

**PARTICIPATION OF SMALLHOLDER FARMERS IN
AGRICULTURAL EXTENSION SERVICE IN ZAMBIA**

**An Evaluation of the Ministry-operated Extension Service in Mumbwa
District of Central Province**

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M.Sc.
THESIS
MARK
2002
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A thesis submitted in partial fulfilment of the requirements for the degree of Masters of
Science (Agriculture)

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2002

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ACKNOWLEDGEMENTS

I would like to take this opportunity to sincerely thank all the people who assisted me in various ways during the course of this study.

To the staff of the AERD Department for their help throughout the year, particularly Dr Padraig Wims for his invaluable advice, suggestions and support throughout the study.

To the Irish Government for awarding me a scholarship to pursue my masters programme.

To all the extension staff in Mumbwa District, particularly those who were interviewed for providing useful information. Special thanks go to Mr Kennedy Silwaba for the time he spent in arranging for field trips and accompanying me to meet many respondents.

To the smallholder farmers in Mumbwa District who took part in this study, for their time, hospitality and the information that they provided.

To Dr T Kalinda of the Department of Agricultural Economics of the University of Zambia for his time in facilitating my access to the library. To all my friends for their support and encouragement throughout the study period.

Finally to my family for their support and commitment to my education, and for remembering me in prayers.

PARTICIPATION OF SMALLHOLDER FARMERS IN AGRICULTURAL EXTENSION SERVICE IN ZAMBIA; AN EVALUATION OF THE MINISTRY-OPERATED EXTENSION SERVICE IN MUMBWA DISTRICT

ABSTRACT

The study evaluates the public agricultural extension service delivery in Zambia with respect to the participation of smallholder farmers. The study describes the extension service implementation, establishes the smallholder farmers' level of access to extension and finds out the factors that influence farmer's participation in agricultural extension.

The study was carried out in Central Province of Zambia in Mumbwa District. An interviewer-administered questionnaire survey of 100 smallholder farmers, randomly selected, together with the review of secondary information and semi-structured interviews with seven extension staff were all part of the study methodology.

A review of academic literature highlighted that community participation is a wide subject and that top-down and bottom-up approaches to development form the two ideal extreme ends of the participation continuum, but a more interactive form of participation is what was required. It was also argued that genuine participation leads to enhanced service delivery, efficiency, effectiveness, adoption of appropriate farming practices and sustainability.

The study revealed that extension workers found it difficult to secure farmer participation and that they relied much on the local leaders' interventions rather than their tact, persuasion and demand-driven extension packages. Access to the extension service was found to be very low and participation of smallholder farmers was found to be below average compounded by infrequent extension activity in the area. The little participation that occurred was found to be high on passive and incentive-driven participation and low on interactive participation. Factors influencing the participation of farmers were numerous and ranged from farmers' personal to farm to livelihood characteristics. The study also revealed that extension workers needed to have their conditions of service improved, their means of operations made available to them, and also rewards for good performance to be put in place.

In addition the study observed that farmers would be willing to participate in extension activities that address their various needs and consequently it is extremely vital that extension services are relevant to these needs. A vigorous gender sensitisation was recommended. It was recommended that the disadvantaged/vulnerable sub-groups of smallholder farmers be given more attention if their participation is to be secured. Extension workers also needed to have their skills in participatory procedures enhanced.

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CHAPTER ONE: INTRODUCTION

Introduction

The purpose of this study was to evaluate the Zambian government-operated extension service with regard to the participation of smallholder farmers. It also identified problems faced by extension workers in their work and in trying to ensure that smallholder farmers participate fully in agricultural extension activities. The study also identified the limitations in the current agricultural extension system. The study formed the basis for making suggestions that would enhance the participation of the primary stakeholders in agricultural extension programmes. The study was conducted in the Central Province of Zambia in Mumbwa district. It is presented in four chapters. The first one is an introductory chapter containing brief information about Zambia's geographical and economic context and some background information to the study including the area of study. The statement of the problem, objectives and methodology are other aspects contained in Chapter One. Then Chapter Two contains the literature review, which gives the theoretical and conceptual framework of the study. Chapter Three contains the data analysis and discussions. Then the final chapter gives the summary and conclusion of the study including suggestions based on the findings of the study.

Zambia's Geographical Location and Socio-economic Context

Zambia is a land-locked country lying between latitudes 8 and 18 degrees south and between longitude 22 and 34 degrees east. It spans an area of about 753 000 square kilometres and is located in Sub-Saharan Africa south of the Equator. It shares borders with eight countries, the longest of which is with the Democratic Republic of the Congo in the north (formerly Zaire), then with Tanzania and Malawi in the north-east and east respectively, Mozambique, Zimbabwe, Botswana and Namibia in the south and finally Angola in the west. Climatically, Zambia has a sub-tropical climate with three distinct seasons namely the cool and dry winters starting from May to August with temperatures ranging between 14 and 21 degrees Celsius, then the hot and dry seasons from September

to October with temperatures ranging between 26 and 32 degrees Celsius for most parts of the country, and finally the warm and wet summers from November to April with temperatures ranging from 21 to 26 degrees Celsius. The average annual rainfall is about 1400mm in the Northern parts of country with about 6 months of rainfall, while the Southern parts of the country receive on average 700mm of rainfall for about four months. The natural vegetation is the savannah woodland type with small amounts of deciduous (shed leaves in the dry season) forests. There are also some savannah grasslands and some swamplands occasioned by seasonal variations in water levels and temperatures.

In terms of population, Zambia has about 9.3 million people (2000) with an average population growth rate of about 2.3% (CSO, 2000, pp. 8-11). Zambia is sparsely populated with an average population density of about 12 people per square kilometre. Although Zambia is one of the highly urbanised countries in sub-Saharan Africa, an estimated 58% of the population live in rural areas. The population density in cities is big while that in rural areas is small.

Zambia is characteristically a multiple ethnic and multiple cultural country. It hosts seven major local languages and about seventy-three dialects. The seven local languages include Ici Bemba, Chi Tonga, Ci Nyanja, Si Lozi, Ci Lunda, Ki Kaonde and Luvale. However, English is the official language and therefore the language of government and commerce. The diversity of ethnic groups entails the existence of a variety of traditions and cultural practices which undoubtedly would have a bearing on development programmes.

Zambia is divided into nine provinces for administrative purposes. The nine provinces are Northern, Luapula, Central, Copperbelt, North-Western, Western, Eastern, Southern and Lusaka provinces. Each of these provinces is further divided into districts so that the country has a total of 53 administrative districts.

Economically, Zambia started as a closed economy soon after its political independence from Britain in 1964. Zambia became a one party state several years later and assumed more restrictive economic policies in which government played a major role in shaping the economy of the country. Industries were nationalised so that the government-controlled monopolies were created in almost all sectors of the economy including mining, agriculture, manufacturing, public transport, services (electricity and water) and so on. The structure of the economy was such that copper mining was (and still is) the country's major foreign exchange earner (World Bank, 1996, p. 25; Southall, 1999, p. 512; Reagan, 2001, p. 184). It was this booming copper industry at the time that encouraged state controlled economic policies. In the first few years after independence the nation experienced economic growth averaging about 2.4 per cent a year. During this time, the government heavily subsidised both consumption and production so that prices of goods and services were controlled and agricultural marketing and credit were provided by the state.

However in mid 1970's, Zambia faced two major economic external shocks which rendered most of the economic policies that the government was implementing unsustainable. Firstly, Zambia faced unprecedented falling copper prices on the international market (which the government misinterpreted as a temporal occurrence only), and secondly there was the oil crisis during the same period (World Bank 1996, p. 25). These coupled with the political turmoil in most neighbouring countries impacted severely on the economy of the country. Therefore in order for the government to sustain the economy, it resorted to borrowing from the international community with the hope that copper prices would stabilise sooner than later.

In the early 1980's when it became apparent that the copper prices were not improving and that the economic policies had failed, government attempted an IMF/World Bank sponsored Structural Adjustment Programme (SAP) (World Bank, 1996, pp. 26 – 30) for a short period before it was abandoned because of its, arguably, unfavourable conditions attached to it. But government continued with borrowing and on-and-off attempts to implement SAP depending on the political convenience. During this period the economy

continued declining so that poverty levels also kept rising and the debt stock had risen to slightly over US\$7 billion by 1991.

In 1991, there was a change of political dispensation from a one party state to a multiparty democracy, which saw the new government of the Movement for Multiparty Democracy (MMD) in power in the same year. This time the government embarked on economic liberalisation programme in which most state-owned companies were privatised including the withdrawal of government from the agricultural sector in terms of subsidising inputs and supply of the same, and crop marketing, with the hope that the private sector would fill up the gap. But this did not happen as private sector remained fragmented and undeveloped. Market forces were allowed to rule on prices of goods and services, and government also started restructuring the civil service. The major policy goal for government was to ensure macroeconomic stability (African Development Bank 1998, pp. 103-104). But about 10 years down the road, the economy failed to stabilise, the strict adherence to SAP implementation seemed to have worsened the unemployment levels and generally poverty remained high – about 85 per cent of the population living under a dollar per day (World Bank 2001, p. 309). At the close of the year 2000, the international financial institutions allowed Zambia to qualify to the Highly Indebted Poor Countries (HIPC) Initiative under which Zambia was allowed lower amounts of debt service and would presumably have a significant reduction in the debt.

Background to the Study

The present poor state of the Zambian economy and many existing agricultural constraints can be traced to the development strategies pursued in the past years. Apart from providing free extension and research services, government was for a long time involved in agricultural marketing and pricing which was generally maize-based. This created a strong attitude of dependence on government among the smallholder farmers. The general feeling was that government was obliged to institute and support development programmes among farming communities with little or no participation from them. Programmes instituted by government were treated as belonging to

government and not the communities. This therefore meant that agricultural development initiatives were rendered unsustainable as there was very little input if any from the local communities. But there has been an array of other problems, which have contributed to hampering the development of agriculture in Zambia. Some of them include low asset base/insufficient capital for smallholder farmers, low savings, erratic rainfall (frequent droughts and floods), low and unstable prices for agricultural products, poor rural infrastructure, inadequate extension services, high levels of malnutrition among smallholder farmers, high morbidity rates, dependence syndrome created through excessive subsidies in the past and many others (MAFF 2000a, pp. 10 – 11).

Like in many other developing countries, there are a number of approaches that have been used in Zambia to try and strengthen the agriculture sector. One of them has been to improve the extension service delivery and in trying to achieve this, a number of extension approaches have been attempted. In virtually all these approaches, emphasis has been on organising/re-organising the extension service delivery system rather than the client system. The end result has been that the gains from these approaches, in terms of increased productivity, have been generally temporal. The lack of sustainability in these approaches coupled with the disturbance of the traditional farming systems practices, have put the majority of the smallholder farmers in a situation that is worse than they were in before.

The approaches that have been attempted in Zambia include the individual farm visits, Farmer Field schools, Training and Visit (T and V) and the Farming Systems Research/Extension (FSR/E) (World Bank 1986, pp. 9-28; MAFF 2000b, p 9; Sutherland 1988, pp. 49-60; Makasa 1998, p. 18). Apart from FSR/E which had a feedback component which to some extent allowed the exchange of views between farmers and extension agents, most of these systems tended to be more top-down in nature, in that they gave little attention to the smallholder farmers' input in the extension system. These approaches were linear models as they generally regarded smallholder farmers only as recipients of knowledge. These approaches can be classified into two models namely the

Research, Development and Diffusion model, and the Social Interaction model (van de Ban et al. 1988, p 26-27), rather than the Problem-solving model.

In 1996, the Zambian government started implementing a “new” agricultural programme known as the Agriculture Sector Investment Programme (ASIP). Like other past programmes, it aimed at improving food security in the country. One of the objectives was to build capacity in the extension service delivery in order to make it more effective and efficient. This led to the restructuring of the Ministry of Agriculture, largely through appointment of new and “qualified” staff and phasing out of some positions. The restructuring was completed in 1998 though some positions were yet to be filled by then. However, the system has by and large retained a mix of features of T and V and the FSR/E. But for efficiency and sustainability of development programmes including those that are agricultural-based, most scholars have emphasised the need for participation of primary stakeholders or beneficiaries, in this case smallholder farmers.

Therefore the Ministry of Agriculture, under the auspices of The World Bank, began piloting a new approach in agricultural extension in the year 2001 in selected provinces and communities. This approach was called the Participatory Extension Approach (PEA). The area of study (Mumbwa District) was one of the districts in which a number of communities were selected for this pilot phase. PEA aims at full involvement of the community in the development process and technology adaptation (MAFF 2000b, p.5). This approach was expected to address people’s attitudes towards their own environment and adoption of interventions, community empowerment and facilitation of farmer-led extension. In this way, it was hoped that the Transfer-of-Technology (TOT) element, inherent in earlier approaches could be minimised. This programme was however just in its preliminary pilot phase in the field at the time of the study.

Statement of the Problem

There are estimated to be 1 085 000 farmers in Zambia (CSO, 1998, p.111). The farming community can be divided into three categories based on levels of mechanisation. Firstly there is a category of commercial farmers, comprising mainly rich farmers concentrated in the narrow corridor along the railway line running across the country from the north in the Copperbelt province to the southern province of the country. This category is highly mechanised with the use of modern technology and high management practices. There are about 2000 of them.

A large percentage - about 97% (CSO, 1998, p. 111) - of the farming community is made up of smallholder farmers – who are the focus of this study – who are resource-poor and dependent on credit facilities for farm inputs and government-operated-extension services. This category of farmers is characterised mainly by the use of hand hoe cultivation and also depends mainly on unpaid family labour. At least 1 052 000 households classified as smallholder farmers in the country. The medium-scale farmers also called the semi-commercial farmers, fall in between the commercial and smallholder farmers. This category is considered as a transition phase to commercial farming and it is mostly distinguished by its use of animal draft power in its main farming operations. The smallholders and medium-scale farmers together account for up to 60 per cent of the total crop production in the country.

The restructuring of the economy has meant that the government has withdrawn most of its support in terms of input supply and marketing of produce to smallholder farmers, in the hope that the gap left would be filled by the private sector. But the extension service is still perceived to be government responsibility, and the private sector is not developed enough to provide extension services to the smallholder farmers who are just too poor to be able to meet the cost of extension services, which they however need. So, in this way extension service to smallholder farmers is treated as a public good.

Though extension services have been provided to smallholder farmers in various approaches, there hasn't been a sustained improvement in the lives of the rural people who, for the most part, depend on agriculture as their occupation. The failure of many extension systems can be attributed, in part, to a lack of involvement of the target populations in the process of extension delivery, which is a learning process. Therefore, in order to make the extension system more effective and responsive to the needs of the smallholder farmers, the aspect of participation by the community (smallholder farmers) has to be fully incorporated into the extension service system. Hence there is need to know the current situation regarding the levels of smallholder farmers' participation in the current system and also how satisfactory the system is to the clientele. This can be a basis for re-organising the system to make it more effective and appropriate.

Objectives of the Study

The general objective of the study was to evaluate the ministry-operated agricultural extension service delivery with respect to the participation of various sub groups of the smallholder farmers, with the purpose of making suggestions as to how participation of the majority of smallholder farmers can be improved thereby making the extension service more effective.

Specific Objectives

1. To describe the agricultural extension service as it is currently implemented on the ground
2. To find out the level of access to extension services by smallholder farmers under the restructured system of extension (under the Agriculture Sector Investment Programme – ASIP).
3. To find out the nature of smallholder farmers' participation in the extension service delivery system.

4. To find out the factors which influence the participation of farmers in agricultural extension activities.
5. To find out and describe the factors that affect the extension workers in their efforts to facilitate participation of smallholder farmers in extension activities under the restructured system of agricultural extension service.
6. To make recommendations to extension agents, planners and politicians on how participation of smallholder farmers in the extension programme can be improved under the prevailing smallholder conditions in the study area based on the findings of the research.

Area of Study

The study was conducted in Mumbwa district of the Central Province of Zambia. It is one of the six districts in the province. The district is divided into eight agricultural blocks. Each block is manned by a Block Extension Officer (BEO) who supervises extension activities in agricultural camps that fall within his/her jurisdiction. Each block is further divided into agricultural camps, which are the basic areas of operation for the Camp Extension Officers (CEO). There are a total of 36 camps in the district.

Methodology

The study relied by and large on quantitative research design, although a qualitative approach was also used to help in triangulation. In order to meet the research objectives both primary and secondary data were collected.

Collection of Primary Data

In terms of primary data, a scheduled structured interviewer-administered questionnaire was administered to 100 smallholder farmers. This was used on account of the low literacy levels in the study area. In addition, observations during the research and the field experience of the researcher were also utilised to complement the questionnaires.

Semi-structured interviews were also employed to find out from extension workers about the factors that affect their work in as far as encouraging smallholder farmers to participate in agricultural extension activities is concerned. Senior officers were also interviewed using a semi-structured interview mostly how the extension system operates and the kind of limitations/constraints that the extension system faces. Personal observations were also employed to augment the above forms of primary data collection.

Collection of Secondary Data

Secondary data collection complemented the primary data collection. Literature from the Ministry of Agriculture Food and Fisheries (MAFF), the University of Zambia (UNZA) and related organisations was used and served as sources of secondary data. Other literature from University College Dublin (UCD) was also reviewed.

Sampling for Structured Interviews with Farmers

One hundred smallholder farmers were interviewed. The sample was drawn from two agricultural blocks namely Mumbwa Central block and Nambala block, out of the eight agricultural blocks that are in the district. The blocks were selected using convenience sampling procedure to lessen problems relating to accessibility, especially with the limited time under which the data collection exercise was conducted and the vastness of the area of study. However, these agricultural blocks are to a very large extent similar to the rest of the agricultural blocks in the district with regard to agricultural extension activities. Therefore, the validity and representativeness of the study outcome were not

seriously jeopardised. Then two agricultural camps were selected from each of these two blocks also by use of convenience sampling, so that in total four agricultural camps were selected. From Mumbwa Central block, the two camps that were selected were Mumba camp and Kabwanga camp. Then from Nambala block, the two camps that were selected were Kabulwebulwe camp and Moono camp.

Interviewees from each of the four camps were selected using the non-probability sampling procedure of systematic random sampling. The camps selected had farmer registers which served as sampling frames. A total of 25 respondents from each camp were selected, and so an overall total sample size of 100 was drawn. This sample size and sampling procedure was used to fulfil the research purpose taking into account the time, human, material and financial resources that were at the researcher's disposal. Notwithstanding the limitations of the overall sampling process, adequate care was taken to ensure that the data collected was to the best of the researcher's knowledge, a reflection of the responses from the respondents in the area of study at the time the study was conducted.

Sampling for Semi-structured Interviews with Extension Workers

For semi-structured interviews with extension workers, the total sample of seven respondents was drawn using purposive sampling procedure. Three of the seven were field extension workers at camp level (camp extension officers), one was a field extension worker at block level (block extension officer) and three were senior staff at district level including the Senior Agricultural Officer, the Chief Agricultural Supervisor and the Senior Technical Officer. All these were successfully interviewed. Although there was a possibility of sampling process used to affect the interview results, it is felt that the results would still be valid and representative of all extension workers in the district, considering the fact that they operate under very similar circumstances.

Data Analysis Tools

The data that was collected from farmers by use of structured questionnaires were analysed using the Statistical Package for Social Sciences (SPSS) analytical package. Descriptive statistics, crosstabulations, and other SPSS applications that were found to be useful in achieving the study objectives were utilised.

Rationale of the Study

The reason for the government to restructure the department of field services of the Ministry of Agriculture in the mid 1990's was basically to rationalise the delivery of extension services to farmers. This is because the improvement of extension service is critical to the sustained development of agriculture. But for any improvement to take place, extension must be able to create a positive change in the situation of the majority of the target population or farmers. Therefore, by examining the level of access to extension services by farmers and identifying the factors that affect their participation in the extension activities, this study seeks to come up with recommendations that can be used to make agricultural extension more effective in meeting the farming needs of the more smallholder farmers from various sub groups rather than only a few farmers.

CHAPTER TWO: CONCEPTUAL AND THEORETICAL FRAMEWORK

Introduction

This chapter is broken down into four major parts. Part One deals with the conceptual overview where major terminology of the study such as development, community participation and related concepts have been defined. Part Two looks at the theoretical orientation of the study. In this part, a brief theory behind the importance of rural development and the theory of community participation including that of the evolution of community participation and the essence of participation in agricultural extension are analysed. Part Three gives the theoretical perspective of how to generate participation while the final part looks at the theory of evaluating participatory programmes.

The above outlined issues are covered to enhance the understanding of community participation and related issues from various stand points and also to find a common ground for these points of views especially as they relate to agricultural and rural development.

Part One: Conceptual Overview

Introduction

Community Participation cannot happen in a vacuum, rather it has to happen where there is a vision or a goal to bring about positive change in the lives of the people concerned. And so for the rural people – who are the focus of this study - it has to happen within the realm of Rural Development. Therefore, to begin with it would be imperative to briefly define the concept of rural development.

Defining Rural Development

It would probably be easier to approach the definition of this concept by separating it into two concepts namely rural and development.

Rural: Whether an area is rural or not is difficult to say, because various countries, organisations and even professions apply different criteria in their determination of rurality of an area. So, it is almost impossible to get a wider agreement on the classification of an area as rural or urban. In this study however, a rural setting is looked at from the developing country perspective in general and that of Zambia in particular.

In this context, factors distinguishing rural areas generally include among other things long distances from the cities or towns, poor infrastructural (roads, markets, schools, banks etc) development leading to isolation, and also a lack of economic diversity as a common feature (generally agricultural oriented economy). Cleaver (1997, p. 80) observed the same point when he noted that a large proportion of rural population in developing countries tends to depend on agriculture. In Zambia, all areas that are not in the narrow corridor stretching from the Copperbelt down through to the South (see appendix 1), where the infrastructure is relatively more developed are considered as rural.

