COMMUNICATION STRATEGIES USED BY PARTICIPATORY ECOLOGICAL LAND USE MANAGEMENT (PELUM) ASSOCIATION IN PROMOTING THE ADOPTION OF LOW EXTERNAL INPUT SUSTAINABLE AGRICULTURE (LEISA) AMONG SMALL SCALE FARMERS

by

VALERIE CHANDA CHIBUYE

A dissertation submitted in partial fulfillment of the requirements for the degree of Master of Communication for Development offered by the Department of Mass Communication

The University of Zambia

2008

DECLATION

I declare that this Practical Attachment Report has not been submitted for a Degree in this or any other University

Full Name: Valerie Chanda Chibuye

Signature.....

Date.....16/09/08

Supervisor: Mr. Billy Nkunika

Signature.....

Date.....16/09/08

DEDICATION

To my family especially my children, Welani, Chimwemwe and Musonda who did not enjoy my total attention during the long hours when I was busy with school work.

ACKNOWLEDGEMENTS

Thanks go the Almight God, my source of strength, for his mercies that enabled me to undertake this study.

I would like to sincerely thank the members of staff at PELUM Regional Desk, in particular, Mr. Joseph Ssuuna, for making my attachment possible. I also like to pay tribute to other members of staff especially Marjorie Chonya Habasonda, Daniel Peters, Freda Chirwa, Matthews Musyani, Russell Phiri, Anne Maine and Mable Mukosha for their warmth and hospitality during my attachment period. I am also paying tribute to the Members of PELUM Association in Zambia and the small scale farmers in Chilanga Constituency, Kafue district who were part of this research project. I would also like to thank my employer, DanChurchAid Zambia for the financial support.

I am also very grateful to my lecturers for their guidance and moral support during my studies. Special thanks go to my supervisor Mr. Billy Nkunika, for his flexibility which enabled me to conduct my practical part of the course without undue pressure. I am also very grateful to him for his decision to continue supervising me despite his new appointment at the Zambian Open University. I would also like to sincerely thank Mr. Fidelis Muzyamba for the professional advice that he provided to me.

Special thanks to my family, in particular, my mother and father, for their parental guidance and moral support. I would also like to thank my brother Joseph for helping to baby sit while I concentrated on studies.

LIST OF FIGURES

LIST OF TABLES

ACRONYMS

AIDS	-	Acquired Immunodeficiency Syndrome
BGM	-	Biennial General Meeting
CAL	-	Campaign, Advocacy and Lobby
CD	-	Country Desk
CDC	-	Country Desk Coordinator
CLUSA	-	Cooperative League of the United States of America
CWG	-	Country Working Group
DCA	-	DanChurchAid
ESAFF	-	East and Southern Africa Farmers Forum
FGD	-	Focus Group Discussion
FM	-	Frequency Modulation
FSP	-	Fertiliser Support Programme
GDP	-	Gross Domestic Product
HDI	-	Human Development Index
HEIA	-	Heavy External Input Agriculture
HIV	-	Human immunodeficiency Virus
ICT	-	Information, Communication Technologies
IMF	-	International Monetary Fund
LEISA	-	Low External Input Sustainable Agriculture
MACO	-	Ministry of Agriculture and Cooperatives
MMD	-	Movement for Multiparty Democracy
MoU	-	Memorandum of Understanding
NGO	-	Non-Governmental Organisation
PELUM	-	Participatory Ecological Land Use Management
RD	-	Regional Desk
TGM	-	Triennial General Meeting

UNDP	-	United Nations Development Programme
UNICEF	-	United Nations Children's Fund
UNIP	-	United National Independence Party
ZNBC	-	Zambia National Broadcasting Corporation

ABSTRACT

Problem: The adoption of Low External Input Sustainable Agriculture (LEISA) among small scale farmers is low despite the advantages that this form of agriculture presents to the farmers and the environment.

Objective: The research studied the communication tools used by Participatory Land Use Management (PELUM) Association Regional Desk (RD) in promoting adoption of Low External Input Sustainable Agriculture (LEISA) among its member organisations and small scale farmers in Zambia.

Methodology: The research was done through student attachment at PELUM RD. Data were collected using three main methods. These were: in-depth discussions with members of staff at PELUM Regional and Country Desks; Focus Group Discussions with s mall scale farmers in Munyeu, Mwembeshi, Shampule and Mubanga/Westwood areas in Kafue district; and 77 questionnaires were distributed to individuals employed in PELUM Zambia member organizations.

Results: PELUM RD uses various strategies in promoting LEISA among small scale farmers and its member organizations in Zambia. One of which is communication. 46.2 percent of the respondents indicated that PELUM RD is not doing enough in communicating LEISA to its members.

Conclusion: PELUM Association Regional and Country Desks need to improve communication with member organisations in Zambia. The Association should consider conducting social change campaigns in order to change the attitudes of the small scale farmers towards LEISA and increase adoption levels.

TABLE OF CONTENTS

Chapter 3: Conceptual and Theoretical Framework

INTRODUCTION

The basic human right to adequate, safe and nutritious food for all Zambians is still far from being a reality. Most Zambians do not enjoy physical and economic access to adequate, safe and nutritious food or the means for its procurement, to meet dietary needs and food preferences for an active and healthy life. Food insecurity is most severe in rural Zambia where crop production and animal rearing are still the main sources of livelihood. The worst affected are the female headed households and households affected by the HIV/AIDS epidemic.

The failure by most rural households to produce enough food for household consumption is related to misguided policies, weak institutions and a lack of well-trained human resources (Crowder *et al.* 1998). From 1964 up to the about 1991, Zambia's agriculture was heavily subsidised by the state through state run agricultural parastatals. The state was also heavily involved in the marketing of agricultural produce. There was indiscriminate promotion of maize growing throughout the country without regard to the suitability of the crop for a particular area. The subsidies were given in form of inputs and included maize seed, chemical fertilisers, and equipment such as tractors and ploughs. In order to implement this kind of policy, government agricultural research and extension was tailored towards promotion of high external input agriculture complimented by conventional farming methods. These conventional methods involved clearing large tracts of land and intensive land tillage. This method of farming proved to be economically and environmentally unsustainable. The Zambian economic depression in the 1970s was a turning point for subsidised agriculture. The depression was caused by various factors including the fall in copper prices on the world market, the rise in world oil prices, mismanagement of nationalised industries and support to the independence liberation struggles of neighbouring

countries. By the 1990s, most of the government agricultural based rural credit schemes collapsed and there was mounting pressure from the International Monetary Fund (IMF), for the government to liberalise the economy and to stop participating in input supply and produce marketing. The change of government from the United National Independence Party (UNIP) to the Movement for Multi-party Democracy (MMD), in 1991 facilitated the government's exit from active participation in the sector.

The removal of subsidies resulted in a failure by most farmers to purchase inputs like fertiliser and seeds at the market price and therefore the average crop yield per hectare reduced. On the environmental front, the continuous high input maize mono-cropping left Zambian soils seriously degraded throughout the low to moderate rainfall zones of Central, Southern and Eastern Provinces (Haggblade and Tembo, 2003). Heavy application of nitrogen fertilizers, coupled with little attention to organic matter, resulted in serious soil degradation – erosion, acidification, reduction in soil organic matter and the creation of plough pans across much of Zambia's maize belt (ibid.). The high cost of inputs and the degradation of soils further resulted in most farm households failing to produce enough food to last up to the next harvesting season. This situation was compounded in some instances by the HIV/AIDS epidemic, which increased morbidity and reduced farm labour. This desperate situation prompted some International and local Non Governmental Organisations (NGOs) to promote alternative methods of farming that were both less costly in financial and environmental terms. These methods are collectively referred to as Low External Input Sustainable Agriculture (LEISA).

The adoption of promoted LEISA practices among the farming community in Zambia has been a challenge. One of the reasons for this is that even though use of chemical fertilisers for crop production was only intensively promoted during

the agricultural revolution of the 1970s, it has been very difficult for the farming community to revert to traditional farming practices. The reintroduction of LEISA can therefore be regarded as an innovation in this sense to the targeted adopters. It is therefore important that the organisations promoting LEISA use communication strategies that can increase the adoption rate. Communication can play a key role in increasing the rate of adoption of LEISA by the targeted adopters.

Chapter 1

BACKGROUND

1.0 Introduction

This report is based on the student's attachment at Participatory Ecological Land Use Management (PELUM) Association Regional Desk, based in Lusaka, from the 14th May 2008 to the 25th July 2008. The attachment was done in partial fulfilment of the Master of Communication for Development (MCD) Programme offered at the University of Zambia. PELUM Association is a regional network of Civil Society Organisations (CSOs) in Eastern, Central and Southern Africa that work in the area of participatory ecological land use management. The MCD Programme supports the use of communication in fostering development. Communication for Development rests on the premise that successful rural development calls for the conscious and active participation of the intended beneficiaries at every stage of the development process; for in the final analysis, rural development can not take place without changes in attitudes and behaviour among the people concerned. It involves the practice of systematically applying the processes, strategies and principles of communication to bring about positive social change.

The report is a result of a descriptive study undertaken by the student during the attachment period. The overall objective of the study was to establish the communication strategies used by PELUM Association Regional Desk in promoting the adoption of Low External Input Sustainable Agriculture (LEISA) among its member Civil Society Organisations and the rural small scale farmers in Zambia. The student examined the effectiveness of the communication strategies and their weaknesses and strengths. This examination was based on communication concepts and related theories, in particular, the diffusion of innovation theory. As already stated, in this study, LEISA was treated as an

innovation or a new idea that was being introduced for adoption to the small scale farmers. Smallholders, also commonly referred to as small scale farmers, are defined in Zambia as those farming less than 20 hectares (Haggblade and Tembo, 2003). Based on the conceptual and theoretical framework, the student argues that LEISA is one of the ways in which farmers, in particular resource constrained small scale farmers, can increase their food production and reduce food insecurity and the associated problems such as malnutrition.

The report also highlights some of the major findings of the study. The study makes recommendations based on the findings in relation to what could be done to improve the way PELUM Association Regional Desk is communicating information on LEISA among Civil Society Organisations and small scale farmers in Zambia.

1.1 Outline of the Report

This report is made up of six chapters. In chapter 1 the student introduces the subject of study, gives background information on Zambia, the place of attachment as well as the rationale for conducting this study. In chapter 2 the methodology that was followed is explained, including some of the challenges and opportunities that were encountered in the process of data collection.

Chapter 3 gives the conceptual definitions and theories relevant for the study. The main concepts of communication, development and Low External Input Sustainable Agriculture (LEISA) are explained. In addition, the theory of Diffusion of Innovation is also explained. Chapter 4 reviews literature on the adoption of LEISA practices among farmers.

Chapter 5 outlines and discusses the findings of the study. In chapter 6 the student gives recommendations and concludes the report.

1.2 Objectives of the Attachment

The attachment was conducted with the main aim of according the student an opportunity to be well acquainted with the operations of a development organization that uses communication as one of the ways in which to carry out its development objectives. The attachment was also an opportunity for the student to carry out an independent study of the communication tools used by the organisation of attachment. The overall and specific objectives of the descriptive study are stated in 1.2.1 and 1.2.2 below.

1.2.1 Overall Objective

To study the communication tools used by Participatory Land Use Management (PELUM) Association Regional Desk (RD) in promoting adoption of Low External Input Sustainable Agriculture (LEISA) among its member organisations and small scale farmers in Zambia.

1.2.2 Specific objectives

The specific objectives were to:

1 Establish what communication strategies Participatory Ecological Land Use Management (PELUM) Regional Desk was using in promoting Low External Input Sustainable Agriculture (LEISA)
2 Determine the effectiveness of the communication strategies
3 Establish weaknesses and strengths of the communication strategies

4 Make recommendations based on the findings

1.3 Zambia's profile

1.3.1 Geographical characteristics

Zambia is a landlocked country located on a high plateau in Central Africa between latitudes 8 and 18 degrees South of the Equator and between longitudes 22 and 36 degrees East of Greenwich. It is surrounded by 8 neighbouring counties; Malawi and Mozambique in the east , Democratic Republic of Congo (DRC) (Kinshasa) in the north, Tanzania in the north east, Angola in the west, Namibia, Botswana and Zimbabwe in the south (figure 1) . The country covers a total area of 752,620 square kilometers out of which 740,724 square kilometers are land and 11,890 square kilometers water.

Zambia's plateau rises in the east with elevations ranging from 915-1,520 metres. Higher altitudes are attained in the Muchinga Mountains. Zambia's highest point of 2301 metres is located in the Mafinga Hills and the lowest point of 329 metres is at the Zambezi River. The country has a number of water bodies. Lake Bangweulu, parts of lakes Mweru and Tanganyika and the Luangwa and Chambeshi rivers are located in the East. The Zambezi River which drains much of the western part of the country forms a large part of Zambia's southern boundary. The Victory Falls and the Kariba Dam, both on the border with Zimbabwe, are part of the Zambezi in the South (Agregheore, 2006). The Kafue River drains west-central Zambia, including the Copperbelt in the north (ibid.). Zambia has a number of swamps or flats where a lot of wildlife is concentrated (ibid.). The country also possesses four major valleys: the Zambezi, the Kafue, the Luangwa and the Luapula.

Figure 1.1 Map of Zambia showing its neighbours

Source: http://media.maps.com/magellan/Images/ZAMBIA-W1.gif

1.3.2 Demographic, social, political and economic characteristics

Zambia has a population of 11, 900, 000 (Population Reference Bureau, 2006, p 6) and a population growth rate of 1.654 per cent (Central Intelligence Agency, 2008). The population is very youthful; 45 per cent of the population is below the age of 15 years. Zambia is one of Sub-Saharan Africa's most highly urbanised

countries. Almost one-half of the country's population is concentrated in a few urban zones strung along the major transportation corridors, commonly referred to as the line of rail, while rural areas are under populated and under developed. Life expectancy at birth is 37 years old. The HIV/AIDS prevalence rate among the adult population (15-49 years) was 17 per cent in 2006. However, the 2007 Zambia Demographic Health Survey (ZDHS) released in May, 2008 indicates that the HIV prevalence in Zambia has reduced from 15.6 per cent in 2001 to 14.3 per cent in 2007 (Kabange, 2008). According to the survey, the prevalence in rural areas decreased from 10.8 in 2001 to 10.3 in 2007 while it slightly increased in urban areas (ibid.).

In 2006, Zambia was ranked 165 out of 177 countries on the United Nations Development Programme (UNDP) Human Development Index (HDI). She is one of the least developed countries in the world. About 67 per cent of the total population lives on less than one United States Dollar (US$) per day. The incidence of poverty is higher in rural areas compared to urban areas. However despite these brink statistics, Zambia's economy has experienced modest growth in recent years, with real gross domestic product (GDP) growth between 5-6 per cent per year in the period 2005 to 2007 (Central Intelligence Agency, 2008). In fact GDP per capita (PPP) was estimated to be US$1300 in 2007 compared to US$943 in 2004, for example. This positive development has been attributed to the steady increase in copper output since 2004, higher copper prices and foreign investment (ibid.). Zambia's bumper harvest in 2007 is also said to have helped to boost GDP, agricultural exports and contain inflation (ibid.).

