do you hold them, how is the attendance and what do you discuss?
20. What type of farmer's organizations are found in Chongwe District?
21. What kind of functions do the farmers attend and how is the attendance? How often are the functions held?
22. Do you distribute any printed materials on agriculture, such as newsletters or pamphlets to the farmers?
23. If yes, how often do you do that and what kind of information is contained in them?
24. Are there any radios in Chongwe?
25. If yes, are they personal or communally owned?
26. What time are the agricultural programmes aired on radio?
27. Do you think this is suitable time for the farmers?
28. What are the most prevalent problems facing the farmers of Chongwe District today?
29. What problems do you face when communicating with the farmers?
30. What are the possible solutions to these problems?

Appendix 3

INTERVIEW GUIDE FOR OPINION LEADERS

1. Gender 1. () Male 2.() Female
2. How old are you?
3. What level of education have you attained?
4. What is your position in the village?
5. How long have you held this position?
6. Do you render any help to farmers? If yes, what kind of help do you give them?
7. Do you belong to any farmer's organisation/s in Chongwe District? If yes, what kind of organisations are these?
8. How did you get to hear about this/these organisation/s?
9. What kind of information concerning agriculture do you get from the organisations?
10. Do you find the information, which you get from the organisations useful in any way?
11. Are there any agricultural extension services offered in Chongwe?
12. What kind of channels do the agricultural extension service providers use to pass on information to you?
13. Among the channels you have mentioned, which one/s do you consider the most appropriate and effective and why?
14. What kind of approaches/methods are used to disseminate information to you from the extension service providers?
15. Which of the following approaches/methods do you think are the most effective?
 - i. Agricultural show
 - ii. Audio/visual aids
 - iii. Printed materials (e.g. magazines, pamphlets or newsletters)
 - iv. Group meetings/discussions
 - v. Radio programmes
 - vi. Television programmes

- vii. Demonstrations
- viii. Seminars/workshops
- ix. Individual talk/ opinion leaders
- x. Field days/farm visits
- xi. Other, specify

16. Do you find the information you get from the extension service providers useful?
17. Do you participate in the generation of the agro information, which is passed on to you?
18. Do you participate fully in the projects offered by the extension services and do you practice what you are taught?
19. Have you attended any functions concerning agriculture in the past one year? If yes, what type of functions are these and did you learn anything useful from them?
20. Do you receive any printed materials on agriculture? If yes, what type do you receive and how often?
21. Have you had access to any newspapers in the past one year? If yes, which ones and how often have you accessed them?
22. Do you own a radio?
23. In your knowledge, how many radios do you think your community owns?
24. Do you wish to have a specific time when the programmes on radio should be aired or is the time when they are currently aired suitable for you?
25. What are the most prevalent problems that you are facing in Chongwe concerning agriculture?
26. What do you think are the possible solutions to these problems?
27. What type of problems do you face in your communication with the extension service providers?