Development: Development is a wide subject. There is no one conclusive definition of rural development. It has been defined in various ways in a lot of literature. Unlike in the past where development was seen as being synonymous with economic growth it is now perceived to be a multi-disciplinary process, necessary to the well-being of the people in a particular locale. Todaro (1987, p. 85) looked at development as being a movement from an unsatisfactory condition to a materially and spiritually better one. But later he further developed this perception by identifying such things as changes in social structures, popular attitudes, and national institutions, as well as the acceleration of economic growth, eradication of inequality and eradication of poverty as being part of the definition of development (Todaro, 1994, p.16; Todaro, 1997, p. 16). Therefore, it would

follow that for rural people, especially in developing countries, a positive change in economic indicators could be meaningless by itself, and it is on this account that the human welfare factors (Chambers, cited in Tamayamali, 2000, p.14), such as livelihood, capacity, equity and sustainability become very vital. And Chambers (1983, p. 145) gave a complementary definition of rural development as being:

“...a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need. It involves the poorest among those who seek the livelihood in the rural areas to demand and control more of the benefits of development. The group includes smallscale farmers and the tenants”.

In this definition, it is important to notice that special mention of small farmers as being among the category of poor women and men is made, and also to underscore the fact that development for them would mean being helped to demand and control more of the benefits of development, which can be said to be a form of empowerment achievable through their participation in the development process.

Drawing from the above discussion, it would not be idealistic to conclude that rural development entails an improvement in all aspects that affect the well being of rural people and that the livelihood of these people hinges primarily on agriculture and related economic activities. Therefore, suffice it to say that rural development entails a positive widely clientele-accepted change in the lives of rural people – positive in the sense that it should be able to address issues of *poverty* among the affected people, and widely clientele-accepted change in the sense that majority, if not all, of the poor should be enabled to *participate* in the process that is meant to bring about this change if it is going to be appreciated and sustainable.

This therefore leads to the brief definitions of the concepts of Poverty and Community Participation.

Defining Poverty

In the definition of rural development quoted from Chambers above, reference is made to rural women and men as being poor. There is need therefore to have some understanding of the concept of poverty. Chambers (1983, p.111-114) contended that poverty is one of the five interlocking problems of what he calls the web of deprivation for rural people. Zambia's Poverty Reduction Strategy Paper (PRSP) (CSPR, 2002, p. 7) defined poverty as being more than just access to income but about exclusion from participation in institutions and processes that govern one's life. Like development, poverty is a multi-dimensional phenomenon. In the Zambian rural context, it can be said to be a deprivation of things like a long healthy life, educational opportunities, access to a decent standard of living including such things as income and consumption, housing, health, clean water and sanitation, and also a lack of freedom to exercise choice and participate in society among others.

But apart from being a multi-dimensional concept, poverty is also not homogenous. It varies from one place to another, from one community to another and from one person to another. So, there is need to draw a line between *relative poverty* and *absolute poverty*. While relative poverty is experienced by individuals whose well-being fall short of that of others, not necessarily that they become destitutes or starve but are nevertheless deprived of the many goods and services that others take for granted, absolute poverty is the rawest form of poverty. It implies a lack of food, cash (purchasing power) and reasonable asset base, illiteracy, malnutrition etc. In short it is a condition which deprives its victims of basic human needs. For a rural smallholder farmer in a developing country in general and in Zambia in particular (especially at the time of this study), the later form of poverty applies more than the former.

Defining Community Participation

As noted earlier, Chambers in his definition of rural development alluded to the fact that the poor should be able to demand and control more of the benefits of development in their quest for a better livelihood. The aspects of demanding and controlling give rise to a very important dimension of rural development, which is community participation. But just what is meant by community participation?

Firstly, it would be important to recognise that community participation can occur at various levels namely international, national, regional, and local or grassroot levels. But the focus of this study is on the grassroot level community participation vis-à-vis the rural smallholder farmers.

Community participation as it suggests refers to the involvement of the people of a particular locale in an activity. Craig and Porter (1997, p. 229) defined participation as fostering of local initiative and control. They argued that the general occurrence in farming projects is that priority is given to management of these projects than to making them participatory and the end result has been that the intended beneficiaries participate very little and gain access to very small proportion of project resources. IFAD (1992, p. 342) looked at participation as being based on people's awareness of their social entitlements and economic opportunities, which moves them away from dependency to self-reliance and to having a role in decision-making. A similar view is shared by Cernea (1994, p. 1). IFAD (1992, p. 342) further commented that participation is both a means and an end and also that it is a social phenomenon determined by economic and social relationships between individuals and groups.

Participation could also entail the process of empowerment (Taylor et al 1992, p. 249), through the development of skills and abilities to manage better, having a say in, ability to negotiate with existing delivery systems, enabling rural people to decide upon and take action based on what they believe is essential for development. In short it means involving the local people in the entire development process. It gives chance to people to

develop their capabilities to intervene directly in development initiatives, and therefore making it a form of empowerment for rural people.

From the above discourse it is clear that the concept of participation is one that has been much written about and also that the notion varies widely depending on a lot of things for instance professions, organisations, projects, disciplines and so on. But it can also be argued that participation would mean to have increased control over resources by intended beneficiary groups of people who are excluded from such control such as poor farmers.

Defining Participation in Agricultural Extension

In the context of agricultural extension, the core meaning of participation is much the same as applied to other social sectors, for the simple reason that smallholder farmers form an integral part of the community for which rural development programmes are designed. And agricultural extension is one of, if not the most important programmes meant to address the livelihood problems of rural smallholder farmers. Antholt and Zijp (1995) described participation in agricultural extension as; *“Putting responsibility in the hands of farmers to determine agricultural extension programmes, ...”* In other words, they argued that for successful participation in agricultural extension to be achieved, farmers should be made to be influential and responsible clients rather than passive beneficiaries or mere spectators.

MACO (2002a, p. 5) defined participation in agricultural extension as an approach which *“focuses on the full involvement and participation of the (farming) community in the development process and technology adaptation”*. But van den Ban et al (1996, p. 218) observed that participation of farmers in extension has quite different connotations for different people. They identified six connotations as follows:

1. *Cooperation of farmers in execution of extension programme by attending extension meetings, demonstrating new methods on their farms, asking their extension agents questions, etc.*
2. *Organisation of the implementation of extension activities by farmers' groups, such as meetings where an extension agent gives a lecture, organising courses and demonstrations, publishing a farm paper in which extension agents and researchers write for farmers, etc.*
3. *Providing information which is necessary for planning an effective extension programme.*
4. *Farmers or their representatives participating in organisation of the extension service, in decision making on goals, target groups, messages and methods in evaluation of activities.*
5. *Farmers or their organisations paying all or part of the cost of the extension service.*
6. *Supervision of the extension agents by Board members of farmers' organisation which employ these agents.*

Van den Ban et al (1996, p. 219) went further to describe participation as an efficient way to achieve the goals of extension programme and that it can also be a goal in itself to give farmers more opportunities to influence their own future as well as more power in society.

Therefore, it would be realistic to argue that smallholder farmers' participation in agricultural extension entails genuine reversals so that the intended beneficiaries can demand and control the programme and get the most out of it to enhance their livelihood. It means that smallholder farmers should play an active role in shaping the extension programme to suit their agricultural needs, an aspect which more often than not is considered and accepted to be a preserve of professionals or extension agents. But this perception is difficult to deal with because it is a culture which has been entrenched through a long history of being subjected to policies that promote it, at least in Zambia (MAFF 2000a, p. 8-9). So, if farmers can take control, then it implies that they are

empowered, but for this to happen there is need to enhance their capacity so that they (smallholder farmers) can fully perform their role in the programme, and this would guarantee sustainability.

This therefore leads to the question of what empowerment, capacity building and sustainability (defined later in this section) are.

Extension refers to the process of reaching out to the communities/farmers with the aim of helping them to deal with their problems. Therefore, agricultural extension is a process through which farmers and change agents or extension workers interact for the purpose of understanding situations and exploring of possibilities for problem-solving at community and /or farm level.

Defining Empowerment, Capacity Building and Sustainability

The researcher believes that the aspects of empowerment, capacity building and sustainability form part of the key concepts closely related to participation, hence the need to briefly look at their meaning.

Empowerment refers to kinds of power exercised in the pursuit of life and livelihood. This power could be social, psychological, political etc. so there is need for all members of the local community to share in the power/resources that accrue to that community without being excluded. It enables individuals as well as local groups and communities to identify and shape their lives and the kind of society in which they live. It is the act of raising awareness among the conventionally ‘powerless’ people so that they can influence change for their own good. This is an aspect of participation which is sometimes dreaded (IFAD, 1992, p. 359) by some change agents as it in effect seems to challenge the balance of power.

Capacity Building as it suggests implies creating of capacity in the members of the community to be able to effectively participate in the programmes meant to improve their

livelihood. It entails developing the necessary skills among the members of the local community that would enable them carry out and maintain initiated programmes. In this regard, general management skills in such things as community mobilisation, rural appraisal, needs assessment, monitoring and evaluation, resource acquisition both from within and outside community, and so on should be a pre-requisite. A great number of scholars have attributed project/programme sustainability (define below) to proper capacity building.

Sustainability is a subject that has been widely discussed and written about. Chambers (1997, p. 11) talked about sustainability in the context of long-term perspectives that should apply to all policies and actions, with sustainable well-being and sustainable livelihood as objectives for the present and future generations. The World Commission on Environment and Development (Bruntland Report, cited in MAFF 2000a, p. 34) looked at sustainable development as one that meets the needs of the present without compromising the ability of future generations to meet their own needs. But in any case, it is used in reference to the period of time during which development benefits should last. Being rational, people would always want to maximise not only the benefits but also the length of time that the benefits of development can be enjoyed. So, the time dimension of development is basically what sustainability is about. For smallholder farmers, new agricultural technology should be appropriate, practical and effective by answering their needs on a continuous basis.

Conclusion

On the basis of the conceptual discourse given above, it is clear that development is a process of change for the better in the lives of people for which it is designed. It can also be inferred that participation entails the active involvement of primary stakeholders (members of the local community) in analysing their situation and in all decisions related to development objectives, as well as in the activities of a programme. Participation therefore encourages local control, enhances capacity among the local people which leads to empowerment and consequently to sustainability of the programme.

Part Two: Theoretical Overview

Introduction

This section gives the theoretical discourse of the topics that are related to the concept of participation. It first takes a brief look at the importance of rural development followed by the arguments about the role of agriculture in rural development. Then it looks at the evolution of community participation and the forms of participation. It further gives the theoretical orientation of the essence of farmer participation in agricultural extension.

Importance of Rural Development

It would probably be helpful to pose the question, why should the development of rural areas be of concern? as the starting point in the discussion of this subject. Certainly, the development of rural areas is unquestionably an important factor for a great many reasons, which cannot be exhaustively discussed here.

Empirical evidence has over the years indicated that not only does a large percentage (about 70 per cent – 4 billion) of the world's population live in developing countries, but also that a very large proportion of this population live in rural areas. Stewart (1995, p. 149) in his book, *Adjustment and Poverty, Options and Choices*, noted that the number of people in poverty in rural areas hugely exceed those of the urban areas. He further explained that rural poverty typically accounted for 80 per cent or more of total poverty, in part because, in most countries the incidence of poverty is higher in rural areas and also because the majority of the people live in rural areas. MAFF (2000a, p. 13) gave a general comparison of poverty incidence between rural and urban areas in Zambia, and according to this comparison the former have about double urban poverty levels (82.8 per cent compared to 46 per cent). It was further noted that more than 80 per cent of the rural population was poor of which smallholder farmers accounted for the majority.

A critical analysis of the aforesaid would undoubtedly underscore the importance of rural development for developing countries in general and for Zambia in particular, not only on the basis of the economic benefits that may result from such development, but also on the basis of fulfilling the social obligation of helping the many who inhabit rural areas.

The Role of Agriculture in Rural Development

Being a multi-dimensional concept as alluded to already, rural development has to fulfil a number of people's requirements or needs. Goulet (cited in Tamayamali, 2000, p.14), summarises these requirements into three basic core-values namely *self-sustenance*, *self-esteem* and *freedom*. However, more emphasis will be paid to the first core-value as it is by and large a prelude to the attainment of the latter two.

For people to survive, they should have recourse to food, shelter, health and protection, which are the basic needs. These needs form the foundation of the core-value of self-sustenance. Since agriculture is the major occupation for rural people (Campbell, 1990 p. 1; Cleaver, 1997, p. 80; World Bank, 2000a, p. 8), it follows that most rural people derive food from agricultural activities. This can be achieved by getting all their food requirements from the agricultural activities (crops, dairy, etc) that they are engaged in or by using the income earned from agriculture to purchase food that they may not be directly producing from their agricultural enterprise mix. From this point of view it can be said that agricultural activities provide people with both food and empowers them with the means of accessing other needs (income).

Shelter is another basic requirement for the core value of self-sustenance to be achieved. It may not be possible for rural people to have good shelter if their earnings are poor. So, because the majority depend on agriculture for their earnings, an improvement in agriculture would consequently enable them to have better shelter.

Similarly, a better income from agriculture can entail an improved access to food, as noted earlier, and this is an ingredient of good health as it can lead to improved nutrition.

In the same vein, access to medical care (assuming that medical facilities are available in a particular locale) can be improved. Therefore, through agriculture it is possible to meet the health requirements of the rural communities. Therefore, if people have access to food, health and shelter, then they effectively have self-esteem and freedom. Self-sustenance is therefore a critical parameter for the survival of the rural people in developing countries because without it, the attainment of the other two necessary core values cannot be realised.

If the fulfilment of the core values of self-sustenance, self-esteem and freedom for rural communities can depend on agriculture as it has been shown above, then it can be right to argue that, by and large, agriculture is more than a means of earning a living (Staudt, 1991, p 20) in much of the developing world, as it is a way of life, permeating the household divisions of labour and food. This inference can also be drawn from Chambers (1997, p. 170), who explains that the rural population evolve livelihood strategies which - though non-linear, multi-storey, sequential and interactive, and they are mixed and managed in different ways - they ultimately evolve around farming which is the major occupation. Nonetheless, it would be important to also reckon that investment in non-agricultural activities can complement the agricultural sector in the quest for rural development.

Though there are various spheres of activities to the overall rural development such as public investment in infrastructure, social services (water and sanitation, etc), health, education and employment, Moris et al. (1993, p 67) acknowledged that agricultural development is the mainstay of the economy in rural areas of the developing countries. Therefore the introduction of new technology would be a particularly powerful way of inducing change in productions and consequently in incomes. The domain of agricultural research, technology development and appropriate extension design (participatory), therefore, merits particular attention if agricultural contribution to rural development has to be significant. From this view, agricultural contribution to rural development can be looked at from four angles as discussed below.

Product Contribution: Firstly the non-agricultural sector of rural areas have a strong reliance on rural agriculture. This reliance is not only for sustained increase in food requirements, but also for raw materials used in most processing industries such as textiles, dairy, edible oil, tanning etc. Kuznets (cited in Ghataka, et al. 1984, p. 26), calls this the '*product contribution*' of agriculture to rural development. This leads to the generation of employment opportunities for the unemployed population of rural areas.

Factor Contribution: There is a linkage between agriculture, economic growth and development. In this linkage, agriculture is a source of capital for investment elsewhere in the economy. This transfer of surplus capital from agriculture to non-agricultural occupations, leads to the second agricultural contribution, known as the '*factor contribution*' (Kuznets cited in Ghataka, et al. 1984, p. 26) of agriculture to rural development. For example, the growth in rural construction, personal services, simple manufacturing and repair (Chambers, 1993, p. 113) are major channels through which poor people share in agricultural booms even when they have not been direct beneficiaries of higher crop prices.

Market Contribution: Since the agricultural population forms a substantial proportion of rural communities in most developing countries, their buying power will highly depend on the earnings from their agricultural enterprises. Therefore, they (rural people working in agriculture) form the market for both the producer and consumer goods that are produced from both agricultural and non-agricultural activities. Kuznets (cited in Ghataka, et al. 1984, p. 26) calls this the '*market contribution*' of agriculture to rural development. The World Bank, (2000b, p. 67) also pointed out that beyond the direct benefits (food, earnings/income, etc), growth in agricultural incomes appears to have been particularly effective at reducing rural poverty because of demand spillovers to local markets in which the non-farm rural poor have a stake.

Foreign Exchange Contribution: The fourth contribution of agriculture to rural development is called the '*foreign exchange contribution*'. This arises when agriculture augments the country's export earnings. In this case, expanding the production of

agricultural produce for export increases the export earnings. In this way agriculture would contribute positively to the balance of payments of a country in general and possibly, the benefits from the improved balance of payments would trickle down to the rural areas through improved social services.

From the above discussion, it can be concluded that, while the argument that the economic and social development of rural areas is no longer synonymous with agricultural development (Department of Agriculture and Food, 1997, p. 1) may be true for developed countries, it is difficult to apply it to developing countries in general. Some of the reasons for this view not to hold for developing countries have already been advanced. Cleaver, (1997, p. 80), indicated in his paper that 6 percent to 7 percent annual economic growth rates in most African countries require an agricultural growth rate of between 4 percent and 5 percent. This is due not only to the large contribution of agriculture to GDP, but the fact that in most countries the major industries are agro-industries, agricultural marketing and farm input supplying.

In the light of the issues raised above about the role of agriculture in rural development, it would be extremely difficult if not fallacious, to dispute the centrality of agriculture in as far as the development of rural areas of developing countries in general and that of Zambia in particular, is concerned.

Evolution of Community Participation

It is important to mention from the outset that community participation is a concept that traces its origins from non-agricultural sources. But it is a concept that has increasingly found its application in the agricultural circles just like in many other development spheres. The application of community participation has over time tended to be increasingly functional than conflictual.

In the early second half of the last century, community participation was associated more to politics, as a means by which the oppressed could be liberated. It is a concept that was

popularised by a Brazilian educationist, Paulo Freire. In his book *The Pedagogy of the Oppressed*, he saw education as the conscientisation of the people, the raising of their self-esteem and capacity to organise themselves and challenge social injustice and gain freedom from oppression. In Latin America for example, community participation was used to partly inspire armed struggles and social organisations (Freire, 1996, pp. 68-105) during political repression in Brazil in the 1960s. This kind of participation was therefore more conflictual than functional. Similarly, most struggles against colonialism in Sub-Saharan Africa (SSA) utilised this form of participation. For instance, the struggle for political independence in Northern Rhodesia (now Zambia), used this form of participation.

As countries attained independence, participation was now increasingly used in development. In East Africa, participation was applied in Development, Education, and Leadership Teams in Action (DELTA) (Hope et al, 1992, p. 5) which was adapted from Paulo Freire's concept. There has been an increasing recognition of the role of the poor in development process. The close of the 20th century and the beginning of the 21st century has witnessed a proliferation in the application of participation in various fields of development. The concept has assumed a more functional role than in the past. Various organisations, professions and institutions are now emphasising the need for participation especially of the weaker majority sections of society in development processes. In fact, making reference to community participation seems to be currently the 'in thing', if approval has to be won from the development fraternity. This scenario threatens this important theme to be reduced to mere rhetoric.

Despite so much talk and literature about the need for participation of especially the disadvantaged groups in society in the development process, there is seemingly a big disparity between what is being said and what is being done to achieve it. Saasa (1990, p. i) noted that since the recommendations by the World Conference on Agrarian Reform and Rural Development (WCARRD) in 1979, few institutions have in their practical work managed to develop a successful and replicable participatory approach. Most of the development strategies that have been used in most rural areas in Zambia for example,

have utilised pseudo participatory approaches that have not managed to enable the marginalised groups of society such as women, and the poor to actively influence project planning and implementation.

To conclude on this subject of evolution of participation it can be argued that though its meaning may be principally the same, its application has been slowly changing over time.

Forms of Participation

Because of the long history behind the concept of participation and its wide growth in usage in various fields of development, it has been interpreted and perhaps 'misinterpreted' in many ways. This situation has given rise to various types of participation, a situation that has brought confusion among change agents or agencies as to which one would be appropriate for a particular situation.

Various scholars have tried to develop distinctions between types of participation. Pretty and Vodouhe (1997,p. 48) cited an earlier attempt to come up with what they referred to as a clear typology of participation. And in this regard, participation was arranged into seven types namely *Passive, Information Giving, Consultation, Material Incentive, Functional, Interactive, and Self-Mobilisation* which are briefly described below.

Passive Participation is one where people participate by being told what is going to happen. It is a unilateral announcement by administration or project management without any listening to peoples' responses. The information being shared belongs only to professionals. For *Participation in Information Giving*, people participate by answering questions posed in surveys and do not have an opportunity to influence the outcome. In *Participation by Consultation*, local people are consulted and their views are listened to but do not take part in defining problems, solutions and in decision-making. *Participation for Material Incentive* is where local people's participation is incentive-driven in the sense that they provide their resources such as labour in return for things like food, cash etc, yet people have no incentive to continue participating when incentives end.

Functional Participation is where people participate by forming groups to meet predetermined objectives related to the project, and such involvement come after all key decisions in terms of planning and management have been made by external agents upon which instructions tend to depend. In *Interactive Participation* however, local people have an opportunity to participate in joint analysis, action planning, implementation and consequently have a stake in maintaining structures or indeed practices. Finally, *Self-Mobilisation* allows local people to participate by taking their own initiative independent of external agents to change the systems. They develop external linkages for resources and information but retain control over how resources are used.

But White (1996, cited in Tamayamali 2000, p. 20) identified four forms of participation as being *nominal, instrumental, representative and transformative*.

Nominal Participation; with this form of participation the community is mechanically organised into groups, which exist irrespective of their effectiveness, but only serve as a show and to justify claims for support or funding. This was typical of government departments in developing countries where long lists of community groups, such as co-operatives existed only on paper, as most of them were not active. These co-operatives failed to represent and protect the interests of the general farm populations, despite statistical evidence of thousands of officially recognised co-operatives. In this sense, participation is in nominal terms and only exists to support the system rather than the needy.

Instrumental Participation; in this form of participation, the local community is asked to contribute towards the cost of the project by making available a certain percentage of the resource requirements, called 'counterpart fund'. For instance in Zambia, the government Ministry of Agriculture and Co-operatives requests the communities to contribute 25 per cent towards the cost of the project, which they apply for, from the Rural Investment Fund (RIF). This is usually in the form of labour and locally available material. This form of participation serves the interest of efficiency and effectiveness to

the development agents and the cost interest to the community to have the facility at some sort of subsidised cost.

Representative Participation; this type of participation allows the ‘recipient’ population to express their problems and needs even though this process is formatted and controlled by the external agents. Since the problems and needs are broad based, this approach serves the interest of sustainability for the outsider agent while a wider input and influence is generated from the community. Broad representation is what the outsider wants from the community.