Zambia was formally known as Northern Rhodesia. Northern Rhodesia was administered by the British South Africa (BSA) Company from 1891 until it was taken over by the United Kingdom in 1923 (ibid.). She was part of the Federation of Rhodesia and Nyasaland and gained its independence from the United

Kingdom in 1964. At independence Zambia had a strong economy based on copper mining. According to Smaldone (1991), copper accounted for 40 to 50 per cent of Zambia's GDP between 1964 and 1974. The high revenues from copper exports were used for the development of the manufacturing and agricultural sectors as well as the provision of social services such as education and health. In the agricultural sector the government policy promoted the provision of inputs and credit. The policy was largely biased in favour of maize production throughout the country despite the different agro-ecological zones in the country. The decline in world copper prices in the 1970s resulted in loss of revenues and this had a very negative impact on the economic growth of the nation. Between 1975 and 2004 Zambia registered negative (- 2.1 per cent) annual growth rate based on GDP per capita. In 1975 GDP per capita was 1, 557 PPP US$ compared to 943 PPP US$ in 2004.

1.3.3 Climate, vegetation and agro-ecological zones

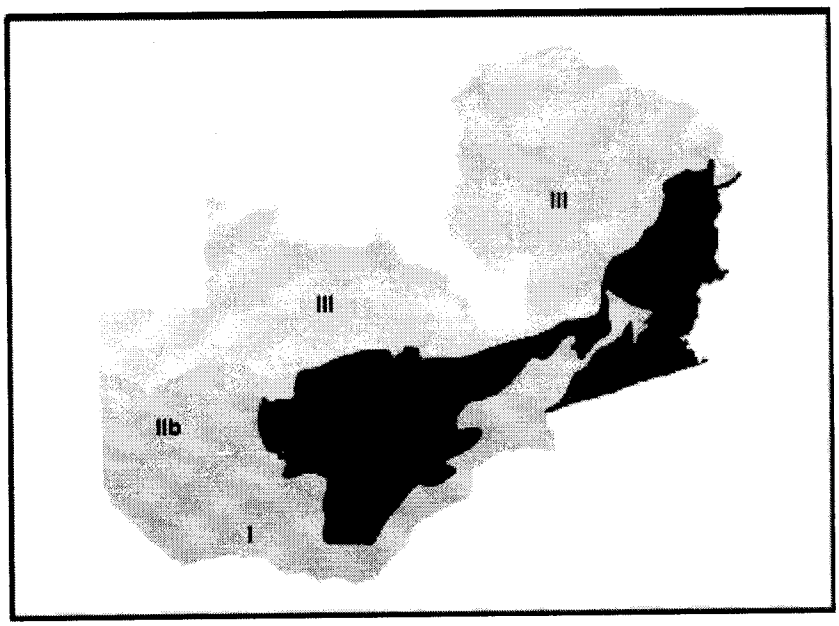
Zambia's climate is sub tropical with three distinct seasons: a cool and dry season from May to August when temperatures vary from around 14 to 26 degrees Celsius during the day and from 10 to 25 degrees Celsius at night; a hot and dry season from September to November; and a warm and wet season from December to April. The hottest month is October (absolute maximum temperatures of 40°C in the shade) and the coldest is July (minimum temperatures of about 5°C or less at night). This climate is moderated by the relative high altitude (average of 1,200 meters above sea level).The vegetation is mainly savannah woodlands and grasslands.

There are three agro ecological zones called regions I, IIA, IIB and III. Region I is a narrow band, lying mostly in the Southern and Western provinces, comprising the Gwembe, Zambezi and Luangwa valleys. It is sparsely populated

with low and uneven distributed rainfall of less than 700 millimeters per year and the length of the growing season is about 90 days. This zone is mainly dominated by the livestock enterprises despite frequent animal disease outbreaks. The area has potential for irrigated agriculture because of the availability of water in perennial rivers, lakes and streams throughout the year. However, this potential has largely remained unexploited. Region II is divided into two sub regions, IIA (Central part of Western Province) and IIB (Northern part of Southern province, most of Lusaka province, non-valley areas of Eastern province and Central parts of Central province). Region II is a well-watered zone with deep well aerated loamy soil of high agricultural potential. It has 800-1000 millimeters of rainfall per year and a growing season of 90 to 120 days. This is the area that is largely occupied by large scale commercial farmers who cultivate cash crops such as cotton, tobacco and sugar cane. Region III, in the north of the country (Northern part of Western, Copperbelt, all of Northern province, Luapula, Northern part of Eastern province and North Western province). The region has adequate rainfall of above 1000 millimeters annually and growing season of more than 120 days, but the productivity of the soil is limited because of heavy leaching which gives rise to acid soils. The crops that are mostly suitable for this zone are tuber crops such as cassava, sweet and Irish potatoes.

Zambia has a dualistic system of agriculture, with large scale commercial farmers and a large population of subsistence farmers also known as small holder farmers (Elliot and Perrault, 2006, p. 228).

Figure 1.2 Zambia's Agro-Ecological Zones



Source: http://www.ceepa.co.za/docs/POLICY%20NOTE%2027.pdf

1.3.4 Administrative structures and communication networks

Zambia is divided into nine provinces. These are Luapula, Northern, North western, Western, Copperbelt, Eastern, Central, Lusaka and Southern provinces. The country has 72 districts and the capital city is Lusaka.

The country's road network is relatively good in urban areas. The major roads include the Great East Road which runs from Zambia to Malawi in the East and the Great North road which runs from Livingstone to Nakonde and Tanzania in the North. These routes are highly used for the transportation of imports and exports from the Country. Zambia also has a railway line which runs from Livingstone in the South to Chililabombwe in the North West. This railway line was a major route for the transportation of copper ore from the Copperbelt. The

line has been under private concession since early 2000. This has resulted in poor services and the loss of business to road transporters.

1.4 Zambia's food security situation

Zambia is marginally self sufficient in food, with irregular maize surpluses, and suffers from internal food distribution problems because of poor road infrastructure and marketing facilities (Ellliot and Perrault, 2006, p. 228). Food insecurity is a chronic problem in Zambia despite the country's vast land and water resources essential for food production. Most Zambians do not enjoy the right to adequate, safe and nutritious food of their preference. Rural communities that entirely depend on own food production are the worst affected by the problem of food insecurity. This is manifested by high malnutrition incidences, for example, in 2004 only 43 per cent of the children in urban areas were stunted, compared to 53 per cent in rural areas (Central Statistics Office, 2004).

The problem of food insecurity is complex. It is caused by various social, economic, political and environmental factors. One of the underlying causes is the use of environmentally and economically unsustainable farming methods that have reduced average crop yields over the years making most farming households unable to produce enough food to last the whole year. On average most rural households can only produce food that lasts for 4 months or less from their own production per year. Such households usually employ various coping mechanisms during the lean period of the year which average 6-8 months by reducing the number of meals or resorting to selling their labour for income or food.

In recognition of the negative effects that environmentally and economically unsustainable production methods have had on agriculture output and rural livelihoods, DanChurchAid (DCA) and local partners such as Participatory

Ecological Land Use Management (PELUM) Association, have embarked on promotion of more sustainable agricultural practices such as organic farming and conservation farming. These efforts are meant to reduce dependence on expensive and unaffordable external inputs such as inorganic fertilisers and pesticides, by most small scale farmers. They are also meant to curb environmental degradation and promote conservation of the natural resources for posterity.

1.5 Statement of the problem

The adoption of Low External Input Sustainable Agriculture (LEISA) has been generally slow among small scale farmers despite the many advantages that it presents to the environment and food security situation for the resource poor households. This low adoption can be attributed to various factors some of which are high labour requirement for LEISA techniques, availability of subsidised inputs for selected farmers, government extension services' emphasis on High External Input Agriculture (HEIA) as well as the reluctance by farmers to change their farming habits due to limited information and knowledge on the benefits and requirements of LEISA.

According to Kessler and Moolhuijzen (1994) labour shortage can be a bottle neck in the application of LEISA techniques, most of which are very labour intensive, especially for small families, or those with migrant absentees (female-headed households). Farmers decisions to invest extra labour in LEISA techniques is influenced by the expected benefits in relation to and the availability of alternative sources of income (ibid.) High labour requirements of LEISA are found to conflict with social development activities such as children's and adult education and women's emancipation or activities such as attending to the sick and funerals mostly due to the HIV/AIDS epidermic. The additional labour

requirements for LEISA typically stem from activities such as preparing compost, mulching, manure application and weeding. So farmers' incentives for adoption hinge critically on the availability and opportunity cost to labour (Haggblade and Tembo, 2003).

As part of its poverty reduction programme the Zambian government through the Ministry of Agriculture and Cooperative (MACO) has reintroduced subsidized inputs for what are termed vulnerable but viable farmers. This programme is referred to as the Fertiliser Support Programme (FSP). The programme mainly supplies inputs such as maize seed and fertilisers. Farmers are normally expected to acquire the inputs through registered cooperatives after making a down payment of 50 per cent. This programme leaves out farmers who are very vulnerable and can not afford to pay 50 per cent down payment. As a result the food security situation still remains precarious for the rural poor. The programme has also been said to promote corrupt practices mainly by the government officials entrusted to distribute the inputs. Most often than not, the bags of fertilizer and seeds have been found to be underweight due to the siphoning off of part of the content allegedly by government distribution agents.

The government policy on agricultural extension in Zambia is biased towards Heavy External Input Agriculture (HEIA). This is mainly because the overall government agricultural policy is tailored more towards the needs of commercial agriculture which relies on heavy application of fertilizers, insectides and herbicides for increased production. The fact that more resource poor farmers can not afford this form of agriculture is mostly overlooked. This has created a situation where food production is highly dependent on the availability of chemical fertilisers even when poor households can not afford to buy chemical fertilizers based on the market price. As a result, most households grow crops without any chemical fertilisers. In some cases farmers are not even aware of

alternatives such as LEISA which can enable them to produce relatively reasonable yields even without using chemical fertilizers. Pretty and Hines (cited in: Haggblade and Tembo, 2003) argue that most assessments of low input, ecologically friendly agricultural technologies report substantial increases in farmer yields, often double those achieved by conventional methods. Human capacity development and increased knowledge and information in LEISA are therefore required.

Information, education and training allow farmers to make use of new farming knowledge and technologies (Crowder *et al.*, 1998). Farmers' knowledge and information need to be constantly updated about environmentally sound farming practices so that the natural resource base is maintained for food production for future generations (ibid.). Field personnel from government, NGOs and agribusiness also need up-to-date knowledge and information about improved farming in order to adequately support farmers (ibid.). The essential ingredients that farmers and the people who support them need for sustainable food security can be best provided by the effective use of communication tools. Effective use of communication tools by the promoters of LEISA can aid in its adoption by the small scale farmers in Zambia, most of whom are rural based, resources poor and food insecure.

1.6 Rationale

This study is important in that it will provide more insight into the communication strategies employed by Participatory Ecological Land Use Management (PELUM) in promoting Low External Input Sustainable Agriculture (LEISA). The focus of the study will be on how PELUM communicates information on LEISA to its member organisations and through them to small scale farmers. The outcome of the study will therefore establish the

effectiveness of PELUM's communication strategy for LEISA and ascertain whether there is need for some improvement or not. This information will be useful for PELUM as well as other DanChurchAid (DCA) partners who will learn from PELUM's experience. It will also help DCA to provide targeted and relevant support in form of capacity building to partners on communication strategies that can be used in promoting LEISA.

The study will also contribute to the body of knowledge by providing insight into the communication tools and related theories employed by some civil society organisations in communicating development information in Zambia.

1.7 Place of study

The study was conducted from the Participatory Ecological Land Use Management (PELUM) Association Regional Desk which is based in Lusaka, Lusaka Province. Lusaka is the capital city of Zambia. The study included physical visits to the PELUM Association Zambia Country desk and various offices of PELUM Association Zambia member organisations based in Lusaka city. Field visits were also conducted to Chilanga constituency in Kafue district, Lusaka Province. PELUM Association Zambia member organisations with headquarters outside Lusaka were also included in the study through electronic (e) mail and telephone contact.

1.8 PELUM Association

Participatory Ecological Land Use Management (PELUM) Association is a regional network of two hundred and six (206) Non-Governmental Organisations (NGOs) in Eastern, Central and Southern Africa, working towards sustainable agriculture, food security, and sustainable community development in

the region. The Association was launched in 1995 and is currently working in Botswana, Kenya, Malawi, Lesotho, Rwanda, South Africa, Tanzania, Uganda, Zimbabwe and Zambia. The Association was formed with a view of facilitating learning, networking and advocacy in sustainable agriculture, natural resource management and household food security.

1.8.1 Origins of PELUM Association

Participatory Ecological Land Use Management (PELUM) Association was launched in 1995 by twenty-five (25) founding members. According to Mukute (2004, p. 5), "The emergence of PELUM was inspired by the harsh conditions in which smallholder farmers operated. Some of the issues were....depleted soils, agricultural techniques and technologies promoted by extension workers who were trained to promote high external input agriculture....food insecurity was increasing, natural resources such as land and water were getting degraded...." PELUM Association was therefore formed to unite NGOs in rural and sustainable development (ibid.). The main reason for forming the organisation, according to a founding member, was to have a forum where good practices could be shared and a platform where NGOs in east and southern Africa could form opinion and influence the development discourse on agricultural and rural development (ibid.). The Association's regional office was initially based in Harare, Zimbabwe. It relocated to Zambia in 2004.

1. 8.2 PELUM Association's focus

The foci of Participatory Ecological Land Use Management (PELUM) Association's work, when it was founded, were sustainable agriculture and rural development (ibid.). The main aim was to build capacities of its members in sustainable agriculture, organic farming and land use practices (PELUM, 2005).

According to PELUM (ibid.) new issues emerged since that time that resulted in PELUM Association devoting increasing attention and energy to policy influence as a strategic intervention. PELUM Association, since 2002, has been putting a lot of effort in advocacy interventions aimed at influencing policy formulation, with a view of coming up with good policies (ibid.). This strategic shift was prompted by the Association's realisation that poor policies and policy formulation mechanisms were an important factor in exacerbating the poverty situation and a cause of food insecurity in the east, central and southern Africa region (ibid.). PELUM Association therefore believes that an improved and more responsive policy framework is crucial in transforming lives and promoting food security (ibid.). This strategic shift has not, however, diminished the significance of capacity building of PELUM Association members in sustainable agriculture, organic farming and land use practices (ibid.). PELUM's strategies are training, research, documentation, information sifting and dissemination of good practices, networking and advocacy (Mukute, 2004).

1.8.3 PELUM Association organisational structure

The Participatory Ecological Land Use Management (PELUM) Association structure is hierarchical. However, Mukute (2004) argues that the structure and systems of PELUM were designed to provide for accountability, participation and transparency at country and regional levels. It consists of the Triennial General Meetings (TGM), Regional board, Regional desk, Country boards, Country desks, and Country Working Groups in order of seniority (figure 3).

The PELUM Association structure evolved from a simple network to a complex network of networks (ibid.). The Association has organs at the regional, sub-regional, country, sub-country, local and thematic levels. Until 2005 PELUM used to hold Biannual General Meetings (BGMs) every two years. The BGM was

therefore the highest organ of the Association from inception until the year 2005 when it was decided that Triennial General Meetings (TGMs) would be held every three years. The reasons for the change were the high costs related to holding general meetings every two years and the importance of synchronising the holding of the general meeting with PELUM Regional Desk's strategic planning period which was three years.