Transformative Participation; this form of participation entails some form of community empowerment. Local people are involved in the entire development process right from the beginning of considering of options, making decisions, through to implementation and assessment. In this way, community members are practically involved and ‘learn by doing’ so that capacity for the local people is also enhanced.

Looking at the two types of classification of participation given above, it can be argued that they are very similar to each other. Although Pretty went a little further to come up with seven types, each of them can find a place under the four types described by White (in Tamayamali 2000, p. 21-22).

Nevertheless, it would be important to recognise that it is difficult to have clearly defined types of participation, rather it progresses from one level to the next. Therefore it would be correct to conclude that participation is a continuum from the least amount of participation to the most amount of participation. If the above classification has to be applied, then participation can be said to be a continuum between Passive or Nominal to Self-Mobilisation or Transformative forms of participation.

The highest form of participation, it has been argued, is self-mobilisation of the community, whose achievement requires commitment by all stakeholders. This is the basis of development from within, as noted by Taylor and others (1992, p. 237). But

empirical evidence points to the fact that to many rural development institutions in Africa, participation mostly meant simply providing information. This clearly indicates that the dominant application of participation are rarely better than instrumental as observed by Pretty et al (1997, p. 49).

In view of the above discourse on the forms of participation, it can be argued that participatory strategies fall between the top-down and the bottom-up approaches. These two, it can be argued, form the ideal extreme ends of the practical participation continuum. Therefore, to avoid confusion in its use and interpretation, it would be of great significance to qualify the term participation by explaining exactly what sort of participation is being referred to. As to which form of participation is desirable, it would be right to observe that it really depends on the nature and objectives of the project or programme, but what is critical is that development agents, agricultural extension workers included, should strive to create an enabling environment for maximising participation of the local people because of its essence in enhancing achievement of the desired results.

Essence of Participation in Agricultural Extension

There seems to be a general agreement by many scholars and institutions that although there have been some noteworthy successes in some instances, public agricultural extension systems in general have not done much in as far as meeting the varied nature of the smallholder farmers' needs is concerned. It is essential therefore that the most significant shortcomings of public agricultural extension which include poor responsiveness to farmer needs, lack of ownership by intended beneficiaries, failure to reach the poor and women farmers, limitations in the quality of field and technical staff and also a high and unsustainable public cost (Antholt et al, 1995) are addressed.

Most of the above shortcomings can be addressed by making extension more demand-driven and accountable to smallholder farmers. This is where participation becomes an essential ingredient in the overall extension system. It can help to ensure that services are

relevant and responsive to beneficiary needs. IFAD (1992, p. 342) noted that promoting people's participation is fundamental to the provision of services and resources for human development.

Community participation as it suggests refers to the involvement of the people of a particular locale in an activity. It entails the involvement of the community (target group) in all the stages of the development process. Local people should also be part and parcel of the planning and implementation of the development projects if they have to have a sense of ownership. For instance, most of the post-independence rural development initiatives in Zambia such as provision of water facilities, dams, dip-tanks for livestock etc, were completely designed and implemented by outsiders. A few years down the line, these facilities were completely run down. The many remnants of these facilities are today not uncommon in most rural places of the country, and they stand as testimony of a lack of reasonable participation of the locals.

Participation could also entail the process of empowerment (Taylor et al 1992, p. 249), through the development of skills and abilities to manage better, having a say in, ability to negotiate with existing delivery systems, enabling rural people to decide upon and take action based on what they believe is essential for development. In short it means involving the local people in the entire development process. It gives a chance to people to develop their capabilities to intervene directly in development initiatives, and therefore making it a form of empowerment for rural people.

Another essence of participation is that it expands the opportunities for promoting technologies that can improve farmers' incomes and it is also farmer-centred as it helps to shift the focus of attention from simple production problems to encompass even the problems of the whole farm system.

Participation can also make it possible for extension workers to 'hand over the stick' to farmers. Antholt (in Carney, 1995, p. 39) argued that the single most important thing in an extension service is control by beneficiaries, because it can among other things lead to

increasing the chances of sustainability and provide a basis for a more demand-driven responsive service.

Participation is essential because it also forms the basis of development from within, as noted by Taylor and others (1992, p. 237), which recognises the importance of the community, but also acknowledges that communities have considerable differentiation based on issues such as culture, class, gender and other socio-economic parameters, which can affect the optimisation of participation. Therefore participation helps to enhance equity in communities

From what has been noted above on the essence of participation, it is clear that putting participation as an integral part of the extension system would improve upon the delivery of extension services. It has been observed that participation is essential because it leads to the achievement of a lot of things such as making the extension system demand-driven, farmer-centred, involve all primary stakeholders, leads to building a sense of ownership among farmers, and leads to empowerment, equity and sustainability. Finally it also leads to partnerships between Public Extension, Non-Governmental Organisations (NGOs), Private Sector and other stakeholders within rural communities, because of the linkages that result from trying to address problems of the whole farm system rather than production problems only.

Conclusion

A number of issues have come out in this section. There is acknowledgement that rural development is important especially in developing countries because there are more people living in rural areas than in urban areas and that these areas still remain undeveloped. There is also a recognition that rural poverty is much higher both in incidence and intensity in rural areas than otherwise. It is also established that agriculture is central in dealing with problems of rural poverty as it is the occupation of the majority of rural dwellers and makes important contributions to rural development.

It is also noted that community participation is a concept which though may not have an agricultural background is important in agriculture especially that its use has become more functional than conflictual. Also highlighted are various types of participation which could be classified under nominal, instrumental, representative, and transformative types of participation, depending on the extent of local people's participation.

It's also clear from the discourse that community participation is essential because it empowers the locals, fosters sustainability and consequently reduces dependency of the community on external assistance.

Part Three: Generating Participation

Introduction

This section looks at the sources of participation, the understanding of the roles of local people and their socio-economic strata/structures. It further looks at the role of extension workers in fostering participation and finally gives a brief theory about the challenges related to fostering community participation.

Sources of Participation for the Community

Goulet (cited in Taylor et al, 1992, p. 238) argued that participation can come from three different sources namely; induced from above by some authority or expert, bottom-up sources or from within the community, and finally 'the external third agent'. Each of these sources has its own merits and demerits. In the authority or expert-induced participation, government is considered as the main agent and so it is equalled to 'mobilisation' of the community. And this is often meant to help governments achieve their own goals unless otherwise there is a coincidence in the views and needs of the community with those of government. This therefore reflects a top-down approach.

In the bottom-up source of participation, the community members themselves initiate activities to address their felt needs. Participation is induced from below and so here the community plays a key role in decision making than in the above source. Then in the case of the 'external third agent' as a source, usually NGOs are considered to be these kind of agents. This source is considered to be more like the bottom-up source as it is said to aim at empowering people.

It is critical for any agent to ensure that people are empowered and are able to make decisions relating to how their needs would be addressed and not to use them to achieve objectives that are unknown and unbeneficial to them.

Understanding the Roles of Local People and their Structures

While it is easy to criticise development workers (extension workers included) for not adequately involving the majority of the locals in the development process, it is important to reckon that the task of encouraging people, especially the disadvantaged, to participate in development activities is not quite easy. This is largely because it is done against the background of development approaches that have over time tended to benefit only the minority socio-economically powerful people and the elite of rural societies, leaving the poor majority worse off than before. This situation has played a part in discouraging recipient/target populations from participating in even genuine development attempts. The heterogeneity of the community is another issue, which needs to be understood along with other factors, coupled with the background of development agents.

Generally, development agents/extension experts from overseas tend to have an urban background with very little sense of the local community in a developing country. Most of them are born, brought up and educated in an urban setting, and have very little idea of how it is living in small relatively closed rural communities or villages, deficient of an atmosphere of openness and relative freedom to pursue their own interests. The same is true for urban educated extension workers in developing countries. It is therefore

important for extension workers to take time to understand the local roles and power structures of the communities if they have to effectively work in rural locales.

Local Roles: It is imperative for development workers to understand the roles of individual members and categories of people in the community. Rural communities are by nature traditional and their social organisation is such that they highly value the basic or primary group relationship based on the family, the clan or kin group and the neighbourhood. Individualism is clearly subordinate to the interests of the family, the clan or the community (Burkey, 1993, p. 45).

The roles of individuals in the family are traditionally determined (Boserup 1989, cited in Oxfam Journal 1999 Nov., p. 3), multiple and quite rigid. The distribution of roles is based on age and sex. Usually the man's domain is the farm while the kitchen and the yard is the woman's, though this is just in terms of control, as the woman's labour is used on the farm as well. Men can take up leadership roles in the community but women are restricted from doing so. This division of labour has underlying power implications between men and women and so affect participation of especially women in development/extension activities. For instance in rural Zambia, there is a tendency to restrict women from attending public meetings or community development/extension meetings. Consequently, it is difficult for women to participate and later on to take up leadership roles in the community.

It is not uncommon to find that leadership roles in community groups such as farmer co-operatives, development clubs or associations, etc are dominated by men. Women's participation in public meetings is not encouraged, and even where they manage to do so, they do not express themselves freely and fully in front of men. Brydon et al, (1989, p. 86), stated that while some women have access to some resources, their status and ability is severely limited by the constraints placed on their public appearances. Like women, poor people too, do not usually take up leadership roles. Customs of this sort have only served to effectively exclude women and the poor from participating in the development/extension activities. It is important therefore to be aware of these and help

find ways of getting such groups to take part in the development activities, if the flow of benefits has to balance up.

The kin or clan system, which comprises relations, is expected to offer long-term support and also help in times of crises. The neighbourhood comprises people living in the same locale and not necessarily relations, and it is an important source of help in times of crisis and high labour demands. In most of SSA and in Zambia in particular, these primary group relationships have today proved to be very important in the face of the increasing number of orphans, largely due to the AIDS pandemic. These orphans are mostly looked after by their relatives, and the communities also help families affected by this problem and problems of a similar nature. Also during times of high labour demands, such as ploughing and harvesting, the community is an important source of help. It is therefore important for development workers to know the customs, values and practices of rural societies in terms of division of roles in the community.

Above all, a discussion on the roles of local people in extension activities would be incomplete if it does not recognise the presence of indigenous technical knowledge (ITK) among smallholder farmers. Though smallholder farmers may be lacking in good formal education, they have overtime through experience managed to build up a very rich resource base of ITK (MAFF, 2000a, p. 45). Through interaction with the community and the environment within which they live, they understand their situation and problems very well and have over time innovated ideas for coping. IFAD (1992, p. 351) acknowledged that the innate wisdom of the rural poor concerning the environment with which they are intimately familiar combined with enlightened training can play an important role in making the project have a manageable scope, not rely unduly on imported technology, have low recurrent costs and be sustainable. Therefore there is need for extension workers to particularly take advantage of this knowledge by listening to smallholder farmers.

Apart from understanding the roles of local people, it is also important for the development/extension workers to analyse and understand the leadership and social

economic structures of rural people (Burkey 1993, p. 41) if they are to succeed in getting local people to participate in the development/extension activities. This gives them an insight into the power structures and sources of influence inherent within the community, which is the next subject of discussion.

Social Strata and Power Structures: Rural communities are heterogeneous (Pretty, 1997, p. 50), composed of individuals and groups, with different and often highly polarised interests. Burkey (1993, p. 41) describes members of a village or village complex to be average landowners, merchants, money lenders, village headmen, chiefs, teachers and other government agents and co-operative officials. All these have their positions of power and influence and are more concerned with maintenance of their relatively privileged status. But there is also the category of the poor among the smallholder farmers who are not homogeneous either, as they often have varying interests and needs. For instance the poor could be men or women, the youth, landless, sometimes land owners, fishermen or forest workers, petty merchants or craftsmen etc. It is important therefore to know the sources of power and influence and also the various interests groups that occur within the community. This is because it would help to enable the development intervention to benefit the intended groups and individuals. Burkey's (1993, p. 42) analysis based on the Ugandan power structure in most farming areas of the country, which can also hold true for most rural Sub-Saharan African (SSA) countries, identified various interest groups and classes. The following categories of individuals were identified:

Labourers who constitute landless men and women, surviving by selling their labour; *Poor Peasants* who have insufficient land/livestock to enable them to survive and so often sell their labour on part-time basis; *Middle Peasants* are those who own sufficient land/livestock to meet needs and normally would not have to work for others but seldom hire others too; *Rich Peasants* are those who own more than enough land/livestock to meet their own needs and sell surplus for cash. These never work for others but often hire others to work for them. Others were *Wage earners*, *Artisans*, *Professionals* and *Capitalists*.

The smallholder farmers, by and large, form the poor peasants in most developing countries. Knowledge of class structure is necessary to have an understanding of the community and how it operates. Development agents can therefore know who is participating and who is not, so that measures can be taken to make the extension system inclusive if found to be otherwise. In the same vein, interventions can be designed to address interests of specific sections of society, such as poor women, the youth, the disabled etc.

Usually the rich peasants and capitalists, command a lot of respect in rural areas and exert some influence on the development interventions in these areas. BRAC (cited in Chambers 1983, p. 103) quoted a Bangladesh farmer as saying that: *“we have no power to talk in front of the rich, We are afraid of them. We are always looked down upon and scolded. So, we never know what they are writing”*. This is also true for the poor in SSA countries.

From the above it is clear that the majority of the poor smallholder farmers can not effectively participate mainly because of their vulnerability, weakness, isolation, powerlessness and poverty itself – which Chambers (1983, p. 103) calls the deprivation trap. Special attention should be given to the poor smallholder farmers and further disaggregate them into small and relatively homogeneous interest groups such as alluded to earlier, otherwise efforts to get the majority to participate can just remain a dream.

Similarly, traditional authority/leaders such as headmen and chiefs also influence peoples’ participation in development/extension activities. They are custodians of traditional land, and as such they control the distribution of land. They are also custodians of traditional law and so have an influence in settlement of disputes arising in the community. Because of this, it is not uncommon for subjects (ruled poorer people) to follow the decisions of the headmen or chiefs, irrespective of substance. Mbithi (1974, p. 162-163) acknowledges the high levels of influence that traditional leaders have with respect to decision making in the community, which he attributes to obedience on the part

of the subjects. Extension workers need to identify these people, sensitise them, and generally develop a good rapport with them (MAFF, 2000a, p. 44), otherwise broad based and effective community participation in extension service may be hindered.

At village level, there are also political structures present. In Zambia the grassroots political office is that of the Ward Councillor. It is a crucial position at village level and has quite substantial powers, which can, if properly used, enhance community participation in development/extension activities. This position attracts attention of outsiders who want to be involved in the locality, whether for trade, commerce, natural resource extraction, construction and development projects and also on matters of law and order or security or even politics. In most cases, holders of this office fall prey to corruption and consequently abuse their powers, much to the disadvantage of the poor villagers. But the original idea is to decentralise government administrative powers so as to widen participation. In rural Thailand (Turton 1987, p. 84) for example, similar structures have been abused. But this is an office which can be used by the community to build linkages with external organisations for instance for marketing agricultural produce or even for resource mobilisation.

be involved in extension activities. Religious leaders too, are an important source of influence and power in rural areas. Some of the religious beliefs are at odds with the concept of participation. Certain religious groups do not encourage mixing with people of other faiths, and this can jeopardise participation of the smallholder farmers in extension activities. Religious doctrines sometimes may not be favourable to the achievement of participation. So, it is imperative that religious leaders are sensitised on the need for their members to

Because of the foregoing, it is important that deliberate efforts are made to ensure that poorer people adequately participate in development process, by taking into account the traditional and cultural barriers and other inadequacies as discussed above. Despite the above sources of limitations to participation, the local communities do have strong values of community work, which can be built upon. They highly value communal working for

example. In Zambia for instance it is even reflected in local proverbs such as: '*umunwe umo tausala indaa*', (ciBemba proverb)– literal translation is 'one finger can not pick a louse' – an indication that local people recognise the economies of scale that result from broad based input by the community. There is need therefore to build up on the existing local knowledge by encouraging, especially underprivileged smallholder farmers to participate in extension activities and other development activities.

The Role of Extension Workers in Fostering Participation

Fostering farmer participation is complex. But if resource-poor farmers are to take part in any extension activity, extension workers need to secure their participation. Experience has shown, for instance that, women farmers are much more willing to participate in activities that meet their perceived needs (FAO, 2000, p. 56) and the same is true for other vulnerable categories like resource-poor members of the farming community. It is therefore important that extension workers start by determining farmer requirements and priorities as well as their problems, aspirations and interests. Smallholder farmers, especially those in low income are more likely to participate if actual benefits are directly tied to participation.

In fostering participation, extension workers' role goes beyond the traditional technology transfer to empowering farmers through facilitation of dialogue and information flow using appropriate participatory tools that have been established overtime by various scholars. Pretty et al (1997, p. 48) identified some of these tools as being beneficiary assessment, participatory rural appraisal, and gender analysis among others.

While allowing farmers to make choices about what is important for them and how they would like to achieve their set objectives is fundamental to enabling their participation, it is also important for the extension worker to understand that farmers who take part in extension programmes may not perform their new task very well. Therefore extension workers should ensure that farmers are trained first in participatory methods. This way

farmers would make meaningful contributions during planning and implementing of extension programmes.

The extension worker usually has special technical knowledge and competencies relating to agricultural production and related issues. It should be understood here that shared decision-making in planning and implementation of extension activities with farmers does not mean that extension workers should now stop providing technical advice to farmers. Rather extension workers should accept that farmers too have special knowledge which they have acquired through their long experience with the environment and the use of traditional farming systems. This is the special knowledge which should be taken advantage of. Therefore the role of extension workers in fostering participation would also depend on the knowledge and competencies (van den Ban et al, 1996, p. 221) of the extension worker and that of farmers.

Challenges in Fostering Participation

Participation puts increased demands on the extension worker. Because the participation process brings out the problems of the whole farm system, it means that extension workers would have to divide their attention between many topics as each small group seeks advice about different problems.

The other challenge is that some problems of the whole farm system may not be a direct responsibility of the organisation/institution/ministry from which the extension worker is coming from. Sometimes extension workers might face difficulties in trying to help link the farmers to the relevant government departments (MACO, 2002a, p. 115) like education, health, water etc for help, because they may also have their own agendas and priorities. This can negatively affect farmer participation because what may be their critical needs may not be attended to in time, and this is likely to dampen their morale to participate.

Extension workers may face a challenge in fostering participation in areas where there is a high level of illiteracy as this may mean that the extension worker would have to help in writing/reading certain things for the community. This can lessen the extent of farmers participation especially in making decisions during planning and management, as well as in controlling the activities.

The culture and social structure of the community also pose a challenge to participatory extension as noted by van den Ban et al (1996, p. 224). Some traditions, beliefs, culture and religious practices can indeed have considerable effects on the participation of farmers in extension activities.

Challenges can also arise if the extension worker faces economic hardships. This is a huge problem for most of the public extension systems in developing countries. Extension workers therefore spend more time on personal activities than on their jobs in the quest for raising additional income to supplement the meagre remuneration. As such it is a major impediment to fostering participation which requires patience and more time as indicated in later sections.

The extension worker should be aware of these challenges and find a way of mitigating their impact on the effectiveness of the participatory process with his/her communities.

Conclusion

Extension workers' role as facilitators is generally to take part in the activities together with the farmers and not to knowingly or unknowingly abuse their 'expert power' by imposing their scientific wisdom and professional experiences on the participating farmers. Rather, they should assume the role of guiding and assisting the group in making the activities as fruitful as possible.

Part Four: Evaluation of Extension Programmes

Introduction

This section takes a brief look at the process of evaluating extension programmes. It basically gives an insight into how participatory programmes are evaluated under various circumstances. Evaluation is a process that refers to the periodic assessment of programmes, projects or activities in order to determine their success and failures. MACO (2002b, p. 104) defined evaluation as a periodic assessment of implementation and impact of planned activities to gauge their success. It can be done at different stages of implementing the project or activity, for instance as on-going/mid-term or final/terminal, and sometimes post-terminal evaluations.

Process

There are various methods of conducting an evaluation. Various authors have observed that, there is not one best way of conducting an evaluation (Deshler, 1997, p. 94; MAFF, 2000b, p.75). However, it is important to note that some evaluation approaches suit some situations while others suit other situations. For instance there are occasions when it is suitable to use quantitative approaches and other occasions when qualitative approaches are desirable, or a combination of the two depending on the nature of the implemented activities and the objective of carrying out such an evaluation.

For evaluation of extension programmes, various alternative approaches can be used. Deshler (1997, p. 94) outlined seven major approaches as being expert model, goal-free model, attainment of objectives model, management decision model, naturalistic model, experimental model, and participatory evaluation model. An analysis of these models can reveal that this categorisation is generally based on at least four things namely; who does the evaluation, how the evaluation is done, the purpose for evaluating, and the assumptions underlying the evaluations.

In any case, an evaluation has to be planned. And in this plan there should be a definition of purpose and scope of evaluation, a description of the methods to be used, an identification of standards against which project performance is to be assessed, and also the determination of resources and time required to complete the evaluation. The idea behind this plan is to make the evaluation as manageable as possible and ensure useful results and conclusions.

Usually, there are four basic concepts to monitoring and evaluation (Misra, 1997, 155). These are capability, effectiveness, efficiency and impact. Indicators of these concepts are used to determine the performance of extension. With respect to effectiveness, some indicators that can be used include awareness, number of farm visits, number of field meetings, regularity at meetings, number of field days, number of demonstrations, number of supervisory visits, and number of farmer trainings (Ibid, p. 157). Composite indicators can also be created out of these to determine what may be called average performance. For efficiency, performance index, penetration index (number of adoptions) and achievement index can be created. For productivity indicators, yield can be used. Then extension capability indicators include quite a number of things. This can be analysed by looking at such issues as area of coverage per extension worker, ratio of farmers to extension workers, number of subject matter specialists, gender ratio of extension workers, logistical support, transport, remuneration, extension workers' competence etc (Ibid, p. 159).

Although evaluations can take different forms, there are at least five major elements present in most of them, in one form or another, as identified by Deshler (1997, p. 94). These include (1) focus questions, (2) objects or events to be evaluated, (3) data or evidence, (4) analysis and interpretations using judgement perspectives, and (5) judgements, conclusions and findings.

Conclusion

From the foregoing, it can be concluded that evaluation of extension programmes is critical because it recognises good performance, unveils opportunities for improvement, fosters accountability, and provides new lessons to stakeholders about their efforts. It should not be perceived as a threat to the comfort of those in the system but as an opportunity for ‘taking stock’ of their successes and failures and making amends where necessary. Therefore it calls for honesty on the part of anyone conducting the evaluation if the results have to be useful.

Conclusion to Chapter Two

This Chapter has highlighted a number of issues concerning the concept of community participation and related development issues. It stresses the importance of community participation in rural development especially in dealing with the problem of the vicious cycle of poverty which is endemic in most developing countries. There is also cognisance of the fact that agriculture is an important element in rural development because it provides direct and indirect sources of living for the majority of people in rural areas. This means that extension is critical as it is one of the six important components of the development mix in agricultural development.

Also noted is the fact that participatory approaches are many and fall between top-down and bottom-up approaches which form the ideal extreme ends of the participation continuum. But overall, the purpose of participation especially in extension is to ensure that there is a move away from the traditional and mostly directive approaches to a more non-directive approach to enhance service delivery, efficiency (arguably), effectiveness and sustainability of appropriate technology, by taking advantage of the more often than not unutilised smallholder farmers’ wealth of indigenous knowledge. Also noted is the fact that evaluation in any programme is important as it forms the basis for improvement and so should not be viewed as a threat by those in the system who would like to maintain the status quo regardless of the system’s performance.

Finally, participation is a process and it calls for patience and flexibility on the part of the development agent or extension worker. However, it should be borne in mind that while participation is needed, it is not the panacea but a means to attaining the set objectives of the development programme. Religious application of participation should not override the essence for which development programmes are initiated.

CHAPTER THREE: PARTICIPATION OF SMALLHOLDER FARMERS IN EXTENSION SERVICE ACTIVITIES IN MUMBWA DISTRICT

Introduction

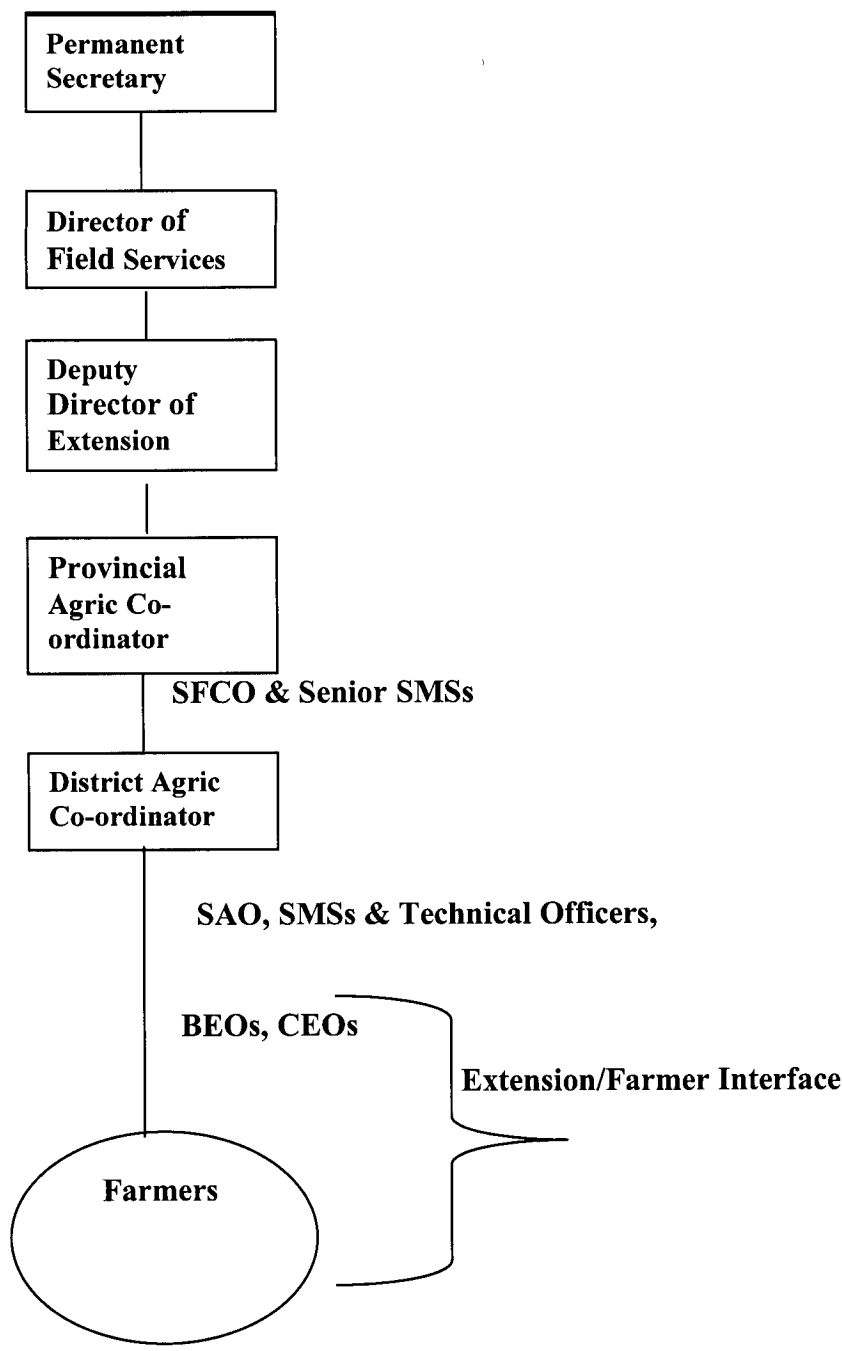
The overall objective of this study was to evaluate the Ministry-operated agricultural extension service delivery with respect to the participation of various sub groups of smallholder farmers, with the purpose of making suggestions as to how participation can be enhanced. To address this objective this chapter is divided into five main parts. Part One opens with a description of how extension is carried out in the area of study, followed by the general characteristics of the respondents as Part Two. Part Three looks at the smallholder farmers’ access to extension service followed by Part Four which identified the various factors that were found to influence participation of smallholder farmers in extension activities and also established the nature of this participation. Finally Part Five looks at the factors that affected extension workers’ efforts in facilitating the participation of smallholder farmers.

Part One: Agricultural Extension in Mumbwa District

This part of Chapter Three describes the process of extension work in Mumbwa District. It begins with the organisational structure of the Ministry of Agriculture and Co-operatives with an emphasis on the Department of Field Services and then describes the operations at farmer/extension interface level.

Organisational Structure of the Department of Field Services: In terms of organisation, the restructuring was meant to decentralise the Ministry in general and the department in particular especially with respect to planning as opposed to what the case was before. This exercise started in 1995 and by and large it involved the ‘right sizing’ of the department through the phasing out of the old positions and creation of new ones. There was appointment of new staff and ‘qualified staff’ and also re-appointment of some old staff to new positions. Given below is the organogram of the Department of Field Services:

Figure 1. Functional Structure of the Department of Field Services of the Ministry of Agriculture and Co-operatives



The above structure of the Department of Field Services can be summarised as follows:

- The Permanent Secretary, Ministry of Agriculture and Co-operatives
- The Director of Field Services, assisted by the Deputy Director of Extension
- Provincial Agricultural Co-ordinators (assisted by Senior Field Service Co-ordinator - SFCO and senior Subject Matter Specialists - SMSs)
- District Agricultural Co-ordinators (assisted by Senior Agricultural Officer – SAO and SMSs and Technical Officers)
- Agricultural Supervisors (Block Extension Officers) in charge of Agricultural Assistants who are Camp Extension Officers (CEOs).

The above organisational structure though meant to be different from the previous structure (MAWD, 1983, p. 15), does not seem to make that difference and it can be argued that there is still some semblance of government bureaucracy and top-down characteristics in it. Even the decentralisation did not seem to be working because the decentralised costing and planning to the district level were not working considering that the planned operations and budgets were usually reduced substantially at a higher level to match resource availability. But what was most worrying was that even the little that was approved was in most cases either never remitted to the districts or was remitted late. This created serious difficulties in fulfilling the planned field operations just as much as under the previous system arrangement.

Extension Implementation: The last in the line of command as can be seen in the above structure are the Block Extension Officers (BEOs) and their Camp Extension Officers (CEOs). Interaction between extension workers and smallholder farmers happened here. Therefore this is a crucial level whose resource requirements need to be addressed in order to make the extension system successful. The extension workers employ various forms of methods for interacting with farmers in their locales such as farm visits, field days, demonstrations, general extension meetings on various topics, ward agricultural shows culminating into the district agricultural show annually, and others. Some of the methods are supplementary to formal methods for instance dramas on various issues

associated with or those affecting farming such as on HIV/AIDS – which has now been taken as being part and parcel of the agricultural extension package in view of its implications on the farming community - during group extension activities, also role plays, etc.

The camp extension worker divides his/her camp in about 6 to 8 zones and pre-determines the days on which he/she would work in each zone in a month in various extension activities depending on the season and the farm operations that come with it. Part of the time in a month is supposed to be spent on reporting matters, usually one day each week. Suffice to say that operations at camp level are still more of the recommendations of the Training and Visit system of agricultural extension.

Farmer mobilisation for extension activities by extension workers is done in many ways. But in most cases, extension workers explained that they mobilised farmers with the involvement of the local traditional leaders. They said that the first step was to approach the local leadership and explain the intentions of holding a group extension activity on a particular day and subject, and the local leaders were in most cases very helpful in mobilising farmers to attend such meetings. But the extension workers also use posters to inform farmers of the activities that they would be conducting. Extension workers observed that turn out is satisfactory if leaders were involved. It was however noted that although attendance on activities organised in this way was usually high, some attendees did not genuinely come to learn and share the information with others but that they attended for other reasons as will be discussed later in this chapter.

As for individual extension methods such as farm visits, it was not necessary to go through the local leadership, and so they directly dealt with concerned farmers. It was also noted that where there were organised farmer groups in place, extension workers found it much easier to work with such groups. When it came to organising group extension activities that required to be hosted by a particular farmer, extension workers said that it was not always easy to convince individual farmers to host activities such as field days because of cultural/traditional beliefs such as witchcraft (discussed later).

Communication during extension activities was usually in a local language as not all farmers are able to communicate in the official language, as it will be noticed later. It was explained that extension workers should learn the language of the local people if they do not already know it, so as to ease communication problems at extension meetings. Otherwise most farmers would shun such activities.

Conclusion to Part One

From the above section of this chapter, it is clear that the involvement of the local leaders in mobilising farmers by extension workers in the area of study is important. Overall extension workers need to be skilful when mobilising farmers to take part in extension activities.

Part Two: General Characteristics of the Respondents

This section gives a description of the general characteristics of the respondents as the heading suggests. The three main characteristics described here are personal, farm and livelihood characteristics.

Personal Characteristics

There are a number of personal characteristics that were examined and these included gender, age, marital status, household size, religion, literacy/education level, and sources farm labour.

Gender Distribution: As already mentioned in the methodology, the sampling procedure used was systematic random sampling. Out of 100 respondents, 32 were female while 68 were male respondents. Although no special sampling procedure to deliberately include women farmers was used, the number of women respondents turned out to be unexpectedly big enough to reasonably bring out the gender related aspects of the survey.

Age Distribution: The age distribution of the respondents ranged from 18 years to 73 years and the average age was 44.8 years of age. Twenty-seven per cent of the respondents were aged 35 years and below while 39% were aged from 36 years to 50 years while 24% of them were above 50 years old. The middle age group (36 to 50 years) constituted the majority of the respondents.

Marital Status: The four categories of marital status found in the study area were single, married, widowed and divorced. By far most of the respondents were married (82%) and then 8% were widowed while the singles and the divorced constituted only 5% each.

Household Size: The size of the household ranged from one member of the household to 20 members with the average size being 8.3 members. When household size was divided into three categories it was observed that 57% of the farm families fell in the category of 5 to 10 members, 24% fell in the category of over 10 members while 19% were in the category of below 5 members. There is therefore a tendency of relatively big household sizes among the smallholder farmers in the study area. When further examination of the composition of the members of the households was done it was found that most households comprised members who were largely under 18 years of age followed by the adults and the elderly respectively.

Religion: All but three of the respondents belonged to the Christian faith with the majority of them being protestants. The three respondents indicated that they were simply not religious people and did not believe in any deity. Of those who were Christians 15.5% belonged to the Seventh Day Adventist Church (SDA), 13.4% to the United Church of Zambia (UCZ) (which is an amalgamation of the Church of Scotland and the Presbyterian Church), 12.4% to the Pentecostal Churches, 7.2% and 1% respectively to the Catholic Church and the Salvation Army. But 50.5% belonged to other churches, which included the Reformed Church of Zambia, Church of God, Evangelical Church of Zambia, Jehovah's Witnesses, the Apostolic Faith Church, Anglican, Zion and Israel churches.

Literacy and Level of Education: In terms of literacy the distribution of respondents was such that 88% of them indicated that they were able to read and write while only 12% admitted that they were not. It was also found that 57% of the respondents had only attended up to primary education while 41% of the respondents had attained secondary education. Only 2 out of 100 respondents had managed to attain some third level education.

Sources of Labour: Out of 100 respondents, 53% said that they depended totally on family labour while 44% said that they depended both on family labour and hired labour and only 3% of the respondents indicated that they entirely depended on hired labour. Therefore the family is by and large an important source of farm labour for smallholder farmers in the area. About 58% of the farm households had at least three members of the household offering family labour.

Farm Characteristics

The farm characteristics that were examined included size of the farms, the type and number of enterprises farmers were engaged in, the level of mechanisation/equipment that the farmer used, and the means of farm input acquisition by the farmers.

Farm Size: For the purpose of this study, the farm size variable was categorised into three major groups of up to 2 hectares, 2 to 6 hectares, and more than 6 hectares. The average amount of farmland owned was 6.7ha. Sixty-two per cent of the respondents owned up to 6 hectares of farmland. Although the majority owned up to 6 hectares of farmland only 4 respondents managed to cultivate up to this area of land. Sixty-nine per cent of those who owned up to 6 hectares of farmland cultivated less than 3 hectares of their farmland. The average area cultivated in the previous season was 2.6 ha, and the modal number of hectares cultivated was 2ha. It is clear that smallholder farmers cultivated very little of their total farmland looking at the gap between the amount of land owned and that cultivated.

Type of Enterprise: The two types of farm enterprises found in the area were crop farming and livestock farming. Under crop farming crops such as maize, cotton, sorghum, Soya beans, paprika, ground nuts, beans, millet, and vegetables were grown. The kind of livestock reared included cattle, goats, chickens, pigs, sheep, and others. Table 1 shows the distribution of respondents by the livestock owned.

Table 1: Distribution of Respondents by Livestock Owned (N=100)

	Type of Livestock Owned					
	Cattle	Goats	Chickens	Pigs	Sheep	Others
No. of Respondents	33	40	80	5	2	8
Average number of livestock owned	2.2	4.7	12	0.2	0.1	0.8
Mode number of livestock owned	1	4	10	2	3	2
Maximum number of livestock owned	19	35	60	8	6	26
Minimum number of livestock owned.	1	1	1	2	3	1

Mumbwa district is one of the areas in Zambia where cattle rearing is a tradition among the inhabitants. The tribes living here include the Tonga, the Ila and the Kaonde. The Tonga and the Ila to some extent are traditionally cattle keepers and the number of cattle an individual has reflects the wealth of this individual among the local people. However the survey outcome shows that only 33 out of 100 respondents owned cattle and that out of these about 52%(17) did not own more than 5 cattle. Most respondents asked explained that most herds of cattle have reduced to an all time low number because of the outbreak of corridor disease locally known as *Denkete* which has been decimating cattle in the area in the past few years. They complained that the Department of Animal Production and Health (APH) had failed to fully contain the problem. They said that this

situation had not only affected their livestock related income, but had also adverse spill over effects on other farm enterprises such as crop farming which depended largely on animal draft power for land preparation among other jobs.

Rearing of small ruminants such as goats in particular was found to be on a higher scale than rearing cattle. Table 1 shows that 40 farmers out of 100 who were interviewed said that they were rearing goats. The average number of goats per farmer was 4.7 compared to 2.2 for that of cattle, while the maximum number of goats reared was 35 though most farmers owned only up to 10 of them.

Chicken rearing was however found to be on a relatively higher scale than the rest of the livestock as can be seen from Table 1 above. Eighty per cent of the respondents said that they were involved in chicken rearing, and the average number of birds kept was 12. Chicken rearing on the free-range system was found to be a widespread activity among the smallholder farmers interviewed.

Other livestock kept by smallholder farmers in the study area included pigs, sheep, ducks and pigeons.

As indicated earlier, there were a number of types of crops grown in the area. Table 2 outlines the distribution of respondents by the type of crop grown and the amount of land apportioned to such crops.

Table 2: Distribution of Respondents by Crops Grown and the amount of Land apportioned to these Crops (N=100)

	Type of Crop Grown					
	Maize	Cotton	Paprika	Soya Beans	Sorghum	Millet
No. of Respondents	97	49	20	13	9	2
Average Area(ha)	1.5	0.6	-	-	-	-
Min Area(ha)	0.1	0.2	0.2	0.1	0.1	0.2
Max Area(ha)	7.2	3.7	1.6	2.0	0.4	0.5
Average yield	16(x50kg)	2.6 tonnes	320kg	303kg	1(x50kg)	2(x50kg)
Min yield	1(x50kg)	0.12 tonnes	9kg	20kg	1(x50kg)	1(x50kg)
Max yield	150(x50kg)	85 tonnes	5600kg	1500kg	4(x50kg)	3(x50kg)
No. of Respondents with no harvest despite cultivating the crop	17	10	5	4	4	-

Table 2 shows that maize is the principal crop among the people in the study area as the majority (97) of the respondents cultivated this crop. This can be explained by the fact that it is the staple food of the people in the area. Maize was also found to have the largest average amount of farmland apportioned to it compared with other crops. Cotton and Paprika were found to be the next most commonly grown crops with 49 and 20 respondents respectively engaged in the growing of these crops at least in the previous season. Cotton and paprika are cash crops for the farm families. However, although maize was found to be the major crop in the area, the scale of production was extremely poor as can be seen from the average yield vis-à-vis the average area cultivated. Farmers attributed the poor maize productivity to a number of reasons, the main ones being drought situations that affected the area for two previous consecutive seasons. As can be

noted from Table 2, some 17 farmers who cultivated maize did not harvest anything at all, this showed the severity of the direct effect of the droughts on the crop. Similarly, out of 49 respondents who cultivated cotton during the same season 10 of them did not harvest anything because the crop was affected by the drought. The same happened to some who cultivated several other crops. The farmers further explained that this problem was compounded by most farmers' inability to access farm inputs (fertilisers and certified seed) largely because they either did not have enough resources left for that purpose or if they had then the inputs were not available on the market. In instances where inputs were available then it was mostly too late for effective use.

Other crops that were grown in the area included groundnuts, cassava, beans, popcorn, and exotic vegetables such as cabbage, rape etc. Groundnuts were especially found to be relatively commonly grown in the area with 43 respondents indicating that they actually grew this crop. However most of these crops were grown on a very small scale and these were to a large extent for subsistence purposes.

Farm Implements/Mechanisation: The farm implements that were found to be common in the study area included hand hoes and oxen. Only a couple of farmers said that they used the tractor for part of their farm work. Axes were also used although to a very small extent. Table 3 below shows the distribution of respondents by the type and status of implement used on the farm.

Table 3: Distribution of Respondents by the Type of Implement used and their Status (N=100)

	Type of farm Implement			
	Hand Hoe	Oxen	Axe	Tractor
No. of Respondents using	96	73	4	4
No. Owning	91	22	3	1
No. Hiring	-	46	1	3
No. Owning/Hiring	5	5	-	-
Total	96	93	4	4

It is clear from Table 3 that hand hoes were the most widely used farm implements in Mumbwa district with 96 farmer respondents out of 100 acknowledging that they mostly used hand hoes for their farm operations. Seventy-three of the respondents said that they used oxen while axes and tractors were each used by only 4% of the respondents. It is also clear that the majority of those who used hand hoes also owned them and only a few supplemented what they owned by hiring. For the 73 farmers who used oxen for their farming 46 of them just hired them while only 22 owned them. This shows that most smallholder farmers in the study area rely on the use of hand hoes and on the goodwill of the few who were privileged to own oxen for their farm power. This scenario would not have been the case a number of years back when most farmers in the area had big herds of cattle, but because of heavy cattle losses to livestock diseases as alluded to earlier, farmers have found themselves in a predicament where they are left with no choice but to hire oxen from the small number of farmers with surviving oxen. Farmers observed that this situation had put further pressure on the few animals that remained. As for the 4

respondents who used tractors, 3 of them just hired, but it was interesting to find that one 'smallholder' farmer owned a tractor.

Input Acquisition: It is important to first note that although government put in place the policy of withdrawal from agricultural input supply and marketing (MAFF, 2000a, p. 9) in line with the Structural Adjustment Programme (SAP) as referred to in Chapter Two of this study, it had (and still is) intermittently been compelled to back-pedal on this policy by market failure. So, government has occasionally intervened in the supply of input credit to smallholder farmers. This situation has also contributed to making it very difficult for farmers to come up with permanent coping strategies in the absence of government sponsored input credit for which the repayment rate is far below average.

When asked to say how they acquired inputs 46% of the respondents said that apart from getting government input credit they bought supplementary inputs on their own, 33% of them said that they just bought all that they needed without getting input credit, and only 8 % said that they only used what they obtained through the government sponsored credit. But a further 8% said that they had no option but to use inputs left over from the previous season while 4% of the respondents depended on charity for their inputs. It can be noted from these statistics that the inputs offered to farmers on credit were not adequate for them and hence most of them preferred to acquire additional inputs in order to reach their respective requirement amounts. This coupled with quite a large number of farmers who struggled to use their own means to acquire inputs is enough explanation for the lack of adequate capacity in the input distributing agencies in terms of not only making available enough quantities of inputs but also doing it in the timely manner. Over 10 years ago this would not have been the case as government was directly involved in this exercise. But currently farmers find the situation to be very uncertain.