1.8.3.1 Triennial General Meeting (TGM)

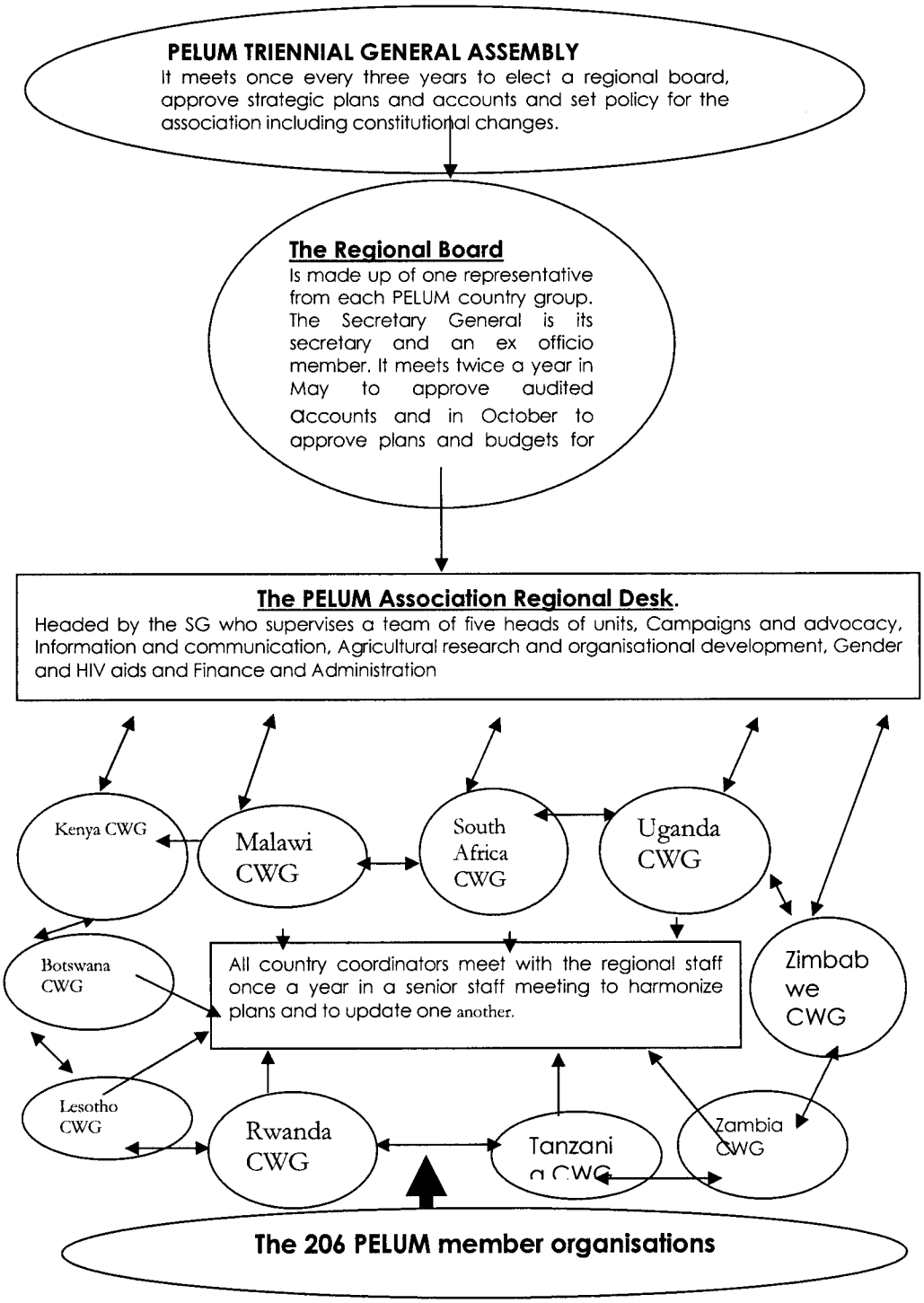
The TGM, which replaced the BGM is held every three years. It is the supreme law making body of the Association and provides the strategic direction. It is a place of self renewal and defining the vision and mission of PELUM Association It mandates the Regional board and Regional Desk to implement policies. A minimum of three selected full member organisations representative from each CWG attend the TGM from each PELUM Association member country (ibid.).

1.8.3.2 Regional board

The Regional board is made up of the chair-persons of the Participatory Ecological Land Use Management (PELUM) Country Working Groups (CWGs). The TGM elects the board chairperson, the vice chairperson and treasurer who form the executive of the board. The Secretary General of PELUM Association is an ex-officio member of both the board and the executive committee. The board is responsible for policy and overall management of the association. It has the mandate to develop policies, approve annual work plans and accounts and ensure that key functions of the association are carried out. It also directs and monitors programmes and ensures that the essential tools and resources for translating PELUM Association's vision into programmes are available and efficiently and effectively utilised. The board is made up of subcommittees.

These are: learning and networking; advocacy; personnel; finance and fundraising; and the executive.

Figure 1.3 PELUM Association organisational structure



1.8.3.3 Regional Desk (RD)

The Participatory Ecological Land Use Management (PELUM) secretariat, also referred to as the Regional Desk, serves as the implementation arm of the regional board. It translates policies into actions and reports on its activities to the regional board. The regional desk is also accountable to PELUM members at the Country Working Group.

The Regional Desk is headed by a Secretary General who is appointed by the Regional board. The Secretary General is responsible for implementation of PELUM policies and plans. He/she also facilitates liaison between the Regional Desk and the Regional board as well as other stakeholders. The substructure at the Regional Desk level includes five units; Management, Coordination and Fundraising unit, Information and Communication unit, Campaign, Advocacy and Lobbying unit and Research and Development unit.

1.8.3.4 Country Working Group (CWG)

All members of Participatory Ecological Land Use Management (PELUM) Association in a PELUM Association member country form a Country Working Group (CWG). A CWG is formed when there are at least four full PELUM members in a country (Mukute, 2004). CWGs have been established in Botswana, Kenya, Lesotho, Rwanda, South Africa, Malawi, Tanzania, Uganda, Zambia and Zimbabwe. The CWG makes policy at country level and elects a chairperson, who leads the CWG and sits on the Regional board. The CWG also elects other board members to assist the chairperson at country level. The CWG is supposed to be the organ for participatory action, thinking, reflecting, learning and implementation of development programmes. It develops a constitution, policy and plans at country level.

1.8.3.5 Country Desk (CD)

Some Participatory Ecological Land Use Management (PELUM) Country Working Groups (CWGs) have established country secretariats, also referred to as Country Desks. Countries with secretariats include Lesotho, Kenya, Tanzania, Uganda, Zambia and Zimbabwe. The secretariats are headed by a Country Desk Coordinator. The generic organisational substructure at this level includes an information officer, financial and administration officer and a programme officer. The CD implements policy decisions at country level, organise and hold meetings with members at least once a year to plan, reflect, review and re-plan; fundraise for country activities; coordinate country activities and communicate with members and the Regional Desk; and support the social capital development of small scale farmers organisations as determined by the CWG.

1.8.4 Membership to PELUM Association

The Association has a two tier membership; membership to the Country Working Group and by default membership to the regional body. Membership to the Country Working Group is broken down into four categories: full, associate, individual and sponsor. Full membership includes voting rights and is open to Non-Governmental Organisations (NGOs) that have been operating in the East and Southern African region for a minimum of two years. Associate membership does not include voting rights. It is open to international NGOs, networks, governmental departments, parastatals and newly established NGOs. Sponsor membership is also non-voting. It is open to any organisation or person who wishes to sponsor the activities of the Association. Individual membership is open to those that share the values of PELUM and would like to be part of the Association.

1.8.5 PELUM Association's vision

Participatory Ecological Land Use Management (PELUM) Association's vision is "to see communities in east and southern Africa self organised to make choices towards an improved quality of life that is socially, economically and ecologically sustainable" (PELUM Association, 2005, p. 5). This vision was adopted at the 2002 Biennial General Meeting (BGM) and was slightly amended at the 2005 BGM.

1.8.6 PELUM Association's Mission

Participatory Ecological Land Use Management (PELUM) Association's mission is "we are a civil society network in East, Central and Southern Africa, passionate about equity, people driven development and integrity of creation, working towards sustainable local community empowerment, food security and prosperity by facilitating learning, networking and advocacy" (ibid. p.4). This statement was adopted in 2004 at a regional board meeting.

1.8.7 PELUM values

Participatory Ecological Land Use Management (PELUM) Association has 13 values that it believes are consistent with its mission and important in achieving its vision. The values were developed during the conception phase of the organisation (Mukute, 2004). They guide how the organisation operates and determines whom it can partner with. These values are:

1. **Action learning**: Growing from experience for improved action and impact in the future thorough action (do), reflection (feel), learning and planning (think)

2. **Creativity and innovation**: valuing and promoting the generation of solutions to problems in creative and innovative ways as a fundamental requirement for growth and development

3. **Commitment to action and impact**: Doing the things that help communities to bring about sustainable social change

4. **Empowerment of land users**: Seeking to facilitate the empowerment of the poor and marginalised people, especially smallholder farmers in east and southern Africa so that they are listened to, respected and have enough food and means to lead better lives

5. **Focus on causes**: looking at the underlying causes and not symptoms

6. **Gender sensitive development**: Lobbying for gender and inter-generational equity and equality

7. **Holistic and integrated development**: Taking into account economic, social, structural and ecological interrelationships

8. **People-centred development**: Carrying out development that is rooted in the interests, hearts and minds of the communities and believing that people are capable thinking and transforming their livelihoods

9. **Regionalism**: Valuing and fostering the spirit of regionalism as a strategic alliance harnessing the strengths residing in countries of the regions. This is the strategic alliance and synergy on which PELUM is built

10. **Respect for indigenous knowledge**: Appreciating and building on local knowledge systems that have evolved over several centuries of practice and thought while challenging over dependence on the "Western hill of knowledge"

11. **Support for the struggle against exploitative practices**: Fighting against oppressive policies and practices, especially those bearing on smallholder farmers in east and southern Africa

12. **Sustainability**: Responsible management of natural, physical, human and social capital in a manner that maintains or enhances their productive potential for current and future generations

13. **Transparency and positive self-criticism**: Being accountable to the membership and to the communities and self-criticism in order to learn from doing, reflect and re-plan accordingly

1.8.8 PELUM Association's strategic principles

Participatory Ecological Land Use Management (PELUM) Association's strategic principles are:

1. **Strategic social change**: Orienting training, education and advocacy towards social change
2. **Context specific**: context specific education, networking, training and advocacy
3. **Multiple realities**: recognising the existence of multiple realities and treating each situation according to its merits without compromising the values and principles
4. **Awareness building, knowledge and skills development, participation**: Implementing activities that revolve around awareness building, knowledge and skills development, participation and social action for change
5. **Responsive and proactive**: Conducting activities that respond to economic and socio-ecological contexts
6. **Complexity of living systems**: Recognising the complexity of living systems

1.8.9 PELUM's long term organisational objectives

1. To become a vibrant civil society organisation that influences agricultural and rural development policies in a way that positively impacts on the rural poor
2. To facilitate the social capital development of smallholder farmers so that they can readily speak for themselves

3. To shorten the learning curves associated with rural development and asset accumulation by the poor and marginalised communities
4. To develop the effectiveness of member organisations in helping the communities they work with to improve their livelihood and reduce poverty
5. To stimulate farmer to farmer learning and to inspire farmers to experiment and innovate in empowering ways
6. To make development more effective and more equitable among men, women and children, and for people infected with and affected by the HIV/AIDS pandemic; promoting such development by seeking greater cooperation between North and the South
7. To enhance the quality of the environment through sustainable development practices, with organic agriculture and minimal external inputs as key strategies

1.9 PELUM Association's 2006 to 2008 strategic objectives

Participatory Ecological Land Use Management (PELUM) Association Regional Desk operates on the basis of a three year strategic planning process. Every three years a strategic plan is drawn up for the purposes of fundraising for operations of the RD and for outlining in a logical manner the objectives to be pursued and the related activities to be implemented in order to achieve the objectives. The three year strategic plan is prepared by the RD and presented to the Triennial General Meeting (TGM) for approval. During the student's attachment PELUM RD was still implementing its 2006-2008 which was approved for implementation during the 2005 Biennial General Meeting (BGM). Outlined below are the overall and specific objectives of the plan.

1.9.1 Overall objectives

1 To develop PELUM Association as a reputable member-driven, relevant and learning organisation that is at the forefront of bringing about strategic improvements in member, Country Working Groups (CWG) and small farmer organisations in a principled manner.
2 To build the capacity of members, CWGs and farmer organisations to campaign, advocate and lobby for food and seed security, fair trade and sustainable development
3 To facilitate and develop a culture of learning and networking among members and CWGs by increasing their access to relevant knowledge and appropriate technology sites
4 To enhance the culture and use of information and communication technologies for development and to project a fair and positive image of the Association
5 To make all organisational and developmental interventions gender-sensitive and responsive so that both men and women meaningfully benefit from PELUM work
6 To mitigate the negative impact of HIV/AIDS at workplaces and in communities
7 To facilitate the growth and development of community-based small scale farmer organizations
8 To attract and retain the interest of funding partners in PELUM's values, mission and visions through relevant, adequate and quality work

1.9.2 Specific objectives

1 To facilitate the development of PELUM as a learning network and place it at the forefront of rural development

2 To foster the development of appropriate leadership, governance and management within PELUM Association for quality results

3 To strengthen CWGs and enhance their capacity in dealing with sub-regional initiatives

4 To build capacity of members and CWGs to campaign, lobby and advocate on the above issues

5 To carry out policy analysis and research on both existing and emerging policies based on member priorities at community, national and international levels

6 To contribute to international and regional policy development and changes that promote the interests of PELUM member countries

7 To build CWGs capacity to organise and implement needs-based training

8 To organise and run strategic workshops, which contribute towards the building of PELUM as an advocacy network

9 To develop partnerships that draw on and build good science and good farmer practices

10 To actively promote organic farming among member countries

11 To continue building a strong case for sustainable agriculture and its significance in sustainable development

12 To strengthen communication within PELUM Association as well as establish a strong link with the media

13 To facilitate the development and use of communication systems and technologies within PELUM

14 Increased access to PELUM generated information for members and small farmer groups and the general public

15 To increase gender awareness among PELUM members and staff at the regional desk and country desks

16 To facilitate gender related skills development among regional desk, country desks and member organisations

17 The integration of gender aspects in all activities of the PELUM Association
18 To operationalise and popularize HIV/AIDS and development policy
19 To facilitate the organisational development of the small holder farmers' forum in Central, East and Southern Africa
20 To enhance the capacity of small scale farmers to advocate for issues affecting their livelihoods
21 To increase the capacity and effectiveness of PELUM Association to fund raise
22 To create and maintain cordial, reflexive relationships with funding partners

1.10 PELUM Regional Desk Programmes and activities

This section will highlight aspects of Participatory Ecological Land Use Management (PELUM) Regional Desk's programmes and related activities. The student will focus on activities that have been done in the recent past or scheduled to be conducted in the near future.

1.10.1 Information and Communication Unit

This unit through its programme aims to enhance the culture of communication, information sifting and purposeful use of information and communication technologies within the Association. The unit promotes networking and experience sharing among PELUM members, partners and the communities that PELUM Association serves. According to the PELUM RD 2006 to 2008 strategic plan (PELUM, 2005) the Information and Communication unit is responsible for production and publication of PELUM information materials such as desk calendars and business cards; production and dissemination of a magazine known as '*Ground Up*'; supporting access and utilization of Information, Communication Technologies (ICT) by the CWGs; enhance the generation and

dissemination of relevant regional development experiences and materials; collection of information on crucial development themes and other relevant issues within and beyond PELUM; and make the themes available to potential writers and identifying and maintaining an inventory of potential writers to *'Ground Up'* magazines. The focal point person for the unit is the Information and Communication Officer.