The 8% of the farmers who used carry over inputs from the previous season were an apparent result of late distribution of inputs characteristic of the system. But such inputs can not be expected to put up good performance considering that their potency run low if

they are not used within the prescribed season. This partly explains why average productivity per unit area was found to be so poor.

Livelihood Characteristics

This section of Part Two looks at the issues related to livelihood of smallholder farmers in the area of study such as their sources of income, sources of food, dependency and others.

Major Sources of Income: the survey results indicated that most farm families in the area depended on the farm as the main source of income and only a few regarded farming as a minor source of income. For instance 51% of the farmers said that their major source of income was farming while 40% obtained their main income from both farm and non-farm sources. Only 9% said that they drew their main income from non-farm sources. Out of the 49 who got part of or all of their main income from non-farm sources, 27 of them did so by petty trading, 7 relied on help from relations working elsewhere, 7 others relied on both their relations' goodwill and on trading, while the remaining 8 used other sources which included charcoal burning, piece work, etc.

Of all the 100 respondents' families, 72% said that they had no member of the family with an off-farm income, 22% had only one member of the family drawing non-farm income, while 4% and 2% had 2 and 3 family members respectively engaged in earning non-farm income. The foregoing echoes what many authors have written regarding the occupation of most rural dwellers, especially in developing countries, as being dependent on agriculture.

A further examination of how they supplemented their incomes if they did, revealed that 45% of the respondents sought piecework on other people's farms in times of extreme livelihood pressure especially induced by the effects of natural calamities such as droughts. Therefore doing piece work on other people's farms was explained as a coping mechanism to mitigate the severity of food insecurity arising from both poor harvests in

previous seasons and other systemic related factors. But 55% of the respondents however, said that they didn't work on other people's farms

Dependency on Farm for Food: All the farmer respondents' households surveyed had at least a member of the household depending entirely on the farm for food requirements. The average number of dependants on the farm for food per household was 8 people with 80% of the households having at least five members depending on the farm for food. These figures clearly showed that poor farm output in any particular season would translate into serious food insecurity and subsequent nutritional deficiencies for many members of the individual farm families. Although this kind of food insecurity would be classified as transitory in nature, it is potentially chronic as recovery from a particular season's production disturbance occasioned by such things as unfavourable weather, takes to long. And the possibility of a further weather related shock on production patterns may not be far fetched. Circumstances such as these present very difficult challenges for the extension worker in terms of mobilising farmers for effective participation in the extension service activities.

When the dependency ratio for the farmer respondents was worked out, it was discovered to be 1:4.6, which is very high. This scenario could be explained by a high rate of birth and the polygamous kind of marriages prevalent as a tradition among the locals in the area. It is also likely that the situation has been exacerbated by a large number of orphaned children especially with the advent of the AIDS pandemic. The custody of such children is often taken on by the relatives of the deceased. This situation exerts further pressure on the families in terms of food requirements, educational requirements of the children and other material and emotional requirements as well. The survey found that in some isolated cases there were as large as 16 member families and above (see household size above).

Number of Members of the Household in School: This variable was meant to assess the households' educational requirements. Out of 100 respondents, 89% said that they

had at least one child attending school while only 10% did not have. Table 4 shows the distribution of respondents by the number of school going members of the household.

Table 4: Distribution of Respondents by Number of Household Members Attending School (N=100)

No. of School Attending Children	No. of Respondents	Per cent (%)
0	11	11
1-3	54	54
4-6	28	28
>6	7	7
Total	100	100

Eleven percent of the respondents' households had no child attending school despite a high possibility of some of the eleven households having children of school going age. Fifty-four per cent of the respondents managed to send only up to 3 children to school while 35% of them managed to send more than 3 children to school. The average number of children of school going age per family was determined to be 4.7, yet the average number of those attending school was found to be 3.1. This therefore implied that an average of 1.6 children of the school going age per family were out of school. This is most likely due to failure by guardians to cater for these children's school requirements.

Conclusion to Part Two

The descriptive analysis has raised a number of issues. Firstly the male respondents comprised about two thirds of the sample while just slightly below a third were female respondents. Most of the respondents were above 35 years of age. Most of the respondents were married, and the household sizes were found to be quite large. It was also established that virtually all respondents belonged to the Christian faith with the

majority of them being protestants. Though most respondents were literate, a good number was not. Dependency on family labour was found to be high but quite a large number of the farm families supplemented family labour by hiring extra labour.

Most smallholder farmers owned only up to 6 hectares of farmland. However, most of these cultivated no more than half the amount of land they owned. The two major types of farm enterprises were crop farming and livestock farming. Maize was the principal crop while chickens were the most widely reared livestock. In terms of farm equipment it was found that hand hoes were the most commonly used farm tools, this was in agreement with what has been pointed out by most authors as being typical of the level of farm mechanisation among smallholder farmers.

Smallholder farmers have in the past depended on government for the supply of farm inputs on credit. However the study found that most of the respondents used their own means to get all their input requirements or their supplementary inputs. With regard to livelihood, although the majority of the farmer respondents said that their major source of income was farming, quite a good number of them supplemented their farm incomes with non-farm income, while some received transfers from relations and other charitable sources. It was also found that almost all households depended to a large extent on the farm for food. Finally it was established that there is a high dependency ratio among the respondents and that some children of school going age were out of school.

Part Three: Access to Extension Service by Smallholder Farmers

This part of the study examines the interaction between the smallholder farmers and the extension workers in the study area. It begins by looking at the perception of farmers in terms of how extension has changed in the recent past, the contact between farmers and extension workers and then it goes further to analyse the various ways by which smallholder farmers have recourse to extension services, which would ultimately help to determine the level of access to extension service by smallholder farmers.

Change in Extension Work – Farmers' Perception

The evaluation of how the extension service had changed in recent years from the farmers' view point was meant to determine whether the beneficiaries had noticed any change in how agricultural extension service delivery was being carried out compared to the recent past, and if there was, what kind of change it was.

Of the 100 smallholder farmers interviewed, 67% indicated that they had noticed some change in how the extension was being carried out, 32% said they had not noticed any change while only 1% was unable to tell whether there had been a change or not. All the respondents who said that extension service delivery had changed in the recent past indicated that the change was a relative improvement.

Contact with Extension Workers

While extension contact is achieved through a number of ways including farm visits, demonstrations, field days, extension meetings, farmer courses/training and other extension activities, the number of extension contacts was first looked at from a general

point of view by finding out the number of times that smallholder farmers had come into contact with extension workers in a year as shown by Table 5 below.

Table 5: Distribution of Respondents by Number of Contacts with Extension Workers in the Previous 12 months (N=100)

Level of contact	Number of Respondents	Per cent
0	27	27
1 – 3 times	29	29
4 – 6 times	23	23
>6 times	21	21
Total	100	100

More than one quarter (27%) of the farmers interviewed indicated that they had no contact with the extension worker. Twenty nine per cent of the respondents had 1 to 3 contacts with the extension worker, 23% had 4 to 6 contacts while 21% of them had at least seven contacts with the extension worker. From these statistics it is clear that as the level of contact increased from 1-3 to more than 6 the number of respondents decreased from 29% to 21%. Therefore the higher the frequency of contacts the fewer the number of farmers with such contacts. But it is important to establish the kind of contact that these farmers had with extension workers by looking at the various interaction options that were used in these contacts as alluded to earlier in this part of the study.

Requests for Extension Advice

Farmer requests for extension is one of the ways that can be used to determine whether farmers attempted to make use of the extension services on their own or not. For the study area it was found that 55% of the respondents did not request any extension advice within the previous 12 months while 45% of the respondents had attempted to request extension advice although 60% (27) of these did so for only 1 or 2 times, 31% had made 3 to 4 requests, and only 9% of them had made more than 4 requests during the period in

question. More farmers in the study area therefore did not take the initiative to seek extension advice while the majority of those who did, did so for only a few times. Most farmers said that they just waited for extension workers to either visit them or organise group meetings during which they could ask for advice about the problems they were facing in farming.

Farmers sought various pieces of agricultural extension advice. Table 6 outlines the number of respondents by the kind of advice they mainly requested.

Table 6: Distribution of Respondents by the Type of Extension Advice Requested (N=45)

Type of Related Advice Requested	Respondents (%)
Crop husbandry	25 (55.6%)
Conservation farming/ Land husbandry	19 (42.2%)
Pest Management	7 (15.6%)
Livestock management	4 (8.9%)
Input Acquisition	2 (4.4%)
Post-harvest handling	1 (2.2%)

Crop management and conservation farming/land husbandry were issues on which most farmers sought extension advice. However pest management, livestock management, input acquisition and post-harvest handling were other areas of concern for farmers.

Farm Visits

The average number of farm visits was found to be 4.5 per farmer in the previous year and 3 was the modal number of visits for the respondents. Sixty per cent of the smallholder farmers interviewed agreed that they had been visited by the extension worker on at least one occasion in the previous 12 months while 40% said that they had

never been visited during this period. Table 7 shows the distribution of respondents by the number of farm visits in the previous 12 months.

Table 7: Distribution of Respondents by the Number of Farm Visits in 12 Months (N=60)

Number of visits	Number of Respondents	Per cent
1-2 visits	19	31.7
3-4 visits	19	31.7
5-6 visits	8	13.3
7-8 visits	3	5.0
>8 visits	11	18.3
Total	60	100.0

Although a good number of the respondents had been visited by the extension worker the number of such visits per farmer was very minimal for most of them. This is not surprising as empirical studies have shown that while farm visits may be effective for individual farmers considering that attention is concentrated, they may not be an efficient method in terms of coverage, especially if they are not complemented with other group extension methods. This is especially true in most resource constrained public extension systems of developing countries.

Demonstrations

With regard to demonstrations only 49% of the respondents acknowledged that they attended on at least one occasion while the rest did not. A substantial number (51%) of farmers who were interviewed did not attend any demonstration. The average number of demonstrations that were conducted in the area of study was 2.2 and the locales with the maximum number of demonstrations had 6 of them. Table 8 gives the details about those who attended at least one demonstration.

Table 8: Distribution of Respondents by Frequency of Attendance at Demonstration Activities in the last 12 Months (N=49)

Frequency of Attendance	Number of Respondents	Per cent
1-2 times	23	46.9
3-4 times	16	32.7
>4 times	10	20.4
Total	49	100.0

Table 8 shows that most respondents attended very few demonstrations. When the relationship between attendance at demonstrations and the number of demonstrations held in respective areas was analysed, it was found that 72.5% of those who did not attend any demonstration (n = 51) had no demonstration held in their respective areas, whereas 27.5% had at least one demonstration held in their respective areas. This showed that quite a good number of respondents could not attend any demonstration because none was conducted in their areas, but others did not attend any despite having at least one demonstration conducted in their areas. It was also found that some of those who attended fewer demonstrations had more of them held in their areas than they attended. This indicated that apart from farmer apathy, there was also low demonstration activities in the area of study which robbed some farmers of the opportunity to attend. But it was interesting to note that there were some five farmers who attended more demonstrations than those held in their locales, which suggested that some farmers made an effort to attend demonstrations even though they may have been conducted far from their areas.

When asked why they decided to attend demonstrations, most (86%) farmers cited the desire to learn more and better their farming as the reason while 12% said they attended just because they were invited and a further 2% attended because friends did. Therefore quite a big number of farmers attended demonstrations for the right reason. For those

who did not attend 45.1% (23) gave the reason of not being informed as being responsible for their non-attendance, 15.8% (8) said that no demonstration was ever held in their area while 9.8% (5) of them said that they found demonstrations not to be useful and so could not attend any in the previous year, and the remaining 29.4% (15) cited other miscellaneous reasons.

Field days

The survey results indicated that about 77% of the smallholder farmers who were interviewed had at least a field day held in their respective locales and only 23% said they did not have any field day conducted in their area. About 45% of those who had a field day held in their area got the information through the extension worker, 30% through fellow farmers, 17% through posters, and 3% and 4% through village leadership and other means respectively.

In terms of attendance at field days, only 53% of the respondents attended at least one field day and 47% did not attend any field day. However, out of both those who had at least one field day held in their area and had some contact with the extension worker (65) in the previous 12 months, 81.5% had attended at least one field day while 18.5% had not. Although the percentage of those who attended appears to be relatively high, most of them attended no more than 3 times, and 44.6% attended only once. (See Table 9 below).

Table 9: Distribution of Respondents by the Frequency of Attendance at Field days (N=65)

Attendance Frequency	Number of Respondents	Per cent
0	12	18.5
1 time	29	44.6
2 times	15	23.1
3-4 times	8	12.3
>4 times	1	1.5
Total	65	100.0

Even though the frequency of attendance at field days was found to be low, most farmers 43% out of those who interacted with extension workers said that there were no other field days in the area apart from those they had attended, 26% said that they were not just invited and so could not attend other field days or not attend any at all, and 5.3% said they were just not interested in attending. About 29% attributed their non-attendance/low frequency of attendance to other reasons which included social and economic engagements such as care-giving/ill health, attending funerals, church commitments, formal jobs etc.

Extension Meetings

For extension meetings 70% of the farmers interviewed agreed having attended at least one agricultural extension meeting while 30% said that they had not. The average number of extension meetings held in the area of study in the previous year was 3.7 and the locale with the highest number of these meetings had 15 of them held. Out of those who attended, 63.8% of them attended on not more than three occasions while only 33.2% attended meetings on more than three occasions. The average frequency of attendance at extension meetings was 3.5 in 12 months (taking into account the extreme values), which was close to the average for the number of extension meetings. Table 10 shows the distribution of respondents by the frequency of attendance at meetings for the previous year.

Table 10: Distribution of Respondents by Frequency of Attendance at Extension Meetings in 12 Months (N=100)

Attendance Frequency	Number of Respondents	Per cent
0 times	31	31
1 time	16	16
2 times	10	10
3 times	18	18
4-6 times	15	15
>6 times	10	10
Total	100	100

Out of the interviewed farmers most of them did not attend more than two agricultural extension meetings. The frequency of attendance at extension meetings was found to be generally low for most farmers. Whether this low frequency of attendance at extension meetings could be attributed to farmer apathy or low number of extension meetings in the area was looked at by analysing the relationship between the number of extension meetings held in the area and the frequency of attendance at these meetings. It was found that 35% (7) of those who never attended any meetings had at least one meeting held in their area, 46.6% (6) of those who attended only once had more than one extension meeting held in their area, 50% (5) of those who had attended on two occasions had more than two meetings held in their area while 29.4% (5) of those who attended 3 times had also more than 3 extension meetings held in their respective locales. This shows that while the number of extension meetings conducted in most areas was quite low, the low frequency of attendance exhibited by a good number of farmers can be explained by reasons other than the low number of extension meetings in their areas.

Farmer Courses

Farmer courses were another method of extension interaction between the farmers and extension workers. However, the study found that over half (53%) of the 100 farmers interviewed had no single course/training for farmers held in their respective areas and that 23% of them had only one farmer course held in their area, while only 12% of the respondents had more than one farmer course held in their respective areas. And the remaining 12% had not heard of any farmer course being held in their locale nor in the vicinities. From these statistics, it can be noticed that farmer courses were rarely used as an extension method in the in the area during the period that was reviewed.

Other Extension Activities

Other extension activities that farmers who were interviewed identified included agricultural shows, study circles, dramas, role-plays etc. But it was indicated that these

methods are not commonly used. According to the farmers interviewed, ward and district agricultural shows are no longer held annually as opposed to what used to happen in the past, yet these are regarded as important functions for not only disseminating agricultural information but also for exposing farmers to new technology. The Camp Extension workers who were interviewed also echoed similar views about agricultural shows. The reasons cited for this were various and included natural calamities such as droughts and floods which adversely affected agricultural production on which the shows depended. But both farmers and extension workers attributed the failure to hold shows annually in recent years mainly to the change in agricultural policy from government controlled to liberalisation and the consequent collapse of the co-operative movement in the area in particular and the country in general. Poor co-operation among farmers was given as another reason.

Level of Access to Extension Service by Smallholder Farmers

Although determining the level of access to extension service can be difficult to achieve considering the many ways that farmers can use to access extension services, it can reasonably be achieved through the use of a multiple variable indicator, created by combining the various variables that represent ways through which farmers have recourse to extension services. For this study the various methods that were used include farm visits, demonstrations, field days, extension meetings and farmer courses, all of which have been analysed already. These methods therefore were used to create an index variable that was used to determine the level of smallholder farmers' access to extension service and consequently their level of participation in the extension service in the area of study. This index was called the 'Participation Index'.

But before the creation of the participation index, there was need to know the degree of usefulness of the methods that were used for interaction, and when farmers were asked about how useful each method was, the results in order of importance from the most important to the least were that farmers perceived field days to be the most important method of reaching out to them followed by demonstrations, then farmer courses, farm

visits and finally extension meetings. However from a combination of farmers’ perception and the researcher’s experience, taking into account the various issues such as effectiveness, efficiency etc, the assignment of weightings was done for each variable on the scale of 0 to 10 depending on their relative importance so that the resulting order of importance for selected variables was now; demonstrations, farm visits and field days, extension meetings, extension contacts and requests for extension services, finally access to information about both farmer courses and initiating of extension meeting by farmers.

The total score for the participation index that was created was 30 units. But it was found out that the maximum participation that was achieved among the farmers who were interviewed was 24.5 units while the minimum was 0. The number of farmers who had not participated at all was found to be the number with the highest frequency. The average participation level was found to be less than half (10.4 units) of the total obtainable amount of participation (30 units). Table 11 below shows the distribution of respondents by the level of participation.

Table 11: Distribution of Respondents by the Participation Index (N=100)

Participation Index Category	Number of Respondents	Percent
0	16	16
>0-7.5 units	17	17
>7.5-15 units	37	37
>15-22 units	25	25
>22 units	5	5
Total	100	100

From the Table 11 it can be observed that 16% of the farmers never participated in extension activities during the year and a further 54% of them did not exceed half (15 units) of the total (30 units) level of participation. The number of farmers decreased from 17 for those with up to 7.5 units of the participation index down to 5 for those who managed just over 22 units. Hence, there was an inverse relationship between

participation and the number of farmers. But overall, the above figures indicate that most farmers participated less than half the full participation potential as the majority of the respondents were found to have a low level of participation while a good number of them did not participate at all.

Conclusion to Part Three

From the foregoing in this part of the study, a number of inferences relating to smallholder farmers' access to and the consequent participation in the extension service can be drawn.

Despite the general farmer perception of extension service having relatively improved compared to the recent past, it was found that all of the extension interaction methods evaluated had quite a large number of farmers not participating in them at all. And out of those who participated, it was found that the majority did so to a low extent. The participation index also suggested that the average farmers' involvement in extension activities in the study area was below half its potential and therefore confirming the conclusion that there is low access to extension service by smallholder farmers in the area of study. From the analysis it was found that this low access was in part due to social and economic factors (discussed later in this chapter), and the low extension activity in the area.

Part Four: Factors Influencing Participation of Smallholder Farmers

This part of Chapter Three looks at the various factors that influence participation of smallholder farmers in the extension service. As has been noticed earlier in the analysis, farmers' participation was found to be quite low, though the agricultural extension activities were generally infrequent (discussed in the next part of chapter three), quite a large number of farmers did not participate. The reasons for this low level of participation shall be explored here based on the relationships between various farmer characteristics and the interaction with the extension workers.

Factors Derived from the Structured Interview with Farmers

These were the factors that were identified by examining the effects of various characteristics on the participation of farmers in extension activities.

Location of the Farmer: This aspect tried to determine whether the location of the area where the farmer was based had any relationship with the farmer's participation in the extension activities. Given that two agricultural blocks namely Mumbwa Central Block and Nambala Block were areas where respondents came from, participation of the farmers in these blocks was compared and it was discovered that 30% of the respondents in Nambala block as opposed to only 2 % of those in Mumbwa Central block did not participate at all. In contrast 34% of those in Mumbwa block compared to 26% of those in Nambala block participated to at least 15 on the index of participation. There was therefore an association between the level of participation and the area in which the farmer was located. The significance value of 0.003 confirmed that this association was in fact statistically significant. When further statistical tests were carried out to compare the means of participation for the two blocks, it was found that on average farmers in Mumbwa Central block participated 4.4 units of the participation index more than those in Nambala block. This outcome is not strange in the sense that Mumbwa Central block is close to the district field station while Nambala block is more in the periphery.

Therefore there would be more extension activities going on in Mumbwa Central than in blocks that are far from the District station because of proximity to the supervising office and accessibility among other things. This is typical of the spatial biases in agricultural extension referred to in MAWD (1983, p. 74) and also echoed by Chambers (1986, p. 13).

Personal Related Factors: Personal characteristics namely gender, age, marital status, literacy, level of education, household size, whether farmer works on other people’s farms for extra income, and religion/denomination were analysed in relation to interaction between extension worker and farmers and the participation index.

Gender: When gender was examined in relation to the participation index it was found that 25% of the female respondents as opposed to 12% of the male respondents did not participate at all, whereas 34% of the male respondents as opposed to 22% of the female respondents had more than 15 units on the Participation Index. Table 12 shows this relationship.

Table 12: Relationship between Gender and the Level of Participation (N=68)

Participation Index Level	Gender	
	No. of Male Respondents (%)	No. of female Respondents (%)
0	8 (11.8%)	8 (25%)
=<7.5	10 (14.7%)	7 (21.9%)
>7.5-15	27 (39.7%)	10 (31.3%)
>15-22	20 (29.4%)	5 (15.6%)
>22	3 (4.4%)	2 (6.3%)
Total	68 (100%)	32 (100%)
<i>Chisquare = 5.26</i>	<i>Df = 4</i>	<i>Significance = 0.261</i>

Though the participation level for female respondents was unexpectedly quite high, in percentage terms more male respondents participated than female respondents. Although it was not significant (significance value = 0.048), the t-test carried out showed that on average male respondents participated 3.4 units more than female respondents. Women therefore participated less than their men counterparts yet women do most farm work but were however restricted to participate as much as men do.

With respect to the relationship between gender and the number of contacts of farmer with extension worker, a similar trend was exhibited. There were 47% of the female respondents compared with only 18% of the male respondents who had no contact with extension worker. In addition 22% of the male respondents as opposed to 19% of the female respondents had at least 7 contacts with extension worker. Male farmers therefore tended to have more contacts with extension workers than female farmers. This further confirmed the findings of the relationship earlier explored between gender and the level of participation. This therefore calls for the need to institute changes in the way facilitation is done so as to strike the right balance of gender in relation to participation of farmers in extension activities.