1.10.2 Campaign, Advocacy and Lobby (CAL) Unit

The CAL programme aims to build the capacity of the PELUM membership to identify pressing issues (at national, regional and global levels) that they can campaign, advocate and lobby around and engage with systems and structures that impact on the well being of the communities that they work with. The unit focus on coalition building and producing advocacy materials, setting and executing advocacy strategies. In the 2006-2008 PELUM RD strategic plan the CAL unit's main activities are: sifting information, compiling data and manuscripts, editing and sharing with stakeholders for their input; laying out, designing and distributing policy briefs, booklets and posters based on analysis of critical issues, and policy recommendations; supporting CWGs and East and Southern Africa Farmers' Forum (ESAFF) and the RD to effectively influence local, national, regional policies and practices; and conducting advocacy workshops with CDCs for capacity building; and monitoring and sharing tactics and campaign actions. The focal point person for this unit is the Campaign, Advocacy and Lobby Officer.

1.10.3 Agricultural Research and Organisational Development

This unit is responsible for drawing the link between the PELUM Association structures and deducing how these structures can be utilised in delivering on the

Association's vision. This unit is further responsible for propelling PELUM's agenda around agricultural issues with the main purpose of enhancing PELUM Association's support of organic agriculture in the face of competing ideologies such as the New Green Revolution for Africa (AGRA).

Some of the key activities in the 2006-2008 PELUM RD strategic plan under organisational development include: sharpening and strengthening the organisational development and operational capacity and effectiveness of the RD; promoting PELUM's institutional growth and relevance; supporting and strengthening the organisational development and effectiveness of the PELUM CWGs, CDs and ESAFF. The focal point person for this unit is the Agricultural Research and Organisational Development Officer. The current office holder is a volunteer from PELUM RD's partner organisation called Misereor, based in Germany.

1.10.4 Management, coordination, learning and networking unit

This unit is responsible for keeping the Association together and providing strategic leadership to the RD. The unit generates new ideas and is instrumental in fundraising for the Association. It coordinates the major events of the Association, in particular, the senior staff, regional board and Triennial General Meetings. The unit also undertakes research with the aim of generating new knowledge and communicating PELUM's thinking on various themes.

Some of the main activities in the 2006- 2008 PELUM RD strategic plan are: publicising PELUM by distributing relevant PELUM publications and materials; documenting and publicising lessons from farmer-researcher meetings; documenting and disseminating experiences emerging from the region around organic farming; developing and promoting understanding of indigenous food.

The focal point person for this unit is the PELUM Secretary General, who is closely assisted by a volunteer from Voluntary Service Overseas (VSO).

1.10.5 HIV/AIDS and Gender Unit

This unit was established due to the realisation that HIV/AIDS and gender highly impacted on the efforts that PELUM Association was making in its development work. The unit was established following the 2005 PELUM Biennial General Meeting (BGM) with the purpose of mainstreaming HIV/AIDS and gender in PELUM's work.

The main activities for the unit as stipulated in the 2006-2008 PELUM RD strategic plan are: assessing the extent and effect of gender mainstreaming among PELUM members and providing relevant support to address identified gaps; training to sharpen gender mainstreaming at the RD and within PELUM to ensure compliance with the members' aspirations and contexts; conducting gender impact assessment studies at the CWG level; and assessing the extent and effect of HIV/AIDS mainstreaming among PELUM members and providing relevant support to address identified gaps. There is currently no focal point person for this unit.

Chapter 2

METHODOLOGY

2.0 Introduction

This chapter discusses the methodology the student used in the research. It highlights the research questions and the methods that were followed.

2.1 Research Questions

The study sought to answer the following questions:

1 What communication tools does Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) use in communicating information on Low External Input Sustainable Agriculture (LEISA) among its member organisations and small scale farmers?
2 What do the targeted audience (member organisations and small scale farmers) think about information obtained through PELUM Association RD? Is it beneficial or not?
3 How do the targeted audience use information obtained from PELUM Association RD? Do they find it useful?
4 How can PELUM Association RD's communication strategy be made more effective?

2.2 Research methods

Three methods were used in data collection. This triangulation was done in order to enhance the quality of the research. The methods employed were both

quantitative and qualitative. In the quantitative method information was obtained from respondents using scheduled structured interviews based on an established questionnaire. A questionnaire is a set of questions with fixed wording and sequence of questions (Bless and Achola, 1988, p. 82). In the qualitative method information was obtained from respondents using non-scheduled structured interviews in form of in-depth interviews and focus group discussions (FGD). The in-depth interviews were based on an interview guide and the FDG on a prompt list prepared by the student. In-depth interviews were conducted with individuals with relevant information at PELUM Regional and Country Desk secretariats while F DG were conducted w ith some small scale f armers. The student also collected information based on participant observations made during active engagement in activities conducted by PELUM RD during the student's period of attachment. All research instruments i.e. the questionnaire; interview guides and prompt list were pre-tested before final use. (See attached questionnaire, interview guides and prompt list in the appendices).

2.2.1 Quantitative survey

Information was obtained from respondents using a questionnaire. The questionnaire contained both open and close ended questions and was distributed to members of staff in selected Participatory Ecological Land Use Management (PELUM) Association member organisations in Zambia through various methods. The questionnaire was either self-administered by the respondents or administered by the student. In some cases, the questionnaire was physically distributed at the work place of the respondent and picked up later by the student after it was filled in. In other cases, the student waited for the respondent to fill in the questionnaire upon receipt or actually read out the questions and filled in the responses from the respondents. The student also mailed the questionnaire through electronic (e) mail to some organisations. Electronic copies of the

questionnaire were sent to the PELUM Association contact person in the concerned organisation, who was urged to circulate the questionnaire to relevant employees. The student also contacted the organisations through phone calls to make sure that the e-mailed questionnaire was received by the right person in the organisation, in all cases except where it was difficult to do so. The recipients were informed to return the filled in questionnaire to the student after a stipulated period of time. The student also physically distributed copies of the questionnaire to some delegates who attended the PELUM Association Zambia Biennial General Meeting that was held at the In-Service Training Trust (ISTT) in Lusaka.

The self-administration method was employed in some cases because all targeted respondents to the questionnaire were presumed to be literate and because it was extremely difficult for some individuals to make time for personal interviews at their work places. It is also important to note that allowing the respondents to fill in the questionnaire at their convenience removes interviewer biases and increases validity. In order to increase the response rate, the student strongly appealed to the targeted respondents to fill in the questionnaire through constant reminders by phone calls. The student also pointed out to respondents the importance of answering all the questions so as not to spoil the questionnaire. However, since this and previous research experience by other researchers has proved that sometimes the response rate in self administered questionnaires is low, the student also resorted to personally administering the questionnaire in some instances. In total 60 were successfully physically distributed and 17 e-mailed to selected individuals in PELUM's civil society member organisations in Zambia. Of these 39 were successfully filled in and returned for analysis (see table 1 below).

Table 1.1 List of PELUM Association Zambia members with details of number, mode of distribution and successfully filled in questionnaires

	Member organisation	**Location of PELUM contact**	**Number of questionnaires sent by e-mail**	**Number of questionnaires physically distributed**	**Successfully filled in questionnaires**
1	Africa 2000	Lusaka	1	2	1
2	African Wildlife Foundation	Lusaka	1	0	
3	Archdiocese of Lusaka/Caritas Lusaka	Lusaka	0	3	3
4	Care International Livingstone	Livingstone	1	0	
5	Catholic Commission for Development/Caritas Zambia	Lusaka	1	2	2
6	Catholic Diocese of Ndola-Agriculture Development Programme	Ndola	1	0	
7	Cinci wa Babili Rural Devel. Project	Malole, Kasama	1	1	1
8	Golden Valley Research Trust	Lusaka	1	0	1
9	Green Living Movement	Lusaka	0	7	5
10	Harvest Help	Lusaka	0	2	2
11	HODI	Lusaka	1	0	1
12	In-Service Training Trust	Lusaka	0	6	3
13	Initiative for Sustainable Rural Livelihoods (ISRL)	Lusaka	1	1	1
14	Imiti Ikula empanga environment and Development organisation	Chinsali	0	1	1
15	Kaluli Development Foundation	Choma	1	0	

16	Keepers Zambia Foundation	Lusaka	1	2	2
17	Lutheran World Federation/Rural Community and Motivation Project (RCDM) Zambia Christian Refugee Service	Lusaka	1	2	2
18	Monze Catholic Diocese	Monze	1		1
19	Mthilakubili Agriculture Programme	Lundazi	0	0	
20	North Luangwa Wildlife Conservation Community development Project (NLWCCDP)	Mpika	0	0	
21	Organic Processors Association of Zambia (OPPAZ)	Lusaka		10	5
	OXFAM –Zambia (Kitwe)	Kitwe	1	0	
23	Programme Against Malnutrition (PAM)	Lusaka	0	3	2
24	Save Environment and People Agency (SEPA)	Zambezi	0	1	1
25	South Luangwa Area Management Unit (SLAMU-ZAWA)	Chipata	1	1	
26	Caritas Chipata	Chipata	0	1	1
27	Wildlife Conservation Society	Lusaka	2	0	1
28	Women for Change	Lusaka	0	9	1
29	World Vision International	Lusaka	0	5	1
30	Zambia Relief Development Foundation (ZRDF)	Lusaka	0	1	1
	Total		**17**	**60**	**39**

2.2.2 In-depth interviews

The student conducted in-depth interviews on a one to one basis with five members of staff at the Participatory Ecological Land Use Management (PELUM) Association Regional Desk. These included Joseph Ssuuna, the Secretary General, Marjorie Chonya Habasonda, the Information and Communications Officer, Annie Maina, the Campaign, Advocacy and Lobby Officer, Martin Bertram, the Agricultural Research and Organisational Development Officer and Daniel Peters, the Strategy Development Officer. These office bearers were targeted because they had valuable information which was important for the research.

The student also conducted in-depth interviews with two members of staff at the PELUM Association Zambia secretariat. These included Richard Chintu, the Country Desk Coordinator and Cannon Mukuma, the Project Officer. The PELUM Zambia secretariat is the main link in information flow from the Regional Secretariat to the member organisations in Zambia. It was therefore important to find out the views of the staff members on the effectiveness of this information flow. The student originally planned to conduct a focus group discussion with members of staff at PELUM Zambia secretariat; however, this plan was not carried out because there were only two officers with relevant information for the research. In-depth interviews were therefore conducted with the two officers, that is, the Country Desk Coordinator and the Project Officer.

2.2.3 Focus Group Discussions

The student conducted some focus group discussions (FGD) with selected small scale farmers, in Kafue district, Lusaka Province. Small scale farmers were included because they are the targeted audience for Participatory Ecological Land

Use Management (PELUM) Association information. The student specifically talked to small scale farmers in Munyeu, Shampule, Mwembeshi and Mubanga areas of Chilanga constituency, Kafue district. The farmers were organised for the FGD through the East and Southern Africa Farmers Forum (ESAFF), a farmers' forum whose formation was facilitated by PELUM Association a few years ago. 4 groups of small scale farmers were involved in the discussions. The student facilitated the discussions. The group at Munyeu consisted of members of the Munyeu Multipurpose Cooperative society. Five (5) individuals, four (4) males and one (1) female participated in the discussion. The group at Shampule consisted of 10 individuals (all males). The third group consisted of 16 individuals (12 males and 4 females). The last group at Mubanga consisted of several individuals (there were more women than men).

2.3 Sampling Procedure

2.3.1 Questionnaires

Purposive sampling methods were used in choosing the Participatory Ecological Land Use Management (PELUM) Association Zambia members to participate in the survey. The sampling frame was a list of all the PELUM Zambia members, which was made available in both hard and electronic copies to the student by the PELUM RD Information and Communication Unit. The student counter checked this information against a hard copy members' list made available by the Country Desk.

Based on the members' list the student purposefully restricted the physical administration of the questionnaire to PELUM Association members with headquarters in Lusaka. The reason for restricting the physical distribution of the questionnaire to organisations with headquarters in Lusaka was to avoid costly

financial expenses in terms of travel to other parts of the country. All 17 member organisations within the vicinity of Lusaka were targeted for physical distribution of the questionnaire. They were contacted by the student through telephone before actual distribution. During this initial contact some targeted respondents requested that the questionnaire be sent to them through electronic (e) mail rather than physically. This prompted the student to include the remaining 10 PELUM Association member organisations, with no headquarters in Lusaka, in the sample as well by sending the questionnaire through e-mail to the PELUM Association focal person in the organisation. The e-mail addresses used in this exercise were available in the members' list alluded to above. The focal person was requested to circulate the questionnaire to other employees in the organisation. Two member organisations with headquarters outside Lusaka were excluded even under this expanded sampling criterion because they either did not have an e-mail address or their address was dysfunctional. The student also used the PELUM Association Biennial meeting as an opportunity to physically distribute questionnaires to non-Lusaka based PELUM Association Zambia members who attended the meeting.

At the organisational level, convenience sampling was done. Copies of the questionnaire were distributed to members of staff in PELUM member organisations, based on the choice of the PELUM focal point person. However, in all cases, the student stressed that those with responsibilities directly related with promotion of LEISA among small scale farmers in rural areas were the highly preferred respondents. These individuals were targeted because they are the intended audience for PELUM's information sharing communication strategy. They are the direct audience for PELUM publications and other communication activities. It was therefore important to find out if they found the publications and other communication materials beneficial in their work with grass-root small scale farmers who their organisations work with. In many cases

the head of the organisation decided on who eventually responded to the questionnaire. In other cases the student purposively approached certain individuals that were in the best position to respond to the questionnaire based on their job titles.

2.3.2 In-depth Interviews

The student purposively included all those that were deemed to have relevant information to the study at the PELUM Regional and the Country Desks. The Information and Communications Officer at the Regional desk and the Country Desk Coordinator were instrumental in pointing out who would be relevant for the in-depth interview within their respective organisations.

2.3.3 Focus Group Discussions

Areas in Kafue district were purposively selected for focus group discussions (FGD). This is because this was the area where it was possible for PELUM Regional Desk to organise farmers through the Eastern and Southern Africa Farmers' Forum (ESSAF) chairperson, Mr. Mubanga Kasakula. The arrangements with ESAFF regarding the field visit were made by the PELUM RD Campaign, Advocacy and Lobby Officer who was also carrying out a parallel study in the same area. The participants in the FGD were randomly chosen from farming communities, based mainly on their availability to take part in the discussions.

Small scale farmers were included in the sample because they are the eventual target for PELUM Regional desk communication materials on LEISA.

2.4 Data Gathering

Data was collected through various means using both secondary and primary sources. The primary sources included filled in questionnaires from the respondents, interviews with key informants, focus group discussions and active participant observations. Secondary sources included a review of relevant Participatory Ecological Land Use Management (PELUM) Association Regional Desk documents. The student took notes during the entire study period.

2.5 Data Processing

Data was processed before being analysed. This involved editing filled in questionnaires and organising written notes. The data that was collected through the questionnaire was counter checked to ensure that all the questions in each questionnaire were properly answered. The student checked for completeness of each questionnaire as well as accuracy of answers. Uniformity in the interpretation of the questions and of the multiple choice answers was also checked. The completeness of each questionnaire is often essential in a research where even one missing answer demands the whole questionnaire be discarded (Bless and Achola, 1988, p. 114). The data collected through the in-depth interviews was also checked for consistency and major disparities between the various interviewees noted. The data from the focus group discussions was also checked for consistency and major views noted.

The raw information contained in filled questionnaires was coded. This is because data need to be coded before being processed, analysed and reported (O'Rourke, 2000). Coding essentially entails categorising and assigning values to each question.

2.6 Data Analysis

Data analysis was conducted with a computer programme known as the Statistical Package for Social Sciences (SPSS). Data collected was coded and entered in the SPSS version 11 for analysis of frequencies and cross- tabulations (independent versus dependent variables). The data collected through in-depth interviews and the focus group discussions was also analysed, by comparing responses from the interviewees and discussants respectively.

2.7 Opportunities and Limitations

The student faced various opportunities and limitations during the study. The availability of a Participatory Ecological Land Use Management (PELUM) Association Zambia members' list with e-mail addresses and good internet connectivity at the PELUM Regional Desk offices enabled the student to increase the sample size to include PELUM Zambia members without headquarters in Lusaka. The PELUM Zambia Biennial General Meeting was another opportunity for the student to physically target the distribution of questionnaires to non-Lusaka based PELUM members.

The student also experienced a number of limitations. It was very difficult to get some appointments for in-depth interviews with some officers at PELUM Zambia. It was equally very difficult to get responses from some of the PELUM Zambia members that received questionnaires. The student constantly followed up through phone calls, e-mail messages and sometimes physical visits in the case of Lusaka based members. Despite these constant reminders to respond, some members did not respond. In the interest of time the student decided to proceed with data analysis without their input. During the course of the research the student also discovered that there were a relatively few number of individuals

who were familiar with PELUM Association in the member organisations and who were willing to respond to the questionnaire. At most each organisation had one focal point person for PELUM Association issues. This resulted in the number of distributed questionnaires being lower than the planned 100.

Chapter 3

CONCEPTURAL AND THEORETICAL FRAMEWORK

3.0 Introduction

This chapter presents the conceptual definitions and theories relevant to this study. These are communication, development, and low external input sustainable agriculture.

A conceptual definition defines a concept by a set of other concepts (Bless and Achola, 1988, p. 32). Conceptual definitions are useful for communication (ibid.). The concepts relevant to this study are communication, development, and low external input sustainable agriculture.

3.1 Conceptual Definitions

3.1.1. Communication

Communication should be considered as an important element in any development intervention which is aimed at inducing changes in attitudes, beliefs and practices. The word communication comes from the Latin word *communicare* which literally means "to put in common" or "to share" (Wikibook, 2006, p.2). However, it is important to point out that there are various definitions for communication. According to Wikibook (ibid.) it is not easy to arrive at a precise definition of communication that is agreeable to most communication scholars. In fact, most scholars have different definitions for communication. These definitions in many cases reflect the times and the context in which the scholar was making the definition.

According to Castello and Braun (2006, p.5) early theoretical models of communication from the 1960s simply saw the communication process as an exchange of messages from the sender and the channel used for transmission. This however changed in the 1970s and now more emphasis is given to the communication process itself, primarily as an exchange of meaning and of the social relationships that have been derived from such exchange (ibid.) Castello and Braun (2006, p. 4) therefore define communication as "a two-way process in which data and information are sent and received between two or more parties, each with an inherent knowledge and understanding about how the data and information is to be used and of each other (sender/receiver)." They also go on to define communication in the agricultural and rural development perspective as "a social process designed to bring together agricultural technicians and farmers in a two way process where people are both senders and receivers of information and co-creators of knowledge" (Castello and Braun, 2006, p.5). These definitions explain the nature of communication as a process. This implies that communication is a continuous. The definitions also point to the interactive aspect of communication. This typically involves interaction between senders and receivers of messages. In the agricultural and rural development context the interaction is between agricultural technicians and farmers. It is however important to note the interaction can also happen laterally from farmer to farmer.

The Columbia encyclopaedia (cited in: Answers.com, 2007) defines communication as the transfer of information such as thoughts and messages. The forms of communication are by signs (sight) and by sounds (hearing). From this one deduces that communication may utilise visual or audio means of transmission of thoughts or messages from the sender to the receiver. Furthermore, UNICEF (2005) defines communication as the "process of sharing information and meaning. It can be used to encourage safe behaviour and to create support for safe behaviour among communities and leaders." The

UNICEF definition emphasises the fact that the communication process ultimately plays a role in positive behaviour change among communities. Other definitions like the one by Moemeka (cited in: Waisbord, 2001) who states that "communication should be seen both as an independent and dependent variable. It can and does affect situations, attitudes, and behaviour, and its content, context, direction, and flow are also affected by prevailing circumstances...." also point to the relationship between communication and attitude and behaviour change.

Fraser and Villet (1994) have observed that communication can be useful when incorporated in individual programmes and projects and that this mainly succeeds when it is part of the core strategy to set development priorities and carry out planning, implementation and evaluation of programmes, and also when it is used to improve training. They further argued that communication succeeds when planned with a comprehensive strategy compassing r esearch, design of clear objectives, identification of different audience groups, careful message design and choice of channels, and monitoring and feedback. They observed that multimedia approaches that utilise various communication channels in a coordinated and mutually reinforcing way gave the best results. These observations point to the need for a systematic approach when using communication as a strategic means of meeting development objectives. It is important that different audience groups are identified and that appropriate messages are designed based on the characteristics of each group. In addition channels of communication relevant and accessible to the targeted audience group should be identified. Furthermore, for the communication process to be effective there should be mechanisms for monitoring as well as for receiving feedback from the audience groups.

3.1.1.1 Major dimensions of describing communication

According to Wikipedia (2007a), communication is described along the following dimensions: content; source; form; channel; destination/receiver; and purpose/pragmatic aspect.

1. **Content** (what type of things are communicated)

Communication content includes acts that declare knowledge and experiences, give advice and commands, and ask questions (Wikipedia, 2007a). The content, for example, a message in a natural language is sent in some form, for example as spoken language from the sender or encoder to the receiver or decoder (ibid.).

Some communication theorists, for example, Berlo (cited in: Underwood, 2003) consider the content as being a part of the message. The message is defined as the package or packages of meaning that contain the intent from the source (Syque, 2002-2007). The content in this case is defined as the material in the message that is selected by the source to express his/her purpose (Underwood, 2003). It is important that the receiver is able to apprehend the intended message or content in the message in order for communication to be effective.

2. **Source** (by whom)

The source is the originator for the message that is sent to the receiver. Sometimes source is used interchangeably with sender. However, there is a difference in that the source is the originator of the message while strictly speaking the sender is the one who relays the message from the source to the receiver.

3. **Form** (in which form)

According to Wikipedia (2007a), "communication requires that some kinds of symbols from a kind of language are exchanged." This can be through verbal means such as speaking or singing or nonverbal, physical means, such as body language, sign language, touch or eye contact (ibid.). One therefore concludes that communication is a symbolic process since it involves use of signs and symbols.

4. **Channel** (through which medium)

This is the medium through which the message is transmitted (Syque, 2002-2007). The medium may be some form of controlled media such as television adverts or newspaper articles (ibid.). It may also be a more direct channel, such as telephone or face-to-face (ibid.).

The beginning of human communication through artificial channels started from ancient cave paintings, drawn maps and writing (Wikipedia, 2007a). Writing enabled the publication of books, newspapers and periodicals (Columbia Encyclopedia, cited in: Anwers.com, 2007). The rise of book publishing and journalism facilitated the widespread dissemination of information while the invention of the telegraph, the radio, the telephone, and television made possible instantaneous communication over long distances.

5. **Destination/Receiver** (to whom)

The receiver is the person who is at the other end of the communication channel (Syque, 2002-2007). The receiver can be actively seeking to receive the message or may be surprised by it. They may be the intended target or just someone who is within receiving range (ibid.). In the agricultural and rural development context

the intended receivers of the messages should be identified. This is important in terms of developing the appropriate messages for the receivers as well as identifying the most convenient channels of reaching them.

6. **Purpose/pragmatic aspect** (with what kind of results)

A major purpose of communication is to help people feel good about themselves and about their friends, groups, and organisations (Wikipedia, 2007a). According to Wikipedia (2007a) "people want to be heard, to be appreciated and to be wanted. They also want to accomplish tasks and to achieve goals." Communication as a process has synonyms such as expressing, conversing, speaking, corresponding, writing, listening and exchanging (ibid.). These processes enable people to socialise in mutual respect with a view to improve their social well being. In communicating agricultural and rural development messages, one of the aims is to make people adopt various practices that development agents deem good for improving agricultural production and thereby improving the livelihood of the targeted audiences. In addition, the targeted audiences are engaged in the communication process so that they can be able to come up with agricultural innovations that can increase food production and uplift their living standards.

These dimensions of describing communication are important in that they outline the various aspects involved in communication. Development agents intending to apply communication tools in achieving their objectives should be aware of these aspects since they form the critical components of a well designed communication strategy. In any communication strategy it is important to determine what type of message is to be communicated, who the source of the message is and in which form it is communicated, the medium through which it is to be transmitted and to whom as well as the desired results from this process.

3.1.1.2 Types of communication

There are various kinds of communication.

1. **Intrapersonal communication**

This is language use or thought internal to the communicator (Wikipedia, 2007b). The individual is his or her own sender and receiver, providing feedback to himself or herself in an ongoing internal process (ibid.).

2. **Interpersonal communication**

This type of communication involves face to face exchange between two or more individuals. It can be subdivided into dyadic communication, public speaking and small group communication (Wikipedia, 2007c). Dyadic communication involves two people (Wikipedia, 2007c). In this communication process, the sender can immediately receive and evaluate feedback from the receiver. It therefore allows for more specific tailoring of the message and more personal communication than do many of the other media (ibid.). In the context of agricultural and rural development, it involves the exchange of messages on innovations among development agents and farmers through social gatherings such as meetings. This exchange can also occur among traditional leaders and their subjects or among individual farmers as they interact with each other.

3. **Mass communication**

This is communication that is conducted through the mass media. The mass media is specifically conceived and designed to reach a very large audience (Wikipedia, 2007a). The mass media audience is heterogeneous and widely

dispersed. Many traditional broadcast media and mass media such as television, cinema, radio, newspaper and magazines favour one-to-many communication (ibid.). On the other hand modern media such as e-mail and internet forum, now allow for intense long distance exchanges between larger numbers of people (ibid.). Traditional mass media is widely used in the transmission of messages on agricultural innovations such as Low External Input Sustainable Agriculture (LEISA) practices from development agents to the farmers. The internet is still not widely used in rural Zambia.

3. 1.1.3 Contexts in which communication occurs

Communication occurs in various situation or contexts. Some of the contexts are:

1. **Interpersonal context**

This has already been explained in 3.1.1.2 above.

2. **Small group**

This is communication among several people. In this context individuals have an opportunity to converse and interact on a personal level. This form of communication also allows for immediate feedback between the senders and receivers of messages. Small group meetings are frequently used for training on new agricultural practices by extension agents in rural Zambia. They provide an opportunity for the farmers to interact with the extension agents and seek clarifications on issues that they do not understand during such training sessions.

3. **Organisational**

This is communication within and/or between organisations. Normally organisational communication involves the design and implementation of certain communication guidelines. These guidelines sometimes stipulate the lines of communication among the members of the organisations.

4. **Mass**

This is communication mediated by electronic or print media. This form of communication uses gadgets in the dissemination of information from a single source to a large, anonymous and heterogeneous audience. The print media carry messages to mass audiences that appeal to sight. They include books, newspapers, magazines, pamphlets, bill boards and posters. On the other hand the electronic media consist of devices that carry messages through the sense of sound or through both the sense of sound and of sight. They include radio, television, video recordings, motion pictures, internet, compact discs and tapes. Mass media is effective in raising awareness about topical issues among a targeted audience in the quickest space of time. However, it is not as effective in changing attitudes, beliefs and practices.

5. **Cultural**

This is communication between people of different cultures. This aspect is important in situations where the targeted audiences are influenced by their culture in terms of their response to messages. This is particularly the case in rural areas of Zambia where culture plays a role in modelling peoples' perceptions and practices. It is therefore important the development agents communicate in a culturally sensitive manner when they exchange information on agricultural

innovations with the farmers. In such situations development agents should consider using traditional forms of communication which are to be rich in terms of culture in communicating messages. These channels of communication include interpersonal communication, song and dance, poems and folk tales.

6. **Specialist**

This is communication in certain environments, for example, in the family, political arena or health institution.

3.1.1.4 Models of communication relevant to agriculture

According to Rangi *et al.* (2006), there are three models of communication relevant to agriculture. These are:

1. **Communication as dissemination**

This occurs when information is passed from one party to another (ibid.). The model represents the traditional way of transferring innovations from the researcher to the extension service and finally to the farmers. According to Clark (cited in: Rangi *et al.*, 2006) this model implies a knowledge hierarchy, and a one-way flow from the knowledgeable to the ignorant. It also emphasises behaviour change in individuals as a means to development (ibid.). It is important to note that this form of communication is frequently practiced by development organisations. However, Fraser and Villet (1994) observed that in many instances agricultural technology developed by the researchers and disseminated by extension staff has not been relevant to the farmers' situation and that this form of technology transfer has produced meagre results. For this reason it is important that development agents involved in promoting Low External Input

Sustainable Agriculture (LEISA) do not act as experts but treat the farmers as partners in order to register positive results. Treating farmers as ignorant recipients of messages on LEISA only works to alienate them and negatively affects adoption of the promoted practices.

2. Communication as dialogue

This occurs when both parties in a communication act pass information to each other (Rangi *et al.*, 2006). Dialogue promotes a shared understanding and provides the opportunity for communication errors to be corrected (ibid.). It is more responsive to the needs of the communicating parties, although it may still retain some perceived and actual inequalities between the communicating parties (ibid.). This form of communication is a kind of social interaction where at least two interacting agents share a common set of signs and a common set of semiotic rules (Wikipedia, 2007a). Dialogue is important in gaining the same level of understanding among development agents promoting Low External Input Sustainable Agriculture (LEISA) practices and farmers. This is particularly important in situations where innovations that have been tried and tested in another locality are being introduced to a new area. The development agents being more informed concerning the innovation should share this information with farmer through dialogue to a level where they both have the same understanding.

3. Communication as participation

This occurs when the exchange among the communicating parties deepens to include joint action (Rangi *et al.*, 2006). "Participatory approaches to innovation such as joint technology development and testing by different partners are a more elaborate form of dialogue in which information is not only exchanged but acted

on collaboratively (ibid.)." The ideal scenario is that all collaborators are supposed to be 'equal' with no superiority of knowledge implied between those involved. This situation therefore provides an opportunity for indigenous knowledge to be incorporated into the innovation process (ibid). This model is more concerned with social change (ibid.). This form of communication can be highly effective in ensuring lasting change among the farmers in that it accords them an opportunity to participate in coming up with Low External Input Sustainable Agriculture (LEISA) practices that are appropriate to their situation. Participation in the innovation development process by the farmers can inculcate a spirit of local ownership of the developed innovation and therefore increase the adoption levels among the farmers. This is especially the case in societies where introduction of innovations that are considered foreign is always looked at with suspicion.

3.1.2 Development

Food insecurity is a development concern. The promotion of Low External Input Sustainable Agricultural (LEISA) practices is therefore an important development intervention that can have long lasting positive effects on the fo od security situation of resource constrained farmers if adopted. It is therefore important that the concept of development is defined.