Age of the Farmer: The age of the respondents was analysed in relation to the level of participation in extension activities and it was found that 33% of those aged 35 years and below compared to 8% of those aged from 36 years to 50 years and 12% of those who were above 50 years of age had not participated in any extension activity. But 38% of those aged above 50 years compared to 28% of those aged from 36 years to 50 years and 22% of those who were 35 years old and below participated to the level of above 15 units of the participation index. Table 13 shows this relationship.

Table 13: Relationship Between Age and level of Participation (N=100)

Participation Index Level	Age Category (Years)		
	=<35 years	36-50 years	>50 years
0	9 (33.3%)	3 (7.7%)	4 (11.8%)
=<7.5	6 (22.2%)	5 (12.8%)	6 (17.6%)
>7.5-15	6 (22.2%)	20 (51.3%)	11 (32.4%)
>15	6 (22.2%)	11 (28.2%)	13 (38.2%)
Total	27 (100%)	39 (100%)	34 (100%)
<i>Chisquare = 13.273</i>			<i>Df = 6</i>
			<i>Significance = 0.039</i>

The data from Table 13 indicate that older farmers participate more than younger ones. This relationship was statistically significant.

When age of the respondent was further examined in relation to the number of contacts between respondents and extension workers, it was found that 48% of those who were 35 years old and below compared to 15% and 24% of those who were aged from 36 years to 50 years and those above 50 years respectively, did not have any contact with extension worker. But it was found that 29% of those who are above 50 years of age compared with 18% of those aged from 36 years to 50 years and only 15% of those who are 35 years and below had managed to make at least 7 contacts with extension worker in the previous 12 months. Although this relationship was not significant (significance value = 0.059), the data showed that that younger farmers were more likely to have a lower number of contacts than older farmers.

Marital Status: Although the relationship between marital status and level of participation was not statistically significant (significance value = 0.138), 33.3% of those who were unmarried compared to only 12% of those who were married had recorded no participation. Additionally, 32.9% of those who were married compared to only 17% of those who were unmarried had participated to at least 15 units on the participation index. Based on these statistics, married respondents tended to have relatively higher participation than unmarried respondents. Similarly when marital status of the farmer was

analysed with respect to the number of contacts between the farmers and extension workers it was established that more unmarried respondents had no contact with extension workers as opposed to married respondents. And more married than unmarried respondents had at least 7 extension contacts, although this relationship was not significant (significance = 0.060). Further statistical tests showed that those who were married had participated 2.97 units more than those who were not married. This trend was not surprising as the majority (61.1%) of those respondents who were not married for one reason or another were female respondents, whose participation in extension activities tended to be low as has been found earlier in this chapter.

Literacy: Twenty-five per cent of those who were illiterate (n=12) compared to 15% of those who were literate (n=88) did not participate in any extension activity. In contrast, 69% of those who were literate compared to 50% of those who were illiterate had over 7.5 units of the participation index. This relationship was however not statistically significant. Similarly when literacy was examined in relation to the number of contacts between the farmers and the extension workers, the relationship was not significant (significance value = 0.246), however it was found that 50% of those who were illiterate compared to 24% of those who were literate did not have any extension contact, whereas 22% of those who were literate compared to 17% of those who were illiterate managed to have at least 7 extension contacts. Like the association between literacy and participation, the association between literacy and number of contacts was such that those who were literate were likely to have more extension contacts than those who were not.

When level of education was examined in relation to the extension contacts in the previous 12 months, no significant relationship was found.

Household Size: There was a significant relationship between the size of the household and the level of participation in extension activities (significance value = 0.012). Table 14 shows the relationship between the size of the household and the level of participation by respondents in those households.

Table 14: Relationship Between Household Size and Level of Participation (N=100)

Participation Index Levels	Household Size (No. of members)		
	1-5	6-10	>10
0	7 (36.8%)	8 (14%)	1 (4.2%)
=<7.5	6 (31.6%)	8 (14%)	3 (12.5%)
>7.5-15	5 (26.3%)	22 (38.6%)	10 (41.7%)
>15	1 (5.3%)	19 (33.3%)	10 (41.7%)
Total	19 (100%)	57 (100%)	24 (100%)
<i>Chisquare = 16.295</i>			<i>Df = 6</i>
			<i>Significance = 0.012</i>

It is clear from Table 14 that there is a relationship between the respondent’s household size and the extent to which he/she participates in the extension activities. Respondents with large household sizes tended to participate more than those with small household size.

When the size of the household was analysed in terms of respondents’ number of contacts with extension worker, a significant (significance value = 0.039) relationship was also observed. It was found that 53% of respondents with small household size (1-5 members) compared with 26% of those with 6 to 10 members and only 8% of those with more than 10 members had recorded no contact with extension workers in the previous year. In addition, for the high of contact category, it was observed that 25% of those respondents with households of more than 10 members compared with 25% of those with 6-10 members and only 5% of those with less than 6 members managed to have more than 6 contacts with extension workers. Therefore the bigger the respondent’s household the more likely that the farmer would attend extension activities. This is in line with the notion that bigger households would usually have more family labour than smaller households and as a result the farmer would have more time to spare for extension activities knowing that other members of the household would be working on the farm. But this would not be the case with farmers who depend on low level of family labour.

If Farmer works on other People's Farms: When this aspect was examined in relation to the number of extension contacts between the farmers and the extension workers it was found to be not significant (significance value = 0.337). But the data showed that 37% of those who worked on other peoples' farms for extra income compared to 20% of those who did not, had no extension contact. Some 24% of those who did not work on other people's farms for extra income compared to 18% of those who worked, managed to have at least 7 contacts with the extension worker. Logically this is not strange because those who were not engaged in doing piece work would find more time to attend extension activities as opposed to those who did piece work in other people's farms.

Religion/Denomination: With regard to religion it was found that 33% of the Seventh Day Adventist Church (SDA) members (n = 15) as opposed to 29% of the members of other Churches (n = 63), 17% of the Pentecostal church members (n = 12) and only 14% of the Catholics (n = 7) had no contact with extension workers in the previous 12 months. On the other hand, 43% of the Catholics compared with 42% of the Pentecostal church member, 16% of others, and only 13% of SDA members managed to have more than 6 contacts with the extension worker. The significance value of 0.492 indicated that this relationship was not significant. However the data showed that members of the SDA church tended to have less extension contacts compared with members of the Catholic Church and other denominations. And Catholics tended to have more contacts with the extension worker followed by members of the Pentecostal churches.

Farm Related Factors: The farm characteristics that were examined in relation to the interaction between farmers and extension workers included farm size, type of farm enterprise, area of land cultivated and kind of farm equipment that the farmer used.

Farm Size: When the participation for farmers with different farm size categories was compared, no real differences in levels of participation were observed. The results were as show in Table 15 below.

Table 15: Relationship between Farm size and Participation

	No. of cases	Mean Participation		t-value	Significance
Farm size: =<2.8ha	29	8.3 (t ₁)	t ₁ - t ₂	0.55	0.585 NS
>2.8 - 6ha	33	9.4 (t ₂)			
Farm size: >2.8 - 6ha	33	9.4 (t ₁)	t ₁ - t ₂	2.08	0.041 NS
>6ha	38	12.9 (t ₂)			

NS = Not Significant

It is clear from Table 15 that respondents with farm size of 2.8ha to 6ha had participated 1.1 units of the participation index more than those with farm size of 2.8ha and less. Similarly respondents with farm size of more than 6ha participated more than those with farm size of 2.8ha to 6ha by 3.6 of the participation index. This indicates that bigger farmers tended to participate more than smaller farmers.

A further examination of categories of farm size in relation to the level of participation showed that 31% of those with farm size of 2.8 ha and less compared with 12% of those with farm size range of more than 2.8ha to 6ha, and only 8% of those with more than 6ha did not participate at all. Some 42% of those with over 6ha compared with 23% of those with 2.8ha and less participated to more than 15units on the index of participation. However this relationship was not significant. Table 16 outlines this relationship.

Table 16: Relationship Between Farm Size and Level of Participation in the Previous Year (N=100)

Participation Index Level	Farm Size (ha)		
	=<2.8	>2.8-6	>6
0	9 (31%)	4 (12.1%)	3 (7.9%)
=<7.5	4 (13.8%)	9 (27.3%)	4 (10.5%)
>7.5-15	10 (34.5%)	12 (36.4%)	15 (39.5%)
>15	6 (20.7%)	8 (24.2%)	16 (42.1%)
Total	29 (100%)	33 (100%)	38 (100%)
<i>Chisquare = 12.303</i>			<i>Df = 6</i>
			<i>Significance = 0.056</i>

It is clear from data in Table 16 that relatively larger farmers tended to participate more than smaller farmers.

In terms of the number of contacts with the extension worker, a similar trend was found. (See Table 17 for details).

Table 17: Relationship Between Farm Size and the Number of Contacts with Extension Worker in the Previous Year (N=100)

No. of Contacts	Farm Size (ha)		
	=<2.8	>2.8-6	>6
0	13 (44.8%)	10 (30.3%)	4 (10.5%)
1-3	7 (24%)	13 (39.4%)	9 (23.7%)
4-6	5 (17.2%)	4 (12.1%)	14 (36.8%)
>6	4 (13.8%)	6 (18.2%)	11 (28.9%)
Total	29 (100%)	33 (100%)	38 (100%)
<i>Chisquare = 16.469</i>			<i>Df = 6</i>
			<i>Significance = 0.011</i>

Farmers with larger farms were likely to have more extension contacts than those with smaller farms. It can therefore be inferred from the foregoing that farm size is certainly a

factor that influences the extent of farmer interaction with the extension worker. Various authors have also indicated that larger farmers are likely to participate more than smaller farmers. Chambers, cited in Dixon (1990, p.8), observed that the poorest people who may be landless or have only small plots of land experience food shortages more acutely than their less poor neighbours and so migrate in search of work and food while others undertake non-agricultural activities in which the returns are low. Therefore smaller farmers are mostly pre-occupied with immediate survival issues.

Type/Number of Farm Enterprises: When this variable was examined vis-à-vis the interaction of the farmer with the extension worker, it was found that farmers engaged in both crop and livestock enterprises participated to a larger extent than those with only a crop enterprise. A similar trend was found when farm enterprise variable was examined in relation to the number of contacts. It can therefore be observed that farmers with more enterprises participated more than those who had fewer enterprises.

Area Farmed: There was no significant (significance value = 0.122) relationship between area farmed and the level of participation. But it was observed that 27% of the farmers who farmed less than 1.5ha of their farms compared to only 3% of those who cultivated more than 3ha did not participate in extension activities in the previous year. Some 43% of those who cultivated more than 3ha compared to only 18% of those who cultivated less than 1.5ha had participated to more than 15 units of the participation index. Farmers who cultivated larger portions of their farmland were therefore likely to participate more than those who did not. This inference was further confirmed when the area farmed was examined in relation to the number of extension contacts of the farmer in the previous year, although it was not statistically significant. Details are shown in Table 18.

Table 18: Relationship Between Area Farmed and Number of Extension Contacts in the previous Year (N=100)

No. of Contacts	Area Farmed (ha)		
	=< 1.5	> 1.5-3	> 3
0	13 (39.4%)	11 (29.7%)	3 (10%)
1-3	8 (24.2%)	10 (27%)	11 (36.7%)
4-6	9 (27.3%)	7 (18.9%)	7 (23.3%)
>6	3 (9.1%)	9 (24.3%)	9 (30%)
Total	33 (100%)	37 (100%)	30 (100%)
<i>Chisquare = 10.218</i>		<i>Df = 6</i>	<i>Significance = 0.116</i>

Farmers with relatively large cultivated portions of their farmlands tended to have more contacts with extension workers.

Farm Equipment/Mechanisation: There was no significant relationship between farm equipment used by respondents and the level of participation.

Input Acquisition: When the means of input acquisition was examined with regard to interaction between farmers and extension workers, it was discovered that a larger percentage of those who relied on charity than those who bought inputs using their own means along with those who supplemented what they got through government credit did not participate at all. None of those who relied on government input credit did not participate. But a larger percentage of those who relied on loans for inputs were found to have participated by more than 15 units of the participation index than both those who bought all they needed or supplemented what they obtained through public credit, and those who depended on charity exceeded 15 units of the participation index. A similar trend was established when the same variable was examined in relation to the number of contacts of farmer with extension worker.

Farmers who relied on charity were usually those who were the poorest of the poor, categorised as the vulnerable group. People in this situation have characteristics of avoiding mixing with others in group activities and spend most of their time searching for daily basic needs. On the other hand individuals who totally rely on government credit for their farm inputs would usually attend extension activities to broaden their prospects of acquiring inputs.

Livelihood Related Factors: The livelihood characteristics that were examined in relation to the extent of interaction between farmers and extension workers were major source of income, type of farm income, number of members of the household with off-farm income, and number of members of the household attending school.

Major Sources of Income: The relationship between major source of income of the farmer and the level of participation was analysed and the results found were that a larger percentage of those who did not depend on their farms for income than both those who depended solely on the farm for income and those who depended on both (farm and non farm incomes) did not participate in any extension activities in the previous year. In addition a larger percentage of those who depended solely on farm income than those who depended on both (farm and non-farm) incomes and those who solely depended on non-farm income participated to more than 15 units of the participation index. This relationship was found to be significant. Table 19 gives the relationship between major source of income and the level of participation.

Table 19: Relationship Between Major Source of Income and Participation in the Previous Year (N=100)

Level on the Index of Participation	Major Sources of Income		
	Farm	Non-farm	Both farm & Non Farm
0	6 (11.8%)	5 (55.6%)	5 (12.5%)
=<7.5	9 (17.6%)	1 (11.1%)	7 (17.5%)
>7.5-15	16 (31.4%)	2 (22.2%)	19 (47.5%)
>15	20 (39.2%)	1 (11.1%)	9 (22.5%)
Total	51 (100%)	9 (100%)	40 (100%)
<i>Chisquare = 15.305</i>		<i>Df = 6</i>	<i>Significance = 0.018</i>

A similar trend was found when the major source of income variable was examined with respect to the number of contacts made with extension worker in the previous 12 months. It was found that a larger percentage of those with only farm income were likely to interact more with extension workers followed by those who depended on both farm and non-farm incomes. But the few whose major source of income was solely non-farm in nature did not interact as much as the other two farmer categories with respect to their sources of income.

Households with School-going Children: When the number of children in the family was examined vis-à-vis the index of participation, it was found that there was a relationship between participation and number of school children in the household, although which was significant (significance value = 0.028). There were more respondents with no children attending school who did not participate than those who had 1 to 3 children and at least 4 children attending school respectively. Some 46% of those with at least 4 children attending school compared to only 9.1% of those who had no child at all in school had more than 15 units of the participation index. Therefore respondents with more children in school tended to participate more than those with less number of children in school.

When the variable of number of school going children in the household was examined in relation to number of contacts between farmer and extension worker, the results were as shown in Table 20.

Table 20: Relationship Between Number of School-going Children in the Household and Number of Farmer Contacts with Extension Worker (N=100)

Number of contacts with EW	Number of Children in the household attending school			
	0	1-2	3-4	>4
0	5 (45.5%)	10 (33.3%)	10 (29.4%)	2 (8%)
1-3	3 (27.3%)	10 (33.3%)	7 (20.6%)	9 (36%)
4-6	2 (18.2%)	7 (23.3%)	9 (26.5%)	5 (20%)
>6	1 (9.1%)	3 (10%)	8 (23.5%)	9 (36%)
Total	11 (100%)	30 (100%)	34 (100%)	25 (100)
<i>Chisquare = 12.349</i>		<i>Df = 9</i>	<i>Significance = 0.194</i>	

Although the relationship was not statistically significant as Table 20 shows, the data indicated that farmers with a high number of children attending school were more likely to have contacts with extension workers. Since most farmers relied on the farm as a major source of income, it meant that purchase of school requirements also relied on the farm and so it was not strange to find this kind of relationship between number of school going children in the household and the number of contacts between farmers and extension workers.

Factors Influencing Farmer Participation - Farmers’ Perspective

When asked to state generally the factors that played a major role in their decision to either participate or not to participate in extension activities, most respondents said that the desire to learn more and improve their farming challenged them to attend. Table 21 outlines the various factors that farmers identified.

Table 21: Distribution of Respondents by Factors Influencing Farmer Participation Identified by Farmers (N=95)

Factor	Number of Respondents	Per cent (%)
-Desire to learn and improve my farming	30	31.6
-To try and deal with poverty	19	20.0
-For prospects of acquiring inputs	9	9.5
-Information about occurrence and venue of such extension activities	9	9.5
-To reduce food insecurity	7	7.4
-Ill health/Funerals	6	6.3
-Other commitments e.g. Church, business errands, marriage restrictions, etc	6	6.3
-Convenience of time/venue of extension activities	5	5.2
-Extension workers capability	4	4.2
Total	95	100.0

From Table 21 it is clear that there were quite a number of factors that influenced the farmers’ decision on whether to attend extension activities or not. Dealing with poverty, acquisition of farm inputs and prior information about the occurrence of such extension activities, addressing food insecurity, ill-health and frequent funerals were some of the factors that farmers said affected their decision on whether or not to attend.

Factors Influencing Farmer Participation – Extension Workers’ Perspective

When extension workers were interviewed about what they thought were the factors that influenced the farmers’ participation in extension activities based on their experience, they gave a number of factors most of which coincided with farmers’ own perspective and with those derived from the structured interview with farmers. Most of the responses given by all the seven extension staff interviewed regarding the factors that they reckoned

were influencing the participation of farmers in extension were in agreement. These factors included the following.

Gender: As derived from the farmer interview, all the seven staff respondents suggested that gender had a marked influence on the levels of farmer participation in the extension activities in the sense that there were usually more men than women participating each time there was a group extension activity. They explained that this scenario was a result of a high degree of gender stereotyping among the communities in the area. Men considered themselves as heads of households and so felt that extension information/technology was better obtained by the men than women. Whereas women were considered as housewives whose domain in the household was mostly the kitchen. But the paradox was that women in the area were usually the ones who did most farm work. One of the extension staff interviewed was quoted as saying:

“The practice of using women for farm work, especially common among the polygamous settler community, while restricting them from attending extension activities was a hindrance to good adoption levels”.

It was also suggested that even in the event that women attended, they found it difficult to express themselves in front of men. This is in tandem with the editorial view of the Oxfam journal (1999, p. 3) which observed that the restricted and policed mobility of women is the kind of control which shapes women’s participation in economic activities. A similar view was echoed by Moris (1991, p.111) in reference to extension meetings in East Africa, which he branded as having been a legacy of what he called a ‘colonial baraza’.

Farmer Size/Social Status: Extension workers suggested that the differences in sizes of farms also influenced their participation in the extension activities. They observed that relatively larger/wealthier farmers tended to shun extension activities if the majority of those who attended were of lower status. And on the other hand very small and poor farmers found it difficult to mix with better-off farmers as they felt that such group

activities would be hijacked by those who were better-off and consequently becoming irrelevant to them. This assertion was confirmed by a large livestock farmer who the researcher had a discussion with, though not among the respondents. This farmer said that the farmers (who were smaller than him) in his neighbourhood did not like to associate with him as they “*feared*” him for reasons he did not know, therefore they would find it difficult to accept him in the local farmers’ association. This situation highlighted the impact of social/economic differences on group development endeavours in general and on agricultural extension in particular. Additionally very poor farmers were said to be pre-occupied with their search for basic needs such as foodstuffs and so found it difficult to spare some time for extension activities.

Legacy of Previous Agricultural Policies: It was also observed that the past government policies on agriculture had an influence on the participation of farmers in extension activities. For a long time in the past government was intervening in farm input supply to smallholder farmers and in produce marketing. The culture of expecting government to supply farm inputs on credit was therefore built among these farmers. At that point in time the farmers’ participation in public extension activities was high. But since the change in policy, it had been noticed that farmers had been reluctant to attend extension activities. This had confirmed that beyond the messages/technologies disseminated from these extension activities, farmers usually expected extension workers to address the issues of input supply and to some extent produce marketing. All the staff respondents indicated that it had been very difficult to convince farmers to participate in extension activities since the policy changed. This they said had been compounded by governments’ failure to send the right signals regarding its position on this issue as it had on several occasions back-pedalled on this policy by intervening in input provision to smallholder farmers. They also said that this situation was in part responsible for the failure of the full development of the private organisations that were expected to fill the gap that the complete government withdrawal would leave.

Feeding at Extension Activities: Certain group extension activities such as field days, farmer courses (both mobile and residential) and others require that feeding arrangements

are put in place since a group of participants would be kept for a prolonged period of time. It was observed that activities such as these usually recorded large farmer attendance. But extension workers further observed that while some of those who attended did so genuinely, others were in attendance for the sake of feeding. This was cited as one of the reasons explaining the huge disparity between attendance at extension activities and the levels of adoption among smallholder farmers.

Religion: Extension workers also cited religious beliefs as being partly responsible for low farmer participation in extension activities. They observed that some churches discouraged their congregations from mixing with members of other faiths. This impacted negatively on the participation of farmers in extension. It was also observed that some members of certain churches would not attend activities where rearing of certain farm animals was being promoted.

Cultural Factors: Also cited as factors that partly influenced farmer participation by extension workers were customs and traditional beliefs. They said that beliefs such as witchcraft retarded the successful participation of farmers in extension activities. Some farmers believed that if they for instance hosted a demonstration or a field day where other farmers would gather and learn from, there was a possibility for them to mysteriously lose their full yield potential as part of it would be mysteriously transferred to farmers with the art of witchcraft.

Finally other factors cited were that some farmers attended activities out of curiosity while others did so merely for reasons of socialisation.