Waisbord (2001) argues that there is a lack of widespread consensus in defining development. Inkeles and Smith (cited in: Waisbord, 2001) contend that originally development was the process by which Third World societies could become more like Western developed societies in terms of political system, economic growth, and education levels. According to Waisbord (2001) since then, numerous studies have provided diverse definitions of development. These definitions reflect different scientific premises of researchers as well as interests and political agendas of various organisations and foundations in the

development field (ibid.). What is common though is that increasingly development has meant the improvement of people's livelihood from a state of deprivation in social, political and economic terms. What has changed significantly is that people should actively participate in their own development and that development should be participatory and not top-down. The definitions that have been provided therefore reflect this recent view and emphasise participation, improvement and general well being of the intended targets for development initiatives.

Rogers (cited in: Rogers, 1993), defines development as "a widely participatory process of social change in society, intended to bring about both social and material advancement (including greater equality, freedom and valued qualities) for the majority of the people through their gaining greater control over their environment." Rogers' definition points to the fact that participation is a key factor in the development process. Participatory approaches to development ensure local ownership of the development intervention by the intended beneficiaries and results in sustainability. For development initiatives focusing on the promotion of approaches such as Low External Input Sustainable Agriculture (LEISA) it is important for the promoters to be aware of this and ensure active participation of the targeted adopters in the process. Lack of active participation by the targeted adopters results in the failure of sustained adoption. This is particularly the case among rural communities where there are a lot of conflicting agricultural production practices that are being promoted by various development agents with vested interests.

Kasoma (1997, p. 9) defines development as "the improvement of the human life condition at individual and societal levels which is achieved through desirable but fluctuating changes or adjustments in the environment." Servaes (cited in: Waisbord, undated) defines development "as a multidimensional process that

involves change in social structures, attitudes, institution, economic growth, reduction of inequality, and the eradication of poverty." According to Waisbord (2001) Servaes interprets development as "whole change for a better life." The definitions by Kasoma and Serves point to the fact that development entails the achievement of desirable changes and these changes can occur in various spheres or sectors, for example, the economy or environment.

Haq (cited in: the 2006 UNDP Human Development Report, p. 263) argues that "the basic objective of development is to create an enabling environment in which people can enjoy long, healthy and creative lives". In the same report Sen argues that "development can be seen...as a process of expanding the real freedoms that people enjoy." The arguments by Haq and Sen are important in the light of food insecurity. Food insecurity affects the ability of those affected by it to enjoy access to food that meets their dietary requirements. It is therefore in the interest of agricultural development that such individuals are provided with information on techniques that can be utilised in increasing their ability to produce food to meet their requirements. In doing this it is also important that these techniques do not produce negative environmental impacts that will result in depleted agricultural productivity in the future. Therefore a good agricultural development intervention should not only aim at fulfilling the immediate food requirements of the targeted adopters but also the long term implications of the promoted intervention.

All the definitions of development that have been given above emphasise the fact that development can only be said to have occurred when there is a fulfilment of certain human aspirations. These aspirations can be economic, cultural, environmental or social in nature. The attainment of household food security by resource constrained small scale farmers can be considered as development in the context of high poverty levels and food insecurity especially in rural areas. The

conservation of the environment through adopting environmentally sustainable agricultural practices is also a form of development as it ensures sustained food production. The definitions also emphasise the need for participation of the targeted beneficiaries in the development process if it is to be sustainable.

3.1.3 Sustainable Agriculture

Sustainable agriculture has many definitions. According to Norman *et al.* (1997) many definitions have been proposed by various authors. Wilson and Tyrchniewicz (cited in: the International Institute for Sustainable Development, 2006) argue that definitions of sustainable agriculture are generally related with concerns for agricultural practices to be economically viable, to meet human needs for food, and to be environmentally positive. In the word sustainable, sustain comes from the Latin word *sustinere* where *sus* means "from below" and *tenere* means "to hold, to keep in existence or maintain" implying long term support or performance (Gold, 1999). From the lower level concept of sustain one can deduce that sustainable agriculture therefore implies the practice of conducting agricultural activities in a manner that maintains the natural state of the production medium such as land.

The National Safety Council (2005) defines sustainable agriculture as "environmentally friendly methods of farming that allow the production of crops or livestock without damage to the farm as an ecosystem, including effects on soil, water supplies, biodiversity, or other surrounding natural resources." It further describes sustainable agriculture as an intergenerational concept. It asserts that sustainable agriculture entails the passing on of a conserved or improved natural resource base instead of a depleted or polluted one from one generation to the next (ibid.). From this definition and assertions one can conclude that for an agricultural system to be considered sustainable it needs to retain its natural

properties and to be able to utilised successfully for agricultural production purposes in future.

Ikerd (cited in: Gold, 1999) defines sustainable agriculture as farming systems that are "capable of maintaining their productivity and usefulness to society indefinitely. Such systems...must be resource conserving, socially supportive, commercially competitive and environmentally sound". This definition introduces the aspect of commercial competitiveness as a measure of sustainability. In order to be sustainable agricultural production should be done within certain costs in order to be considered commercially viable. This could be achieved by farmers spending less on purchasing external inputs and relying more on locally available materials for production purposes.

The United States Department of Agriculture Natural Resource Conservation Service General manual (cited in: Gold, 1999) defines sustainable agriculture as "a way of practicing agriculture which seeks to optimise skills and technology to achieve long-term stability of the agricultural enterprise, environmental protection, and consumer safety". This is achieved by strategies that enable the producer to employ soil conserving cultural practices, soil fertility programmes and pest management programmes (ibid.). The goal of sustainable agriculture is minimising adverse environmental impact while at the same time providing a sustained level of production and profit (ibid.). This definition encompasses all the aspects of the environment and commercial viability that are part of the National Safety Council and Ikerd above. The definition in addition points to the importance of optimising the available skills and technologies in order to ensure sustainability of the agricultural enterprise. These skills can include indigenous knowledge in the Zambia context that has been retained in rural communities for generations. External development agents need to be aware of this indigenous knowledge and marry it with new techniques in order to maintain a level of

relevance and respect for introduced agricultural practices. Disregarding the existence of such skills and technologies among adopting communities and introducing something totally new negatively affects sustainability.

Other definitions of relevance are that of Gold and the Non-Governmental Organisations Sustainable Agriculture Treaty. Gold (1999) defines sustainable agriculture as "...a model of social and economic organisation based on an equitable and participatory vision of development which recognises the environment and natural resources as the foundation of economic activity. Agriculture is sustainable when it is ecologically sound, economically viable, socially just, culturally appropriate and based on a holistic scientific approach." While the Non-Governmental Organisations Sustainable Agriculture Treaty of 1992 (cited in: Gold, 1999) describes sustainable agriculture as a system that "uses locally available renewable resources, appropriate and affordable technologies and minimises the use of external and purchased inputs, thereby increasing local independence and self sufficiency and insuring a source of stable income for peasants, family and small scale farmers and rural communities. This allows more people to stay on the land, strengthens rural communities and integrates humans with their environment."

In addition to the aspects that have already been alluded to in definitions above, Gold's definition points to the importance of equity and participation of intended beneficiaries in the development of agricultural innovations in order to improve adoption. Further the need to introduce to them culturally appropriate practices or innovations is also emphasised, as this also improves adoption levels of the introduced practices. The Non-Governmental Organisations Sustainable Agriculture Treaty definition highlights the fact that a sustainable agricultural system relies on locally available renewable resources and is not dependent on purchased inputs for agricultural production.

3.1.3.1 Kinds of sustainable farming practices

According to Gold (1999) sustainable farming practices commonly include:

1. **Crop rotation**

This practice involves the rotation of crop species on a piece of land in order to improve soil fertility and reduce on the incidence of crop pests and diseases. It is the mitigation of weeds, diseases, insects and other pest problems by planting different types of crops in a sequence on the same plot of land. Crop rotation helps to provide alternative sources of soil nitrogen using nitrogen fixing crop species such as leguminous plants. It also reduces soil erosion and the risk of water contamination by agricultural chemicals (ibid.). This practice also reduces the need for application of chemical fertilisers since some of the crop types included in the rotation sequence (especially leguminous plants such as common beans) fix nitrogen in the soil. The practice is highly promoted among small scale farmers by development organisations in Zambia. Usually the small scale farmers are supplied with different types of crop species. Typically these include a legume (common beans or cow peas), a cereal (especially maize) and a tuber crop (especially sweet potatoes or cassava).

2. **Pest control**

Strategies that are not harmful to natural systems are employed. This includes integrated pest management techniques that reduce the need for pesticides by practices such as scouting (regularly checking the crops in field for pests), use of resistant cultivars or crop varieties, timing of planting (preferably planting when there is a smaller chance of disease and pest outbreaks) and biological pest control. Biological pest control involves the use of certain types of plants or

insects that negatively affect the growth of the targeted weeds or pests. Such plants produce scents that are repulsive to the pests and sometimes insects that feed on the targeted pest (commonly referred to as the natural enemy) are introduced in the crop field. Integrated pest management and biological pest control are mainly practiced in Zambia by organic crop producers.

3. **Weed control**

This involves the utilisation of mechanical or biological strategies for weed control. Mechanical strategies involve use of farming implements such as hoes to remove weeds. On the other hand biological strategies involve use of plants that emit certain odours or substances that negatively affects the growth of weeds. In addition, practices that conserve soil and water such as mulching (addition of plant debris to soil) can be employed. These methods of controlling weeds are environmentally friendly and sustainable in comparison to application of chemical herbicides.

4. **Soil nutrients addition**

This involves addition of animal and green manure to the soil in order to increase the nutrient levels. It can also involve the preparation and addition of compost to the soil. Compost is organic fertiliser that is prepared by decomposing various organic materials. It is important to note that sustainable agriculture encourages the use of natural or synthetic inputs in a way that poses no significant hazards to man, animals, or the environment.

It is also important to note that all the above practices do not rely on use of external resources on the part of the farmer in order to be carried out. In many cases all that is required is to train the farmers on how to conduct the practices.

3.1.4 Low external input

Like other concepts explained above low external input has several definitions. Below definitions by Parr and the World Bank group are given. Both definitions outline that the underlying concept in low external input is the reduced use of purchased inputs in the process of agricultural production. Therefore according to Parr *et al.* (cited in: Gold, 1999) low input farming systems "seek to optimise the management and use of internal production inputs, that is, on farm resources, ... and to minimise the use of production inputs such as purchased fertilisers and pesticides, whereas and whenever feasible and practicable to lower production costs, to avoid pollution of surface and ground water, to reduce pesticide residues in food, to reduce farmers' overall risk, and to increase both short-and long- term farm profitability." This definition seeks to define low external input on the basis of what is intended to be achieved when growing crops at farm level. On one level it is to maximise the use of internally available resources while at the other level it is to reduce the cost of production and retaining the environmental sustainability of the soil.

Meanwhile the World Bank group (2006) defines low external input as a system that uses farmer's knowledge and a range of management practices for example, agro-forestry, integrated pest management, inter cropping, crop-livestock integration, to minimise the need for purchased inputs. This definition actually outlines the practices that embody the concept of low external input. Agro-forestry is the integration of crop production with tree species. The trees and crops are planted in a particular sequence on a piece of land. The trees have properties of adding soil nutrients to the soil that are consequently taken up by the crops. Integrated pest management has already been defined in 3.1.3.1 above while intercropping is the planting of different crop species in the same plot of farm land at the same time so that the crops benefit from each other. Crop-

livestock integration is the practice of growing crops and rearing animals on the same farm. The crop residues are used for feeding the livestock while the animal droppings are applied to the soil in order to fertilise the soil. All these practices entail the efficient use of resources so that processes in agricultural production system support each other hence removing the need for introduction of external inputs such as chemical fertiliser and pesticides. It is important to note that chemical fertilisers and pesticides have a very high potential of increasing average crop production in a short period of time. However, the long term effects are that the natural soil nutrient base reduces and therefore the soil needs to be replenished with the chemicals every time growing season. In addition some chemicals have harmful effects on the health and the environment. The fact that chemical fertilisers and pesticides are costly and may have negative implications on the environment is considered unsustainable in light of the definitions of low external input outlined above.

3.1.5 Low External Input Sustainable Agriculture (LEISA)

This concept combines the concepts of low external input and sustainable agriculture that have been defined above. The two concepts are the building blocks for the higher concept referred to as Low External Input Sustainable Agriculture (LEISA). In this study low external input sustainable agriculture is defined as the use of agricultural practices that mainly rely on locally available resources for soil fertilisation, pest and disease control. Such agricultural practices should be able to support the natural production system and not negatively impact on the environment and the future viability of the agricultural production system. Most of the LEISA practices have been described in 3.1.3.1 and 3.1.4 above.

Another LEISA practice that has been commonly promoted by development organisations in Zambia in the recent past is conservation farming. According to World Bank group (2006) conservation farming "encompasses four broad, intertwined management practices: minimal soil disturbance (no ploughing and harrowing) maintenance of a permanent vegetative soil cover, direct sowing and sound crop rotation." In Zambia conservation farming is characterised by the preparation of permanent planting stations which are commonly referred to as planting basins. Preparation of the basins is done following some standard spacing in a crop field. The basin itself is also prepared based on standard dimensions of length, width and height. This practice therefore ensures that only the space that will be actually used for planting the crops is tilled. As a result it is also referred to as a minimum tillage method. The advantages of this practice are that the soil that is not required for cultivation is preserved in its natural state. In addition nutrient addition is only done in the planting basins thereby optimising the use of available resources. This innovation is also ideal in environments where there are frequent droughts since it increases water retention. Experiences among farmers indicate that the practice requires a lot of labour in the initial years. This labour requirement however substantially reduces with time after establishment of permanent planting basins.

3.2 Theories

Theory means sets of concepts and propositions that articulate relations among variables to explain and predict situations and results (Waisbord, undated). Theories explain the nature and causes of a given problem and predict situations and results (ibid.). They also provide the explanatory framework for empirically verifiable observations, otherwise known as facts (Bless and Achola, 1988, p. 9).

The theory relevant to this study is the diffusion of innovation. This theory relates to how new ideas or innovations are adopted by individuals in a social system. It is therefore appropriate to a study focusing on the diffusion of information on low external input sustainable agriculture from development agents to small scale farmers, with the view that the latter adopts it. Though low external input sustainable agriculture had been practised by the Zambian farmers for generations before the introduction of high external input agriculture in the colonial years, it is still considered a new idea. This is because years of practising conventional agriculture have resulted in loss of the original indigenous knowledge and other developments such as improved knowledge on farming methods. These changes therefore require that the farmers are reintroduced to the idea of using lesser external inputs and new sustainable innovations that have emerged.

3.2.1 Diffusion of innovations

Diffusion of innovation is concerned with the way that innovations spread among members of a social system. In this research we are looking at how Low External Input Sustainable Agriculture (LEISA) practices spread among development agents and small scale farmers. Diffusion of innovation theory, among various aspects, provides an insight into the characteristics of an innovation that are considered by potential adopters, the different categories of potential adopters, the innovation decision processes they go through and communication channels. This information is important to development organisations that are involved in the promotion of practices such as LEISA. This is because understanding what potential adopters consider in an innovation, the decision processes they go through and the communication channels which are effective in reaching them at every stage of the adoption process is crucial in developing programmes that improve adoption levels.

According to Orr (2003) diffusion theory is a set of generalisations regarding the typical spread of innovations within a social system. Gartshore (2004, p. 447) argues that "the emphasis in diffusion theory is on the "information exchange" or "technology transfer" since it is essential to communicate if an innovation is to be recognised and adopted."