The Nature of Farmer Participation in Extension Activities

Participation is one aspect whose meaning may be vague until it is qualified as to the kind of participation being referred to. It has already been noted in the theoretical and conceptual chapter (Chapter Two) that participation can be understood as a continuum from the least amount of community participation to the most amount of it. In the case of

agricultural extension in the area of study, it was established that extension workers employed a number of extension methods as alluded earlier in this Chapter. Although most of these methods were interactive in nature it was observed that each of them had quite a good number of farmers who did not participate in them. It was further noticed that out of those who participated some of them did so for reasons that were inconsistent with the objectives of such activities such as feeding, curiosity, socialisation, etc (refer to factors influencing participation above). But from the point of view of extension workers, some of those who participated did so because of immediate incentives that accompanied these activities such as pointed out above and also to increase prospects of acquiring farm inputs. While the aspect of using local leadership in mobilising farmers for participation was said to be effective in improving attendance, it is the view of the researcher that care must be taken in associating such attendance with success because it is likely to be a product of fear rather than farmers' own interest to learn new/alternative technologies and share information with other farmers.

Based on the aforesaid, it is clear first of all that there were quite a good number of farmers who did not participate at all in each method of extension that was used, that some farmers interacted for the right reasons while others participated based on their expectations of incentives such as being advanced with credit for farm inputs, feeding during activities, and other such benefits. The latter form of participation is what can be referred to as 'incentive-driven' participation while the former can be classified as some sort of interactive participation. It is important to note also that under the circumstances where there was some level of reliance on inducing attendance by using village leadership, the possibility of generating a passive kind of participation can not be ruled out.

Conclusion to Part Four

There are a number of issues that have been raised in this section of Chapter Three that relate to the factors that were found to influence the participation of farmers in extension activities. Firstly the spatial differences in farmers' participation reflecting the spatial

biases in the way extension activities are conducted. In terms of personal characteristics it was found that there was a gender imbalance with regard to farmer participation whereby female farmers exhibited lower participation than male farmers. Marital status was also found to affect participation as those who were married tended to have higher participation than those who were not. Farmer's household size was also found to strongly affect participation, as farmers with bigger households participated more than otherwise. Age was also found to influence participation although significantly. Literacy and level of education also showed a directly proportional relationship with participation although not significantly. Religion and whether farmer worked on other people's farms were also other personal characteristics that were found to influence farmer participation in extension.

There were also a number of farm characteristics that were found to influence farmer participation in extension service activities. Farm size was found to affect farmer participation such that farmers with relatively bigger farms were likely to participate more than those with smaller farmland. The amount of area farmed had a similar effect on participation. Also observed was that farmers engaged in more farm enterprises were likely to participate more than those who were engaged in fewer farm enterprises. Farmers who depended on government for acquisition of farm inputs were found to participate relatively more than those who acquired inputs using their own means, whereas those who depended on charity participated to a very low extent.

With respect to livelihood factors it was found that those who depended on the farm as their major source of income tended to participate in extension more than otherwise. It was also found that farmers with more family commitments such as a large number of children needing school requirements participated more than those with less family commitments.

From the farmers' own perspective it was established that farmers who participated were influenced by their desire to learn and improve their farming, to deal with various issues such as those related to poverty, increased prospects for acquiring farm inputs, and to

reduce food insecurity. Other factors cited by farmers were health issues, bereavements in families/family friends, lack of information about the occurrence of extension activities, extension worker's capability and other commitments.

Other factors cited by extension workers as influencing farmer participation were similar with those derived from the structured interview with farmers and they included among others size of the farm, farmers' socio-economic standing in the community, effects of past agricultural policies, mechanics of organising extension activities with regard to the aspect of feeding, religious beliefs, cultural and other related issues. With respect to the nature of participation it can be concluded there were three types of participation identified among the research population namely passive participation, incentive-driven type of participation and finally interactive participation.

From the foregoing, it is clear that there are a lot of issues that affect participation of smallholder farmers in extension activities and therefore a lot of factors for extension workers to take into account when working with farmers in order to enhance their participation. In the face of all these issues the extension worker must have the necessary competencies to identify those factors that are likely to adversely affect participation of their clients and find a way of dealing with them or mitigating their impact on participation and in effect on smallholder farmers' economic well being.

Part Five: Factors Negating Extension Workers' Efforts in Fostering Participation

There are many factors that affect the extension workers in their efforts to facilitate participation of smallholder farmers in extension activities under the current restructured system of agricultural extension in Zambia in general and in Mumbwa District in particular. On the basis of the semi-structured interviews with the extension staff, the factors that were said to adversely affect extension workers in their efforts to increase farmer participation in extension could be classified in three major categories namely sociological factors, personal factors and systemic factors.

Sociological Factors

There were a number of social related issues that affected extension workers and were identified as being partly responsible for reducing farmer participation. The *social status* of the extension worker vis-à-vis that of farmers was identified as one of these factors. Some farmers (usually wealthy farmers) have a higher social status than extension workers considering that the latter have a low pay. Such farmers sometimes felt that it was a waste of time to listen a simple extension worker. However most smallholder farmers were said to have a lower social status than a government worker such as an extension worker who they consider to be better off as he/she receives a salary. Most staff respondents explained that very poor farmers sometimes find it difficult to approach an extension worker for advice or even to attend meetings as they consider the extension worker to be more educated than they are.

Extension workers also admitted that being human beings it was possible that sometimes they tended to give *preferential treatment* to certain farmers when it came to interacting with them for extension purposes. They explained that there were instances when they concentrated on certain farmers in their locales of operation, although they pointed out that this was not done deliberately. Unfortunately this led to the exclusion of others that required similar services from them. This usually happened where extension workers felt the concerned farmers gave them special treatment. It is therefore important that extension workers look out for such unwarranted biases in their work. But it was also pointed out that sometimes there were incidences that could result in such biases, like harassment of extension workers by individuals in certain communities. A senior agricultural staff interviewed cited an incident, although isolated, where a female extension worker had been harassed by some people in some community which prompted her withdrawal from that area.

It was also observed that *gender relations* between farmers and extension workers affected smooth facilitation of farmer participation in extension activities. Respondents

suggested that male extension workers were sometimes suspected and mistrusted by men in some communities when it came to working with female farmers. Unless the husband was present, it was usually difficult for extension workers to work with married female farmers.

Over-socialisation was another issue that extension workers cited as a negative factor in facilitating participation. They explained that when an extension worker remained in the same area for a long period of time, there was a tendency by most of them to over-indulge in social functions including too much drinking with the local people which was a recipe for picking up quarrels with their would be clients, this would consequently lead to the erosion of client confidence in their extension worker.

Language was cited as another factor. The majority of the local people have not gone far enough in their formal education to be able to understand the official language (English). Therefore it was pointed out that extension workers should strive to know the language of the local people to ease problems of communication.

Failure by extension worker to develop a good *rapport* with the local leadership and the community at larger was said to be one of the issues that negated extension workers' effectiveness in facilitating participation. This was because communities respected their local leadership so much and these leaders had a lot of influence in their communities. Therefore depending on how the extension worker related with the local leaders, it was possible to either enhance farmer participation or indeed make it difficult for him/her to facilitate it.

Personal Factors

These were factors that related to the extension worker as an individual and were identified to adversely affect his/her efforts in fostering farmer participation in their respective areas of operation.

Some factors pointed out included the *competence* of the extension worker. Fostering participation requires skilful facilitation and it was observed that in some cases there was a lack of such skills among extension workers which led to poor handling of extension activities including lack of consultations with farmers. But good facilitation skills were not necessarily dependent upon the level of education, rather on the intuition, aptitude and experience of extension workers, which did not need long and rigorous years of formal education to acquire. These are some of the competencies that some extension workers lacked and needed to be addressed. However the long experience of most extension workers with the orthodox top-down systems of agricultural extension was cited as being responsible for their slower change of attitude in espousing the 'new' non-instructive ethos of extension.

Behaviour of some extension workers was also cited by a number of some staff respondents as one of the factors that determine the extent of farmer participation. Extension workers whose behaviour was unpalatable in the eyes of the community usually failed to garner participation from farmers in extension activities.

The *economic situation* of the extension worker was identified as another important factor in as far as fostering farmer participation was concerned. Staff respondents noted that the extension workers' remuneration was so pathetic and described as being 'far' below the poverty line. It was argued that this situation compelled most extension workers to spend a good amount of work time on personal errands to enable them to supplement their incomes. To this effect the work morale of extension workers was said to be very low. This was also linked to a lack of staff motivation.

Systemic Factors

Systemic factors refer to those factors arising from the organisation and operations of the extension system in the country in general and in the area of study in particular. There was a range of these factors, and they among others included issues of resource constraints, logistical support, and also touched on issues relating to policy.

Over-reliance on donor funding for programmes was said to be a serious factor in negating participation of farmers. It was observed that there was a tendency for well-meant programmes that farmers responded to favourably to abruptly come to an end because of discontinued funding by responsible donors. This eroded the farmer confidence in the programmes that were delivered through the public extension so much that it became very difficult for extension workers to convince smallholder farmers to participate in future activities, as they tended to feel paraded for someone else's benefit.

Poor Mobility was another factor mentioned as affecting extension workers in their efforts to facilitate farmer participation. It was noted that most extension workers had virtually no transport facilities as the bicycles on which they relied were either not running due to non-maintenance or had outlived their usefulness. This had made their work very difficult as it meant that they could only reach those farmers within their walking distances.

Related to the issue of poor mobility was the *vastness of areas of operation* for the camp extension worker. Extension workers explained that their areas of coverage were too large for them to be adequately covered by a single individual especially against the background of poor transport facilities.

Extension worker to farmer ratio was cited as another factor that was adversely affecting fostering of farmer participation. It was said that the camps' (basic agricultural operational areas) boundaries used today were delineated years back and have not been reviewed to match the change in population. This means that extension workers have had to provide the services to more and more farmers than they used to in the past. This was said to have increased pressure on extension workers, a situation which is not ideal for successful mobilisation of farmer participation especially that this paradigm requires patience on the part of the extension worker.

Bureaucracy was to some extent affecting operations of extension staff even under the restructured system of organisation of the Ministry of Agriculture and Department of Field Services. Similarly the work programmes at district level were found to be largely dependent on the provincial and national level establishments' decisions especially when it came to supporting such programmes financially, although in principle there has been decentralisation in respect of the same. It can be said that the reality in terms of operations does not seem to reflect decentralisation in the system.

Lack of motivation was also said to retard participation of farmers. Extension workers said that they were demotivated due to lack of allowances for them even though their conditions of service spelled out the need for them to receive allowances for specified situations.

Inadequate backstopping and supervision from Subject Matter Specialists (SMS) at the district office was another factor. The extension staff pointed out that they were not adequately visited by their senior supervisors from the district office. They explained that the presence of senior supervisors and SMS at some important extension activities once in a while increased their work morale, unfortunately it was at the moment rare to be backstopped. But senior extension staff cited the constraints placed on them by inadequate resources as being responsible for that kind of scenario. They said that they were constrained in terms of transport, materials, allowances etc which made it just impossible for them to backstop and supervise all the camp staff as per work calendar.

Poor housing for extension workers was cited as another factor. It was explained that extension workers were living in extremely dilapidated houses which posed a danger to the safety of their families. Most of the houses have for a long time not undergone maintenance. This situation was partly responsible for dampening the work morale of extension workers.

Lack of consistency between policy and implementation was another factor that was alluded to. It was suggested that the government policy on agricultural matters that were

critical to smallholder farmers was not always adhered to when it came to implementation. For instance the aspect of input distribution to farmers as already alluded to, had on many occasions not been handled as per policy requirements. This aspect had fallen prey to political wisdom as there had been a number of policy U-turns from time to time. This made it very difficult for implementers (extension workers) to convince smallholder farmers as to what the actual policy position was. This caused some farmers to lose confidence in extension workers and the extension system as whole because as far as the smallholder farmers were concerned input distribution and agricultural extension were two sides of the coin.

Extension staff cited a lack of further *training opportunities* as demoralising. They said that extension staff were no longer sent for further education adding that even the routine staff training had long been stopped. This was in the apparent reference to the quarterly staff training experienced under the Training and Visit (T and V) system some characteristics of which have been retained in the restructured system.

A reference to *work safety* was also made by extension staff who complained that their employers had turned a blind eye to their safety. They said that no safety measures were in place to the extent that things like basic safety clothing for extension workers had been overlooked.

All the above issues culminated into the negation of extension workers' efforts in fostering participation of smallholder farmers.

Conclusion to Part Five

The factors affecting extension workers in their efforts to facilitate the participation of smallholder farmers as identified and described above were numerous and ranged from social factors to personal and finally to those arising from the extension system. Whereas social and personal factors can to some extent be mitigated, it can be difficult for individual extension workers to mitigate the influence of systemic factors on the

participation of farmers in extension activities. Therefore while change is needed on the part of extension workers' in view of the identified factors, the extension system equally need to be re-visited to be able to support the participatory procedures.

Conclusion to Chapter Three

From the discourse in Chapter Three a number of inferences can be drawn. Firstly it has been established from the description of how agricultural extension is conducted in the area that by and large it still reflects characteristics of the T and V system of agricultural extension. It was also established that even though the level of extension activities in the area was found to be low, the level of farmer participation in extension activities was on average lower than half of the potential level. In the same vein it was established that certain sub groups of farmers such as women, youth, smaller farmers, illiterate farmers, farmers with smaller households, unmarried farmers, farmers in the periphery, farmers whose major source of income was non-farm in nature and such others were found to be likely to participate to a lesser degree than those farmers who were men, literate, those with larger households, married, easily accessible, who depended on farm income and such other farmers as noted earlier in the discourse.

It can also be concluded from this Chapter that the factors that were found to influence farmer participation in extension activities were numerous and included most of the personal characteristics such as gender, marital status, religion, literacy/education level, household size, etc. Other factors were related to farm characteristics and included farmer size, number of enterprises on the farm, farmer's mode of input acquisition, and also livelihood factors such as major source of income and so on.

As for the nature of farmer participation in extension, it can be inferred that some farmers passively participated, while the participation of others was incentive-driven and more were involved in interactive kind of participation.

Finally, there were a number of factors that were found to play a part in retarding extension workers' efforts in facilitating farmer participation in extension activities. However there were three major categories identified and described which included sociological factors, extension workers' personal factors, and those factors arising from the extension system itself.

On the basis of the above analysis and the issues arising from it, it is necessary to come up with the suggestions as to how the shortcomings identified can be sorted out or mitigated in order to enhance the much needed participation of smallholder farmers in the public extension system, which is the subject of the next Chapter.

CHAPTER FOUR: SUMMARY, CONCLUSION AND RECOMMENDATIONS

Introduction

This Chapter presents the summary of the study and its findings and gives conclusions and recommendations on the basis of these findings. In order to achieve this, Chapter Four begins with a summary of the objectives and the methodology of the study and then goes on to present the summary of the findings and finally the conclusions and the recommendations.

Objectives and Methodology

Objectives

The objective of the study was to evaluate the Zambian Government Ministry-operated agricultural extension service delivery with respect to the participation of various sub-groups of smallholder farmers. The purpose was to ultimately suggest how participation of smallholder farmers can be improved so as to render the public extension service more effective. Therefore the following specific objectives were devised:

- To describe the agricultural extension service as it was implemented on the ground
- To find out the level of access to extension service by smallholder farmers under the restructured (Agricultural Sector Investment Programme - ASIP) system of agricultural extension
- To find out the nature of smallholder farmers' participation in the extension service delivery system

- To find out the factors which influence the participation of farmers in agricultural extension activities
- To find out and describe the factors that affect the extension workers in their efforts to facilitate participation of smallholder farmers in extension activities under the restructured system of agricultural extension service and finally
- To make recommendations to all stakeholders on how participation of smallholder farmers in the public extension programmes can be improved.

The research was both qualitative and quantitative in nature. The methods of the study used in order to achieve the above objectives are described below.

Primary Data

Primary data were collected using structured questionnaires administered to 100 smallholder farmer interviewees selected using systematic random sampling from two conveniently selected agricultural blocks of Mumbwa District of Zambia. Semi-structured interviews were also conducted with seven extension staff. In addition personal observations throughout the entire research process was also employed to augment the aforementioned forms of primary data collection.

Secondary Data

To complement primary data secondary data were also collected by reviewing literature from various institutions including University College Dublin, Ministry of Agriculture and Co-operatives (MACO), University of Zambia, and other organisations. The researcher's personal experience was also used.

Data Analysis

Statistical Package for Social Sciences (SPSS) was used in the analysis of primary data. SPSS applications including descriptive statistics, crosstabulations, t-tests and others were utilised.

Summary of the Findings

There are seven headings under which the findings of this study are summarised and they include:

- The description of the extension implementation in Mumbwa District
- The general characteristics of the respondents
- Level of Access to extension services by smallholder farmers
- Factors influencing the participation of smallholder farmers
- Nature of the smallholder farmers' participation
- Factors affecting extension workers in their efforts to facilitate participation of smallholder farmers
- Suggested ways of improving the participation of smallholder farmers

Description of Extension Implementation in Mumbwa District

Firstly it was established that the new structure of extension implementation was in many respects similar to the old one which existed before the Agricultural Sector Investment Programme (ASIP) which was characteristically top-down in nature, and that implementation of extension activities was basically characteristic of the Training and Visit (T and V) system of agricultural extension .

Planned activities at district level were hampered by decisions at higher levels especially regarding resources on which these activities depended. While it was appreciated that resources were limited, even the little that were approved were either remitted late or never remitted at all, which seriously undermined the aspect of decentralisation for which restructuring was embarked upon.

It was also established that the methods used by extension workers for interacting with farmers included farm visits, demonstrations, field days, meetings, farmer courses, agricultural shows, role plays, drama etc. Farmer mobilisation was found to be done by the extension worker using posters, and also through the village headmen. It was also found that extension functions were usually initiated by the extension workers while smallholder farmers just waited for the extension workers to organise such functions. Farmers were not aware that they could also initiate extension activities. Group extension activities were usually organised by the extension worker although there were difficulties arising from religious and cultural/traditional beliefs in such group functions. Farmer mobilisation for extension activities was easier where there were existing farmer groups.

Lack of adequate knowledge of the language of the local people and low competence and skills in facilitating group activities by some extension staff were some aspects cited as affecting successful agricultural extension.

General Characteristics of the Respondents

Slightly over two thirds of the respondents were male while just below a third were female. Thirty-nine per cent of respondents were in the age group range of 36 years to 50 years. The majority (86%) of the respondents were married. The majority of the households were found to have large household sizes with an average of 8.3 members per household. All but three respondents belonged to the Christian faith with the majority of these belonging to the protestant churches including SDA, UCZ, Pentecostal, Salvation Army and other churches. The Catholics constituted only 7% of the respondents. Most (88%) of the respondents were literate, and 57% had only up to primary education while 41% had managed to acquire some secondary education. In terms of labour 53% of the respondents depended on family labour while 44% depended on both family and hired labour and only 3% relied entirely on hired labour.

Sixty-two percent of the respondents owned up to 6ha of farmland and 69% of these cultivated only up to 3ha of their farmland. Apart from owning small plots of farmland

most of the respondents cultivated an average 2.6ha which was much less than the average amount of land owned.

The number of smallholder farmers rearing cattle was found to be low (33) due to the widespread loss of animals to corridor disease. Chickens were reared by 80% of the respondents while rearing of small ruminant animals was also found to be a relatively higher than cattle. The principal crop grown in the area was maize, being the staple food crop, and other crops grown included cotton, paprika, soya beans, sorghum, millet, ground nuts, cassava, vegetables and others.

Hand hoes and oxen were the most widely used farm tools, although most farmers used hired oxen. Forty-six percent of the respondents got their inputs through both government input credit and supplemented by buying extra farm inputs, while 33% just acquired their inputs on their own. A few used left over inputs while a few others relied on charity.

The majority of the respondents relied on farming as their major source of income and only a few relied on non-farm sources for their income. The dependence on the farm for food was found to be high, and the average number of children not in school per household was quite high.

Level of Access to Extension Service by Smallholder Farmers

Although 73% of the respondents had at least one form of contact with the extension worker, less than half (45%) of the respondents took the initiative to request extension worker's advice on farming issues. The majority of the farmers waited for extension workers to visit them or conduct activities during which they could ask for advice.

Most of the farmers sought services relating to crop farming and land management practices, while others sought extension advice relating to pest management, livestock management, input acquisition, post-harvest handling and others.

It was found that only about half of the 100 respondents attended each extension activity, with demonstrations followed by field days being the worst in terms of farmer attendance. This showed that interactive participation was low among the respondents.

The average farmer participation and therefore access to extension services was lower than half of the full participation potential, although the extension activity was generally found to be low.

Factors Influencing Participation of Smallholder Farmers

Location of the farmer was found to have an effect on the level of farmers' participation in extension activities as there were less farmers participating in areas far from the district station than there were in areas which were close.

Male respondents participated more in extension activities than female respondents. Therefore gender had an influence on farmer participation in extension activities. Unexpectedly, married respondents participated more than the unmarried respondents, but a further analysis showed that most (61%) of the unmarried respondents were female.

Respondents with larger household sizes participated more in extension activities than those with smaller household sizes since larger households were associated with more family labour.

With respect to age, fewer young farmers participated in extension activities than older farmers. In terms of literacy, the illiterates participated less in extension activities than those who were literate. Similarly respondents with a lower level of education participated less than those with a higher level of education.

Smallholder farmers who worked on other people's farms for extra income participated less in extension activities than those who did not. SDA church members were found to

have participated less than members of other churches, while Catholic church members participated more than members of other churches.

Respondents with larger farms participated more than respondents with smaller farm size. Similarly farmers with larger cultivated areas tended to participate more than those with smaller cultivated farmlands.

All farmers were involved in crop enterprises whereas not all of them were engaged in livestock enterprise. But farmers with both crop and livestock enterprises were found to participate more in extension activities than those with only one enterprises, although the difference was not significant.

Respondents who used hand hoes for cultivation tended to participate less than those who used oxen and tractors respectively although it was not significant. More respondents who relied on government sponsored input credit participated more in extension activities than those who bought all/supplemented what they obtained on credit and those who got on charity.

The respondents who relied on the farm as a major source of income tended to participate more than those who relied on non-farm income. Respondents with more children attending school were also found to participate more.

Respondents cited the desire to learn and improve their farming, to deal with poverty, acquisition of inputs, being informed about the occurrence of extension activities, and addressing food insecurity as some of the major factors that affected their decisions to participate. Other factors cited included ill-health/funerals, extension workers capability and coincidence with other commitments such as church issues, business errands, marriage restrictions etc.

From the extension worker's perspective, the factors that influenced farmer participation included gender with women being more disadvantaged, farm size and farmer's socio-

economic status, effect of previous agricultural policies, provision of food at extension activities, and religion/other cultural and traditional factors.