Rogers (cited in: the University of Twente, 2004) defines diffusion as the "process by which an innovation is communicated through certain channels over a period of time among members of a social system." This definition has four main components: innovation; communication; time; and social system. These components are defined individually below.

Innovation is defined as "an idea, practice, or object that is perceived to be new by an individual or other unit of adoption" (ibid.). The newness of the idea, practice or object is based on the potential adopter's perception and not necessarily on how long the innovation has been in existence. Communication refers to the process by which the new idea travels from one person to another or from one channel to the individual (ciadvertising, 1999). Diffusion is also regarded as a special type of communication in that messages are concerned with new ideas. Time refers to the period it takes for a group to adopt an innovation as well as the adoption for individuals in the group. The relative speed at which an innovation is adopted by members of a social system is known as the rate of adoption. Research in diffusion of innovations has established that when the number of individuals adopting an innovation is plotted against a cumulative frequency over time the resulting distribution is an S-shaped curve. Social system refers to "a group of individuals that together complete a specific goal (ibid)".

The original diffusion research was done in 1903 by a French sociologist Gabriel Tarde (University of Twente, 2004). Tarde plotted the original S-shaped diffusion curve (ibid.). In his 1962 book *Diffusion of Innovations*, Everett M. Rogers, theorised that innovations would spread through society in an S curve, with early adopters selecting the innovation first, followed by the majority, until the innovation was common. Most innovations have an S-shaped rate of adoption (Rogers, cited in: the University of Twente, 2005). According to Rogers (cited in: ciadvertising, 1998) some new innovations diffuse rapidly creating a steep S-curve while others have a slower rate of adoption, creating a more gradual S-curve. In terms of promotion of LEISA practices that show immediate benefit normally have a steep S-curve while those that have long term benefits have a gradual S-curve.

Bataille (1998) asserts that diffusion theory investigates five main elements. Rogers (cited in: Bataille, 1998) outlines these elements as: the characteristics of an innovation that may affect its adoption; the decision making process that occurs when individuals consider adopting a new idea, product or practice; the characteristics of individuals that make them likely to adopt an innovation; the consequences for individuals and society of adopting an innovation; and the communication channels used in the adoption process.

Diffusion theory improves on the two-step flow theory. It recognises the role played by change agents and gate keepers in influencing audience behaviour, an addition to the opinion leaders and the media identified in the two-step theory. Diffusion of innovation theory predicts that media as well as interpersonal contacts provide information and influence opinion and judgement (University of Twente, 2004). Additional intermediates are change agents and gatekeepers.

Change agents are professionals who encourage opinion leaders to accept or discard an innovation, for example, extension workers. Gate keepers are the

individuals who control the flow of information, for example, editors of media institutions. Unlike theories which assumed that the mass media had direct, immediate, and powerful effects on mass audiences, diffusion theory argues that it is opinion leaders who directly affect decision making of their peers (Orr, 2003). It therefore posits that a powerful way for change agents to affect the diffusion of an innovation is to affect opinion leader attitudes (ibid.). On the other hand, the media's most powerful effect on diffusion is that it spreads knowledge of innovations to a large audience rapidly (ibid.). In some instances, the media leads to changes in weakly held attitudes (ibid.). Development organisations promoting the adoption of LEISA must therefore be aware of the roles played by the media, gate keepers opinion leaders (who in the Zambian context include traditional leaders) and change agents in influencing the targeted adopters in a particular context. This awareness will assist the development organisations to formulate programmes that will engage the media, gate keepers, opinion leaders and change agents in a way that effectively increases adoption levels.

3.2.2 The Five adopter categories

Members of a social system can be classified on the basis of their innovativeness. Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of the system. There are five adopter categories based on this classification.

1. **Innovators**

The innovators are venturesome. They are daring and take risks. They also have the ability to understand and apply complex technical knowledge and to cope with a high degree of uncertainty about an innovation (Rogers cited in:

ciadvertising, 1998). They also have a high degree of mass media exposure and their interpersonal network extend over a wide area reaching outside of their local system. The innovators constitute 2.5 per cent on the standard deviation curve (University of Twente, 2004).

2. **Early adopters**

The early adopters use the data provided by the innovators' implementation and confirmation of the innovation to make their own adoption decision (Orr, 2003). This group is integrated in the local social system. They constitute opinion leaders and serve as role models for other members or society (Rogers cited in: ciadvertising, 1998). This group constitutes 13.5 per cent on the standard deviation curve (University of Twente, 2004).

3. **Early majority**

This group interacts frequently with peers but seldom holds positions of opinion leadership. They deliberate before adopting a new idea (Rogers cited in: ciadvertising, 1998). They constitute 34 per cent on the standard deviation curve.

4. **Late majority**

This group is sceptical and cautious. The late majority adopt innovations because of pressure from peer and economic necessity (Rogers cited in: ciadvertising, 1998). They constitute 34 per cent on the standard deviation curve (University of Twente, 2004).

5. **Laggards**

This group possesses no opinion leadership. It consists of social isolates who are suspicious of innovations and take a long time to come to a decision (Rogers cited in: ciadvertising, 1998). Laggards make up 16 per cent on the standard deviation curve.

3.2.3 The adoption process

In his book *Diffusion of Innovation* Rogers defines the adoption process as "the mental process through which an individual passes from first hearing about an innovation to the final adoption" (ciadvertising, 1998). Rogers differentiates the adoption process from the diffusion process in the sense that the latter occurs within society, as a group process, whereas the former pertains to an individual (ibid.). The adoption process can be broken down into five stages. These are awareness, interest or information, evaluation, trial and adoption (ibid.).

1. **Awareness**

At this stage, the individual is exposed to the innovation but has no complete information about it (Rogers, cited in: ciadvertising, 1998).

2. **Interest or information**

At this stage, the individual is interested in the new idea and seeks additional information about it (ibid.).

3. **Evaluation**

At this stage, the individual mentally applies the innovation to his present and anticipated future situation and decides to try it or not (ibid.).

4. **Trial**

At this stage, the individual makes full use of the innovation (ibid.).

5. **Adoption**

At this stage, the individual decides to continue the full use of the innovation (ibid.).

Development agents promoting LEISA should be aware of the stages in the adoption process and use appropriate channels to provide the information required by the potential adopter.

3.2.4 Innovation Decision Process

This is a process that an individual or other unit of adoption goes through from first knowledge of an innovation, to forming an attitude towards it, to a decision to adopt or reject, to implementation or use of the new idea and to confirmation of the decision. The innovation decision process can lead to either adoption or rejection of an innovation. Given that decisions are not authoritative or collective, each member of a social system faces his/her own innovation decision that follows a five step process (Orr, 2003):

1. **Knowledge**

This occurs when an individual or other decision making unit learns of the innovation's existence and gains an understanding of how it functions. A person normally seeks three types of knowledge about the innovation (ciadvertising, 1998). Rogers (cited in: c iadvertising, 1998) describes these as (1) awareness knowledge i.e. information that an innovation exists; (2) how-to-knowledge i.e. information necessary to use an innovation properly and (3) principles knowledge i.e. information dealing with the functioning principles underlying how the innovation works. At this stage mass media channels can effectively transmit the information required by the potential adopter.

2. **Persuasion**

This occurs when an individual or other unit of decision making unit forms a favourable or unfavourable attitude towards an innovation. At this stage an individual seeks innovation evaluation information in order to reduce uncertainty about the innovation's expected consequences. Therefore the individual wants to know the advantages and disadvantages in his or her situation. Interpersonal networks with near peers are particularly likely to convey such evaluative information about the innovation.

3. **Decision**

This occurs when an individual or other unit of decision making engages in activities that lead to a choice to adopt or reject an innovation. At this stage the individual is looking for evaluation information on the advantages and disadvantages of adopting an innovation. Subjective evaluations of a new idea from other individuals are especially likely to influence the individual.

4. **Implementation**

This occurs when an individual or other unit of adoption puts an innovation into use.

5. **Confirmation**

This occurs when an individual or other decision making unit seeks reinforcement of an innovation decision that has already been made. The individual may reverse this previous decision if exposed to conflicting messages about the innovation.

3.2.5 Types of Innovation Decisions

There are three types of innovation decisions. These are:

1. **Optional innovation decisions**

The choice to adopt or reject an innovation is made by an individual independent of the decisions by other members of a system.

2. **Collective innovation decisions**

The choice to adopt or reject an innovation is made by consensus among members of a system.

3. **Authority innovation decisions**

The choice to adopt or reject an innovation is made by a relatively few individuals in a system who possess power, status, or technical expertise.

In addition, the choice to adopt or reject an innovation is made only after a prior innovation decision is called a **contingent innovation decision.**

In many Zambian agricultural communities all the three types apply. In some communities, especially those in rural areas, collective innovation decisions are commonly made. This allows consensus among the adopting group and therefore results in genuine adoption of innovations. In other situation authority innovation decisions are made. This is particularly the case where a community leader such as a traditional ruler passes a decree concerning a particular innovation. This is quite common in some rural areas of Zambia. Such innovation decisions are effective in ensuring adoption or rejection of a particular LEISA practice. However, this form of innovation decision tenders to force individuals to practice what they may not genuinely believe in and therefore is not sustainable.

3.2.6 Rejection and Discontinuance

An innovation may be rejected during any stage of the adoption process (Rogers, cited in: ciadvertising, 1998). Rejection is a decision not to adopt an innovation. An innovation can also be discontinued (ibid.). Discontinuance is a rejection that occurs after adoption of an innovation. According to Rogers (cited in: ciadvertising), "many discontinuances occur over a relatively short time period." A few discontinuances are caused by displacement due to superior innovations (ibid.). It is also possible for an individual to adopt an innovation after a previous

decision to reject it. Such later adoption and discontinuance occur during the confirmation stage of the innovation decision process.

3.2.7 Characteristics of innovation considered by potential adopters

The process of adoption is affected by five different characteristics of an innovation (ciadvertising, 1999). These five characteristics are important in explaining the rate of adoption. Each characteristic affects the rate of adoption of an innovation differently. The characteristics are also interrelated and compensate for each other (Raczynski and DiClemente, 1999). It is important to note that the innovation does not have to be better or easier to use than the product it is competing with but it must be perceived to be better or easier to use by the individual or unit of adoption (ciadvertising, 1999). Perception is therefore a strong factor in the adoption process. People will only adopt an innovation if they are convinced by the following:

1. **Relative advantage**

This refers to the extent an innovation is better than the one it is replacing. The relative advantage can be judged by increased profitability or ease of use or storage (ibid.). In this respect it does not matter so much if the innovation has a great deal of advantage but that an individual views the innovation as advantageous. Therefore the greater the advantage the more rapid its rate of adoption will be. One of the challenges of LEISA adoption by small scale farmers is that related practices are considered to be labour intensive. As a result, potential adopters prefer to purchase chemical fertiliser as opposed to preparing their own compost manure, for example. It is therefore important that development organisations collaborate with agricultural researchers in order to come up with LEISA innovations that are less labour intensive.

2. **Compatibility**

This refers to the extent the new innovation takes into consideration local values and customs, past experiences and needs of the potential adopters. An innovation is unlikely to succeed if local values and customs are overlooked no matter how superior or efficient it is (ibid.). The more an innovation fits the local culture the faster it is likely to be adopted (ibid.). Sometimes an incompatible innovation can also be adopted but only if there is prior adoption of a new value system. This can be a relatively slow process. Development organisations need to be aware of the prevailing customs in the area where they plan to introduce certain practices. In the Zambian context some communities are very particular about the type of crops that they can grow because of certain beliefs. This has implications on the type of crops that can be used in a crop rotation system, for example. Introduction of Bambara groundnut (*itoiyo*) in communities that associate this crop with infertility will result in rejection of this LEISA practice.

3. **Complexity**

This refers to the extent of how difficult it is for an individual to comprehend and use an innovation. The harder an innovation is to use, the lesser it is likely to be adopted (ibid.). New innovations that require the adopter to develop new skills and understanding are not rapidly adopted. Some individuals regard the preparation of planting basins used in conservation farming as a cumbersome and complicated affair. This is because of the meticulous measurements that have to be done. Therefore this negatively affects the adoption of this LEISA practice by the potential adopters.

4. **Divisibility or Triability**

This refers to the ability for the individual to test an innovation before deciding whether to adopt it or not (ibid.). New ideas that can be tried on installation are generally adopted more quickly than those that are not divisible. This is because an innovation that is triable represents less uncertainty to an individual considering it for adoption as it is possible to learn by doing.

5. **Observability**

This refers to the degree to which the results of an innovation can be seen by others. Generally, the easier it is for an individual to see results of an innovation the more likely they are to adopt it. Visibility stimulates discussion as friends and neighbours of the adopter often request innovation evaluation information about it.

6. **Other aspects considered by the potential adopters**

Apart from the characteristics above potential adopters may also consider the following aspects when assessing an innovation for adoption.

6.1 **Reversibility**

This is the ability to resume previous practices (Raczynski and DiClemente, 1999). Innovations that cannot be terminated without leaving a vacuum and significant problem should not be introduced. For example, infant formula should not be introduced where the negative consequences of termination cannot be quickly reversed by resumption of breast-feeding (ibid.).

6.2 **Flexibility**

The innovation should be flexible and fit local conditions. According to Northrup (cited in: Raczynski and DiClemente, 1999, p. 591) "successful recipes for home made oral rehydration solutions have been developed with local participation to substitute for expensive or inaccessible commercial solutions. However, educating community health workers and mothers to mix and administer the solution correctly requires an intensive, localised, hands-on teaching approach with careful follow up.

6.3 **Cost-efficiency or cost-benefit**

According to Raczynski and DiClemente (1999) individuals evaluate innovations informally with respect to benefits anticipated (or promised) versus expected costs. Costs involve expenditures of money, time, energy, or other resources for the individual to learn to use the innovation and the potential loss of money, time, energy, or reputation if it fails. The more the perceived benefit outweigh the costs, the greater the likelihood of adoption. High labour requirement for some LEISA practices may be considered as a big cost and affect adoption among some small scale farmers. In order to improve adoption levels in such cases the promoters of innovations should highlight the advantages of such innovations besides the high labour required.

6.4 **Risk**

This refers to the perceived uncertainty that accompanies an innovation. The lower the perceived risk, the greater the likelihood of adoption (ibid.). Agricultural extension agents introducing a new seed or fertilizer often confront this issue e.g. subsistence farmers who cannot afford to lose any of their crop.

3.2.8 Re-invention

This is the degree to which an innovation is altered or modified by the user in the process of its adoption and implementation. Some researchers measure re-invention as the degree to which an individual departs from the main line version of the innovation that was originally presented by the change agency.

3.2. 9 Communication channels

Communication must take place in order for an innovation to spread. The diffusion process involves information exchange, whereby an individual communicates information with others. At a very basic level this entails that there is (1) an innovation, (2) an individual or other unit of adoption that has knowledge of the innovation or experience of using it, (3) another individual or unit of adoption with no knowledge or experience and (4) a communication channel connecting the (2) and (3).

Rogers (cited in: Isman, 2005) defines a communication channel as the means by which messages get from one individual to another or from one channel to the individual. The communication process of the diffusion of innovation is from mass media channels to opinion leaders and then to the potential adopters. Sometimes it is from mass media to change agents and then the potential adopters. Mass media channels are often the most rapid and efficient channel to inform potential adopters about the existence of an innovation, that is to create awareness and knowledge. Interpersonal channels are more effective in persuading an individual to adopt an innovation especially when it links individuals similar in social economic status and education or other factors.