Nature of Smallholder Farmer's Participation

Three forms of participation were identified among the farmer respondents in the area. These included passive participation, incentive-driven participation, and some level of interactive form of participation.

Factors affecting Extension Workers in their efforts to Facilitate Participation of Smallholder Farmers

Three categories of factors were identified as affecting extension workers' efforts in facilitating smallholder farmer participation. These included sociological, personal and systemic factors.

Some sociological factors included the differences in social status/well-being between extension worker and the farmer, extension worker's biases, gender relations between the extension worker and the farmers, over-socialisation by extension worker, language barrier, and extension worker's failure to build good rapport with the community.

The personal factors that were identified as negating the facilitation of smallholder farmers' participation included extension worker's competence, behaviour towards the locals including general social etiquette, and also extension worker's economic well-being.

There were a number of factors that were said to arise from the system of extension, amongst those identified were over-reliance on donor funding, the availability of which more often than not was uncertain, poor mobility for extension workers, vastness of areas of operations for camp extension workers, high extension worker to farmer ratio, government bureaucracy in the system despite attempted decentralisation with some

elements of top-down approach to certain critical issues on which extension depended, lack of motivation for extension workers, and inadequate supervisory and backstopping to the field extension workers. Other factors were dilapidated/poor housing for staff, inconsistencies between policy and implementation especially when it came to 'political crops' such as maize, lack of training opportunities for extension workers, and also inadequate safety measures for field staff were all identified as affecting smooth facilitation of smallholder farmer participation in extension activities.

Suggestions on how Participation of Smallholder Farmers can be Improved

It was suggested that extension workers needed to step up gender sensitisation in order to lessen the gender stereotypes in the community so that the gender gap in terms of access to and participation in extension activities can be reduced or even eliminated altogether. Critical in this aspect is the involvement of the local/traditional institutions including headmen and church leaders so that the community at large is made aware of the ills and repercussions of various forms of gender discrimination including that which is traditionally institutionalised.

Because extension workers are faced with the duty of enabling smallholder farmers to address not only problems of a technical nature but also problems relating to the whole farm system, it would be necessary for them to train farmers in basic group work skills and co-operation since these form precursors to successful participation. Therefore farmers should be sensitised in basic participatory skills as well, so that all farmers regardless of their gender, socio-economic status, literacy, education level, religion, location, age, kind of enterprise, household size, farm size, and so on can take part in extension activities without any discrimination by virtue of their circumstances.

Suggestions were made on the need to make smallholder farmer participation more interactive than passive and incentive driven. Some staff respondents felt that the old and non-functional farmer co-operatives which existed only on paper and created for the sole purpose of input supply should be replaced with new, viable and problem-solving oriented farmer co-operatives, whose formation would be based on a wider spectrum of

farming issues rather than only for input supply and subtly for politics. This way it would be easier for extension workers to reach as many farmers as possible since co-operatives would form organised farmer groups for extension information dissemination.

The reality among the smallholder farmers is that if for any reason they are not able to farm in a particular season, then participating in agricultural extension activities becomes useless, hence stakeholders should ensure that there is an enabling environment for the smallholder farmers by ensuring that critical issues are in place, such as inputs (fertilisers and seed) and/or increasing the promotion of alternative agriculture, which require less use of external inputs. In this respect farmers should be sensitised on how crucial their responsibility to pay back their loans is to making the input supply system sustainable for them to benefit in the long term.

It was also suggested that smallholder farmers needed to be sensitised on what the extension service was capable and not capable of doing so as to avoid unrealistic expectations of the extension service. Smallholder farmers needed to be aware of the essence of the extension services and the need for them to demand these services. In the same vein extension agents should ensure that their services are not only timely but also relevant to the farming community.

Cost-sharing during extension functions needed to be promoted so that the idea of having people to participate because of incentives such as feeding at these functions can be dealt with. In the long run smallholder farmers should be prepared to pay for the cost of holding extension functions.

It was also suggested that extension workers needed to be given the means for them to operate effectively. These included ensuring mobility in view of the vastness of the areas of operation and the high extension worker to farmer ratio, allowances, material etc. While resource limitation was recognised, it was suggested that the extension system needed to set its priorities right by directing the little resources available to the field operations where results were needed. In the same vein it was suggested that there was

need to shade off some more support staff so that resources saved henceforth, could be directed to the core business of the department to avoid a situation of merely supporting the system rather than the needy.

It was also suggested that policy reform should not be hurried to meet deadlines of external interest groups but be given ample time so that smallholder farmers are made aware of the proposed reforms and that they are enabled to contribute to such reforms in various ways so as to give the new policies acceptance and legitimacy among the smallholder farmers who are the majority stakeholders.

Conclusions and Recommendations

Based on the findings of the study conclusions were drawn and subsequently recommendation were made.

Conclusions

The headings under which the conclusions are presented are based on the objectives of the study as in the case above.

Description of Extension Implementation in Mumbwa District: From the description of the way agricultural extension is conducted in the area of study, it is clear that there is still some semblance of more top-down than bottom-up elements which make the system not conducive for participation to take root. There is still some element of 'transfer of technology' hang over in the system.

There is also over-reliance on extension workers by farmers for agricultural innovations, which lead to non-utilisation or under utilisation of the indigenous technical knowledge of the smallholder farmers.

In the quest to improve attendance at extension activities, extension workers seemed to rely so much on the local leaders' authority and short term incentives (e.g. providing food or making promises about possible input supply) rather than on their persuasion and farmer willingness to participate.

General Characteristics of the Respondents: Based on the general characteristics it can be concluded that smallholder farmers are not homogeneous, but that there are sub groups within this category which need to be approached in different ways. Some of the interest groups in this category include the women, the youth, poor farmers relatively wealthy or socio-economically better-off farmers, illiterate farmers, literate farmers, married and unmarried, farmers of individual religious faiths, farmers with big families and those with small families etc.

Level of Access to Extension Service by Smallholder Farmers: Even with the extension activity being low, smallholder farmers' access to extension service in the area of study was found to be low. The lowest level of access was recorded by women, very poor or vulnerable farmers, illiterate farmers, and those farmers who were geographically disadvantaged etc. Farmers' participation in extension service activities was generally very low.

Factors Influencing Participation of Smallholder Farmers: Participation of smallholder farmers was found to be influenced by various factors including personal characteristics of the farmer such as gender, age, marital status, religion, family size, socio-economic status, etc. Other factors were farm related such as farm size, amount of land farmed, kind and number of enterprises the farmer was engaged in, etc. The other factors that related to issues of livelihood such as major sources of income for the farmer, source of food for the farmer, and other livelihood commitments. The location of the farmer in relation to the source of extension service was another cardinal factor. Lastly natural calamities such as droughts, livestock diseases and ill-health among smallholder farmers had adverse effects on the participation of smallholder farmers in extension

activities, because of the enormous additional burden they place on the already struggling smallholder farmers.

Nature of Smallholder Farmer's Participation: For the area of study it can be concluded that by and large smallholder farmers' participation was high on passive and incentive-driven participation and low on interactive participation.

Factors affecting Extension Workers in their efforts to Facilitate Participation of

Smallholder Farmers: From the study it can be concluded that the factors that negated facilitation of farmer participation in extension service relate to three broad categories namely extension workers' personal factors, sociological factors, and factors arising from the limitations of the extension system including the policy. Personal factors include behaviour of extension worker, economic situation of the extension worker, incompetence, etc. The sociological factors include status of extension worker in relation to the farmer, gap in education between extension worker and the farmer, over-socialisation by extension worker (linked to overstaying in a particular operational area), etc. The systemic factors include extension's low responsiveness to farmer needs, inadequate resources for effective operations by field staff such as transport, allowances, etc, poor salaries for extension workers which are below the poverty line, poor accommodation for extension workers, vastness of areas of operations against the background of poor mobility, high extension worker to farmer ratio, non-adherence to policy statements etc.

Suggestions as to how Participation of Smallholder Farmers can be Improved: To conclude on the suggestions, suffice it to say that the following issues should be done:- sensitisation in gender issues; participatory procedures; input supply (not necessarily by the extension system); avoidance of making unfulfilled promises to farmers; building the culture of cost-sharing; provision of extension workers with the means to operate; and ensuring adequate participation of both field extension staff and farmers in policy formulation can help to enhance participation of smallholder farmers in extension service.

Recommendations

The recommendations are made on the basis of the findings of the study. These recommendations are made to stakeholders including the Zambian government/policy makers, extension agents/managers and development partners who are interested in working with the smallholder farming communities.

To Government/Policy Makers : The restructuring of the extension department was a good idea, but it has not fulfilled most of the objectives it was intended such as efficiency and effectiveness through right-sizing the workforce and practical decentralisation, at least not yet. Therefore it is recommended that the stalled restructuring be completed by filling all the vacancies especially at field level, and further scale down on the support staff, so that the resources saved henceforth can be directed to the core-business of the extension department.

To the Zambian government, it is recommended that extension workers' well-being be ensured by providing them with not only the means to do their jobs like transport, teaching materials, safety clothing etc, but also with improved conditions of service such as adequate and timely paid allowances, a 'normal salary' and not a 'mockery salary', habitable housing, and so on. It is also recommended that good performance be properly recognised for instance through labour day awards so as to encourage and stimulate extension workers' performance.

To Extension Staff/Managers: For any extension system to be effective, it needs to have extension agents/workers who are effective. But their effectiveness is partly dependent on the nature of contact the individual extension worker establishes with the potential clients whose participation must be won. Extension workers should persuade farmers to participate through; dissemination of valued information and in the timely manner, being sociable, and other inducements that facilitate more interactive than passive participation. There should be a deliberate programme to train and re-train extension staff in participatory approaches to extension.

It is recommended that extension workers should be able to recognise the heterogeneity among smallholder farmers and identify especially disadvantaged interest groups in respect of participation, and persuade them to take part in extension activities.

To improve the level of access to extension service it is recommended that extension improve on the frequency of extension activities which are responsive to farmer needs if access has to be high and demand-driven. Strongly recommended is the promotion of sustainable agricultural practices that farmers would be willing to adopt depending on their situations.

All issues that are critical to farm production should somehow be addressed if farmers have to see the need for them to participate in extension activities. For example while it is appreciated that extension agents may not be engaged in the supply of farm inputs especially under the liberalised economic environment, they can however play a role of facilitating this exercise say by linking the farming community to suppliers. But care must be taken so that no promises are made to the farmers in the process, as this can jeopardise farmer confidence in the extension if they are not fulfilled.

It is recommended that extension workers identify and understand the various personal, farm, livelihood and other socio-economic factors that influence smallholder farmer participation in extension service, and find a way of mitigating their negative effects and also take advantage of those that positively affect participation. For example there is need to increase gender sensitisation in the communities so as to address gender stereotypes and the subsequent participation gap. There is also a need to take advantage of the local norms that encourage group work to deal with socio-economic stratification barriers so that all or the majority of the smallholder farmers are given the opportunity to participate regardless of their various circumstances. This way the extension would be more inclusive to various smallholder farmers and they would be empowered to demand the extension services.

Extension agents also need to understand the various farming and livelihood perceived and felt needs of smallholder farmers so as to come up with extension packages that are designed to address these needs and thereby make the system effective, timely and appropriate to smallholders farmers. For instance in the event of a drought situation, farmers can be interested to participate in extension activities that mitigate the impact of droughts such as smallscale irrigation. Similarly conservation farming techniques can stimulate smallholder farmer participation if they are faced with problems of land degradation, and so on. But some needs are outside the jurisdiction of the extension system such as health of farmers, better infrastructure, schools etc. there is need to strengthen inter-ministerial linkages so that crosscutting issues are dealt with properly.

Local/traditional leaders should be involved positively in garnering farmer participation and not to 'abuse' them as a way of having huge attendances at extension activities. Critical to fostering participation is the change in attitude among service providers by acknowledging that farmers too have a wealth of knowledge which can be tapped and used to address various farming and livelihood problems. To this effect farmers should not be treated as ignorant clients who should be 'modernised' but as a source of knowledge that is beneficial to their fellow farmers and extension workers as well.

To Development Partners: Where possible, a Sector Wide Approach (SWAP) is strongly recommended to help deal with problems of variations in the approaches by parallel NGO extension operators. This would help bring about the aspects of partnership, comprehensiveness, capacity building for staff and common extension implementation procedures to avoid 'confusing' farmers.

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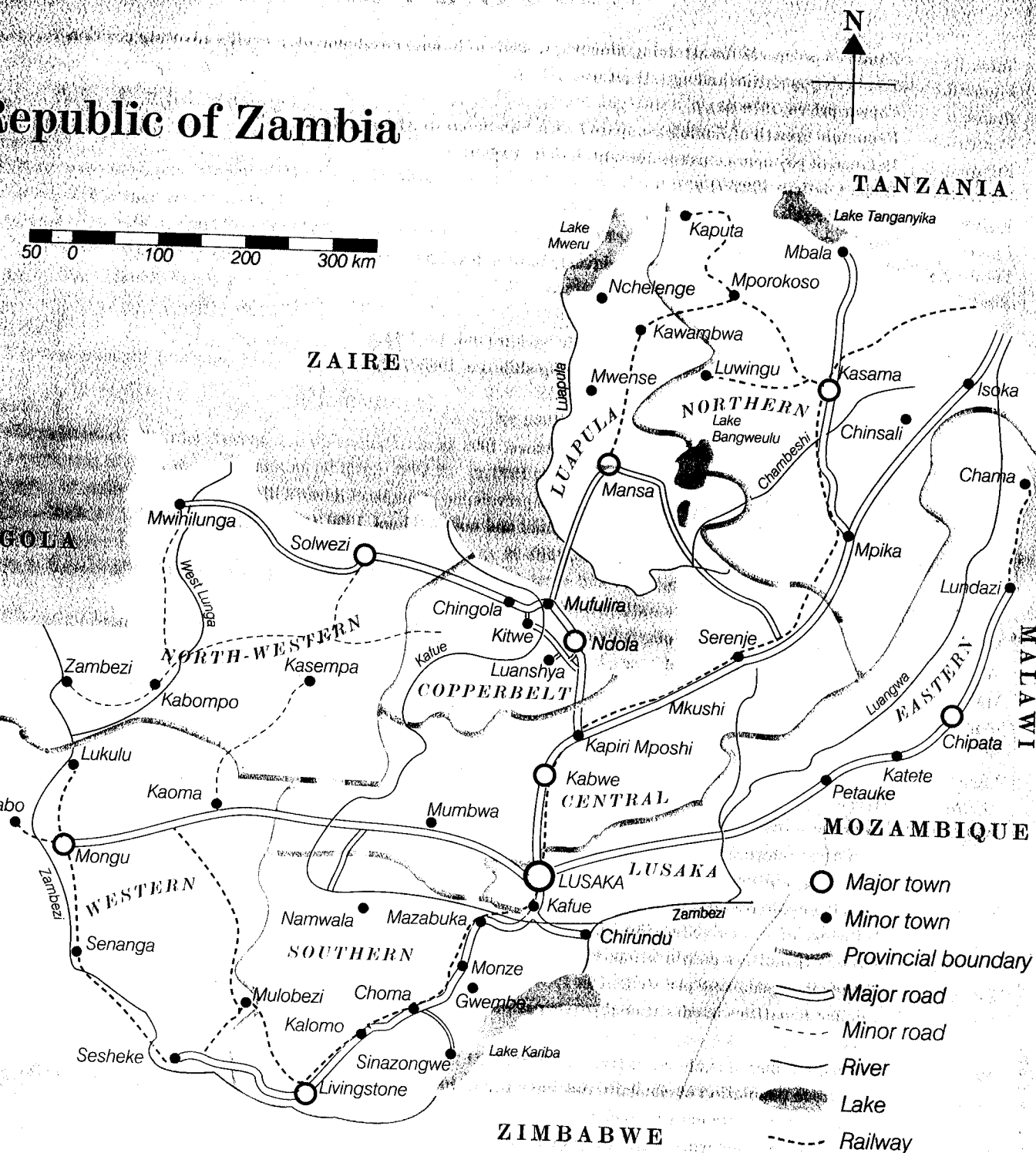
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APPENDICES

Appendix 1: Map of Zambia

Appendix 2: Questionnaire

Republic of Zambia



APPENDIX 2

SECTION A

Personal Characteristics

1. Gender of respondent: 1. Male
2. Female
2. Age of respondent: Years
3. Religion of the respondent:
 1. Christian
 2. Muslim
 3. Others (Specify)
4. If Christian, give denomination:
 1. Catholic
 2. Seventh Day Adventist
 3. Pentecostal
 4. Salvation Army
 5. United Church of Zambia
 6. Others (specify)
5. Marital status:
 1. Single
 2. Married.....
 3. Widowed.....
 4. Divorced.....
6. Number of people livng in the household:
 1. Children (under 18 years)
 2. Adults (I8 years and over)
 3. Elderly (above 65 years)
7. How many members of your family help with work on the farm? (Record number)
 1. Male
 2. Female
8. Do you often hire other people to work on your farm?
 1. Yes
 2. No
9. Do you yourself work on other people's farms for extra income?
 1. Yes
 2. No

10. Are you able to read and/or write?
1. Yes.....2.No.....
11. Level of education: 1. None
2. Adult literacy
3. Grade 1 – 4
4. Grade 5 – 7
5. Grade 8 – 9
6. Grade 10 – 12
7. Post secondary

SECTION B

Farmer Contact with Extension Worker

12. Have you noticed any changes in the work of extension workers in the recent past?
1. Yes
2. No
13. If yes to question 12, what types of changes? (specify).....
.....
.....
.....
14. Do you have contact with the extension worker for agricultural extension purposes?
1. Yes
2. No
15. If yes to question 14, about how many times in the last 12 months? (tick appropriate option).
1. 1 – 3 times
2. 4 – 6 times
3. 7 times and above
16. Do you sometimes request for extension worker’s advice?
1. Yes
2. No
17. If yes to question 16, how many times did you request for advice in the last 12 months? (RECORD)
18. What kind of extension advice did you request for?
.....
.....
19. Does the extension worker visit your farm?
1. Yes
2. No

20. If yes to question 19, about how many times in the last 12 months? (RECORD)
.....

21. Did you attend any demonstration by extension worker in the last 12 months?
1. Yes
2. No

22. If yes to question 21, how many times did you attend in the last 12 months?
(RECORD)

23. Why did you decide to attend the demonstration?
1. just because I was invited
2. because my friends attended
3. forced by the village leadership
4. wanted to get more information about farming
5. others (specify)
.....

24. If no to question 21, state the reasons:
1. No demonstration was ever held
2. was not invited
3. not useful
4. Others (specify)

25. Where there any field days held in your area in the last 12 months?
1. Yes
2. No

26. If yes to question 25, how many times did you attend the field days in the last 12 months?

27. How did you get the information about the field day?
.....

28. Whatever the answer to question 26, why?
1. They were the only field days conducted
2. was not invited to others
3. was not interested to attend others
4. Because my friends went there
5. Others (specify)
.....

29. Who usually initiates the extension meetings, and give reason(s)?
- 1. Farmers
 - 2. Village Leadership
 - 3. Extension worker
 - 4. Others (specify)

30. Are group extension meetings usually held at a convenient time and place for you? (tick).
- | | Time | Place |
|--------|-------|-------|
| 1. Yes | | |
| 2. No | | |

31. If no to question 30, how would you like extension meetings to be arranged?
- 1. Farmers should be allowed to decide
 - 2. Extension worker should decide
 - 3. Farmers and extension worker together
 - 4. Others (specify)

32. Have you attended any extension meetings? 1. Yes..... 2. No.....

33. If yes to question 32, how many times have you done so? (RECORD)

34. Does the place and time for the group extension meetings/activities affect your decision on whether or not to attend?
- 1. Yes
 - 2. No

35. In the past 12 months, what are some of the farming practices that you have learnt from interacting with extension worker?

.....

.....

36. Out of those farming practices (in question 35), state those that you have applied and those that you intend to continue applying.

.....

.....

37. How many of the following activities were held in this area in the last 12 months?

Activities	Number
1. Demonstrantions	
2. Meetings	
3. Field days	
4. Farmer courses	

38. How do you rate the usefulness of your interaction with your extension worker? (tick)

	Not Useful	Slightly Useful	Useful	Very Useful
1. Farm visits				
2. Demonstrations				
3. Field days				
4. Farmer Courses				
5.Others (specify)				
.....				

39. How would you rate your current level of interaction with extension worker?

- 1. Unsatisfactory
- 2. Satisfactory
- 3. Very satisfactory
- 4. Don't know

40. Overall, what would you say are the major factors that affect your decision on whether or not to attend extension activities?

.....

.....

.....

SECTION C

Farm Characteristics

41. How big is your farm (in acres)?

42. What types of farm enterpises are you involved in?

- 1. crops
- 2. livestock
- 3. others (specify).....

43. If you grow crops on your farm, how much land did you cultivate last season? (In hactares)

44. State the major crops that you grow on the farm and the area cultivated last season, and the yield/expected yield.

Crop	Area (acres)	Yield/Expected Yield
1. Maize		
2. Cotton		
3. Sorghum		
4. Millet		
5. Soya Beans		
6. Paprika		
8. Others (specify)		
.....		
.....		

45. If you keep livestock, indicate the kind of livestock and the number.

Type	Number
1. Cattle	
2. Goats	
3. Sheep	
4. Pigs	
5. Chikens	
6. Others (Specify)	
.....	
.....	

46. If you are engaged in crop farming state what you use for farming and whether or not you own, hire or both.

What you use	own	hire	both
1. Tractor			
2. Oxen			
3. Hand hoes			
4. Others (specify)			
.....			
.....			

47. How do you source your farm inputs (seed, fertilizers, chemicals, etc)?

- 1. Get loan
- 2. Buy on my own
- 3. others (specify)

SECTION D

Livelihood

48. What is the main source of income for the household?
- 1. Farm
 - 2. Off-farm
49. If the answer to question 48 is 2, what kind of of-farm income?
- 1. Trading
 - 2. Assistance from family members working elsewhere
 - 3. Others (specify)
50. Number of members of the household with off-farm income, if any?
51. How many members of the household depend on farm for food?
52. How many members of the family are still at school?

END: THANK YOU VERY MUCH FOR YOUR CO-OPERATION