Personal influence is an important factor to consider in the diffusion process (ibid.). This refers to any communication between two individuals where one individual creates a change in another's behaviour. Personal influence can also be compared with peer pressure. According to Rogers (cited in: Gartshore, 2004) most people depend on a subjective evaluation of an innovation from adopters like themselves. The importance of peers in the adoption process confirms the notion of homophily (ibid.). Homophily is the transfer of ideas between two individuals who are similar in attributes such as social status, education and interests (ibid.). Rogers argues that when individuals share common meanings, the communication of new ideas is regarded as more likely, more effective and more rewarding (ibid.). On the other hand communication can also be heterophilous. This is a situation where change agents, who may apply different meanings to the use of an innovation, communicate with potential adopters (ibid.).

There are three types of selectivity that indicate that personal influence can be a stronger factor in the diffusion process than the media (ciadvertising, 1999). These are:

1. **Selective exposure**

The idea that an individual will be more susceptible to channels of communication that already agree with their current attitudes and feelings (ibid.)

2. **Selective perception**

The idea that an individual will view new ideas in relation to their old ones (ibid.).

3. **Selective retention**

The idea that an individual will mainly remember a new idea if it directly relates to their own situation or remedies a specific problem.

3.2.10 Types of social systems

Diffusion occurs in complex systems where networks connecting system members are overlapping, multiple, and complex (Rogers, *et al.*, 2005). Social systems can be characterised as heterophilous or homophilus (Orr, 2003).

1. **Heterophilous social systems**

Heterophilous social systems tend to encourage change from system norms and there is more interaction between people from different backgrounds, indicating a greater interest in being exposed to new ideas (ibid.). In this system the opinion leadership is more innovative because the system is desirous of innovation (ibid.).

For heterophilous sytems, the change agents can concentrate on targeting the most elite and innovative opinion leaders and then the innovation will trickle down to the non-elites (ibid.)

2. **Homophilous social systems**

Homophilous social systems tend toward system norms (ibid.). Most of the interactions within them are between people from similar backgrounds. People and ideas that differ from the norm are regarded as strange and undesirable. The opinion leadership in such a system are not very innovative because the system is averse to innovation (ibid.).

In homophilous systems change agents must target a wider group of opinion leaders, including some of the non elite, because innovations are less likely to trickle down (ibid.). Opinion leaders who adopt innovations in homophilous systems are more likely to be regarded as suspicious and/or dismissed from their opinion leadership (ibid.). Thus they avoid adopting innovations in hopes of protecting their opinion leadership (ibid.). Generally, in homophilous systems, opinion leaders do not control attitudes as much as pre-existing norms do (ibid.). For this reason, change agents must communicate to opinion leaders a convincing argument in favour of the innovation that accentuates the compatibility of the innovation with system norms (ibid.).

Social systems can be split into two categories of norms (ciadvertising, 1999). These are:

2.1 **Traditional**

According to Rogers (cited in: ciadvertising, 1999) traditional norms are characterised by (1)a less developed or complex technology (2) low levels of literacy and education (3) little communication between the social system and outsiders (4) lack of economic rationality (5) one dimensional in adapting and viewing others.

2.2 **Modern**

According to Rogers (ibid.) modern norms are characterised by (1) a developed technology with complex jobs (2) strong importance placed on education (3) acceptance of free thought and new ideas (4) strong preparation and high importance on economic considerations and (5) ability to see and understand other people situations.

Chapter 4

LITERATURE REVIEW

4.0 Introduction

This chapter reviews some of the past research on low external input sustainable agriculture. Focus will be on studies that have focused on adoption of sustainable agricultural practices among farmers.

4.1 The case for Low External Input Sustainable Agriculture (LEISA)

Many arguments have been given by various advocates for LEISA as to why it should be promoted for adoption by farmers. Most of the reasons are concerned with the need to provide alternatives that can help to reduce dependency on external inputs such as chemical fertiliser and pesticides in the production of food. The use of chemical fertilisers and pesticides is considered to be unsustainable especially for the resource constrained small scale farmers who are unable to avoid the cost of such inputs. Promotion of LEISA therefore ensures that small scale farmers are provided with skills that can maximise their utilisation of locally available natural resources on their farmers in the production of food for local consumption and for sale to meet their dietary requirements and income.

Crowder *et al.* (1998) argues despite overall gains in food production and food security on a global scale, Sub-Saharan Africa produces less food per person and the number of chronically under nourished people is high. He asserts that food production in this region of Africa continues to grow more slowly than the population and per capita food production has declined since the 1970s. According to him agricultural productivity is very low, averaging 300 to 500

kg/ha as compared to 2.5 tons/ha in the United States, for example (ibid.). One of the factors contributing to this situation is the fact that countries such as Zambia, are unable to produce enough food due to various structural problems. Inputs such as chemical fertilisers have become very expensive and beyond the reach of average farmers. Most of the small scale farmers, who produce about 80 per cent of the food in the country, mostly depend on government subsidised fertiliser under the Fertiliser Support Programme. But there are those who do not qualify on this programme, mostly resource constrained small scale farmers who cannot afford to pay the required 50 per cent. The use of chemical fertilisers on most of Zambia's farm land over the years has resulted in high soil acidity which negatively affects crop production.

Another factor contributing to the low agricultural productivity and subsequent food insecurity is inappropriate land use, which damage the natural resource base. The Institute of Economic and Social Research (cited in: Haggblade and Tembo, 2003) attribute declining land productivity to inappropriate farming practices, excessive erosion, increasing levels of fertiliser-induced acidity and soil compaction due to excessive and repeated cultivation. This scenario requires that agricultural production methods that rejuvenate the soil and increase fertility without depending on expensive external inputs should be investigated and promoted.

LEISA is increasingly receiving attention as an alternative to conventional farming strategies making intensive use of external inputs (Kessler and Moolhuijzen, 1994, p. 181). The promotion of LEISA is base on its conservation of the environment and the reduced dependency on purchased inputs. Competing practices such as convention agriculture have been said to negatively affect the environment. In fact Alonge and Martin (1995, p.34) argue that "conventional agriculture, though associated with high yield in the short run,

leads to massive damage to the natural environment in the long run". Some of the negative consequences attributed to conventional agriculture are over-capitalisation and huge, massive environmental degradation and rapid depletion of non renewable natural resources (ibid). Kessler and Moolhuijzen (1994, p. 189) also argue that "the unbalanced and excessive use of external inputs may lead to pollution and gradually decreasing yields, loss of control over production means, decreasing incomes and increasing expenses for smallholder farmers."

The negative effects of conventional farming have resulted in the realisation that better methods should be used in food production. This does not only improve access to food at the moment but also ensures that the land will be able to produce food successfully in the future. As a result, sustainable agricultural systems have been recommended as alternatives to conventional agriculture. Alonge and Martin (1995, p.34) argue that "sustainable agricultural systems are ecologically profitable and environmentally sound". This is supported by Pretty and Hines (cited in: Haggblade and Tembo, 2003, p.3) who indicate that "most assessments of low input, ecologically friendly agricultural technologies report substantial increases in farmer yields, often double those achieved by conventional methods." Despite these positive attributes of LEISA its advocates admit that achievement of substantial gains in output typically requires additional inputs, most particularly in terms of labour (Haggblade and Tembo, 2003, p.3; Kessler and Moolhuijzen, 1994, p. 187).

4.2 Factors affecting adoption of low external input sustainable agriculture among farmers

Research has indicated that farmer adoption of sustainable agricultural practices is low despite the negative environmental consequences of conventional agricultural systems (Alonge and Martin, 1995, p.35). There are various reasons for this.

Drost, Long, Wilson, Miller and Campbell (1996) say one of the factors limiting adoption of sustainable farming practices is lack of useful up-to-date information. They argue that individual production practices, environmental constraints and perception problems also limit the adoption of many sustainable practices. In a study conducted among Utah farmers in the United States of America, they discovered that most farmers perceived sustainable practices to be too costly (ibid.). This finding is striking. In the previous chapter it was pointed out that cost is one of the characteristics assessed before an innovation is considered for adoption by the potential adopter and that cost can be in form of time, labour or finance. The Utah farmers cited more time, information and management as limiting requirements for successfully converting to sustainable practices (ibid.). The study also established that older farmers were more resistant to adopting low-input practices because of the high labour demands. One can also attribute this difference in adoption levels among the two age groups to the fact that younger farmers are more likely to take risks than older farmers.

This assertion was confirmed in another study that particularly researched this aspect. The study was conducted among West Virginia farmers in the United States of America. It concluded that "age is likely to be negatively associated with adoption; younger farmers are more likely to adopt new technologies and/ or are likely to be early adopters" (D'Souza, Cyphers and Phipps, 1993, p. 160). In addition it was concluded that education is positively and significantly associated with adoption of sustainable technologies. One can deduce from this that the positive relationship between education and adoption of sustainable technologies could be due to the fact that innovations require a certain level of aptitude in order to be effectively understood and practised. Any degree of perceived complexity in the innovation affects its adoption. It is therefore important that innovations are communicated in a simple language that the potential adopters can easily translate into practise. As much as possible information materials

should be done simply and if possible actual demonstrations carried out to increase understanding.

In a study done in Pakistan, lack of information on sustainable agriculture was found to be a major limiting factor to its adoption Mengal (2000). About 68.34 per cent of the farmers targeted in the study were not familiar with the concept of sustainable agriculture. In addition, the majority of extension agents were also not familiar with the concept (ibid.). These findings indicate that it is important that potential adopters are provided with the necessary information that is required for them to be able to make innovation decisions. This information should be provided through relevant communication channels during the adoption process. One can also deduce from this study that sustainable agriculture is still new to most parts of the world. More efforts therefore are needed in order to increase awareness among farmers and extension agents.

A descriptive study conducted by Alonge and Martin (1995) in the United States of America, argued that successful adoption of sustainable practices is highly influenced by farmer attitude and perception than any other factor. Their study found that diffusion of sustainable agriculture is influenced by the quality of information. Most of the respondents in this study indicated that they were at the information gathering stage with regard to adoption of the sustainable practices. The researchers therefore concluded that "if farmers at the persuasion stage in the innovation-decision process are to decide in favour of sustainable agricultural practices, they would need to be provided with adequate agronomic and economic information about the practices." From this one concludes that it is essential to provide the right information at every stage of the innovation – decision process that the farmers go through. According to Crowder *et al.* (1998), information, education and training allow farmers to make use of new farming knowledge and technologies. For this reason farmers' knowledge and information

need to be constantly up graded (ibid.). In addition staff of the organisations that support farmers, such as government extension agencies, non-governmental organisations and agri-businesses, also need up-to-date knowledge about improved and sustainable farming in order to them to effectively build the capacity of the farmers.

Research has established the fact that farmers adopt LEISA for various reasons. Research conducted by Kessler and Moolhuijizen (1994) in Ghana and the Philippines revealed that "farmers adopt LEISA techniques mainly out of economic motives (p.186)." It was also established that most farmers discontinue LEISA practices if concrete results in terms of economic benefits and increased crop production do not show. One of the biggest constraints to adoption of LEISA in this regard is that there is normally a period of decreased agricultural production following introduction of LEISA techniques (p.187). This transition period takes 3-5 years (ibid). The study found that among some of the motivation for farmers to apply LEISA were services provided by NGOs, such as social welfare, community development and social empowerment. It was also discovered that where renewable resources were readily available, farmers appeared to be little motivated to apply LEISA techniques because of high labour requirements demanded by LEISA. As already alluded to development organisations need to emphasise on the positive aspects of LEISA and encourage the potential adopters to appreciate this. The farmers should also be made to put their expectations into perspective in order to avoid disappointment in the initial years of adopting LEISA. Communication can play a critical role in this process.

Applicability of LEISA was also found to be higher where farmers owned their land compared to those who did not (p.188). Tenant farmers were discouraged or even prohibited to apply LEISA techniques by their landlords. Women appeared to adopt all LEISA techniques investigated in the study (maintenance of soil

fertility, soil and water conservation, agro-forestry and integrated pest management) more rapidly. The researchers therefore concluded that constraints on LEISA affected women more than men because they "generally had less land ownership than men, had more labour constraints and less control over the profits of their labour investment in LEISA techniques" (ibid.). The researchers also noted that one important instrument to develop LEISA techniques is the participatory technology development approach (ibid). This approach ensures that techniques are developed and tested on-farm based on farmers' indigenous knowledge, skills and priorities, with support from the capacities of external agents and agricultural science (ibid.). They also concluded that availability of technical information and examples of successful applications are important elements of the participatory technology development approach to motivate farmers to adopt LEISA techniques (p. 189).

This research points to the importance of involving the potential adopters in the process of developing innovations in order to increase adoption. It also highlights the importance of promoting the right LEISA practices to the right potential adopters. Since in some cases land is a limiting factor, LEISA practices that can only be appropriate if the farmer owns the land should be avoided in situations where the farmer has no ownership. The aspect of land ownership can affect adoption. Therefore it is important that suitable practices are promoted.

4.3 Trends in adoption of conservation farming practices in Zambia

One of the most promoted sustainable agricultural practices in recent years, especially among small scale farmers in Zambia is conservation farming. Conservation farming was introduced to small scale farmers in 1996 (Haggblade and Tembo, 2003, p.3). This form of farming involves dry-season land preparation using minimum tillage systems; crop residue retention; seeding and

input application in fixed planting stations; and nitrogen fixing crop rotation (ibid.). Haggblade and Tembo's study of the adoption trends of conservation farming among small scale farmers found that:

- Adoption rates were highest in Zambia's agro-ecological regions I and IIA
- Access to extension support and animal draft power influences farmer decisions. The behaviour of the lead farmer entrusted with the responsibility of providing extension information and farming inputs strongly influenced the members of his or her group members.
- Personal characteristics of individual farmers likewise affected adoption decisions. Retired school teachers, draftsman and accountants made good conservation farmers. The researchers attributed this to the fact that conservation farming required careful planning and meticulous, timely execution of key tasks which could only be attained by farmers with good management traits.
- Most farmers partially adopted conversation farming technologies. They put some of their plots on conservation farming and maintained the others on conventional farming practices. Adoption rates rarely reached 100 per cent and some farmers discontinued the practice after a certain period of time. There were also spontaneous adoptions by farmers who were not targeted by any change agents.
- Adoption rates varied by group, crop, gender and length of experience with conservation farming. Women applied conservation farming to a greater proportion than men.

The findings highlighted above strongly correlate to what was discussed in the diffusion of innovation theory. This research established that the innovators were mostly individuals with a higher level of education such as retired teachers,

draftsmen and accountants. These individuals also had access to assets such as draft power which saved on labour requirements. The study also concluded that access to change agents such as extension workers improved adoption. This confirms what is predicted in the diffusion theory regarding the importance of communication channels such as extension workers in the spread and subsequent adoption of innovations. Extension workers in Zambia mainly use interpersonal communication channels in sharing information on innovations such as conservation farming. They often conduct demonstrations during farmer trainings. This study also established that the characteristics of an innovation, in particular, observability played an important role in influencing potential adopters' decisions whether to adopt or reject innovations. This is depicted by the fact that the behaviour of lead farmer or innovator strongly influenced the members of his or her group members. This aspect also shows that strategies that establish groups for promotion of innovators have a higher success rate than those that appeal to individuals. This is particularly the case in social systems where innovation decisions are made collectively.

Chapter 5

FINDINGS AND DISCUSSION

5.0 Introduction

This chapter focuses on the findings of the study drawn from the results of the in-depth interviews, focus group discussions, questionnaires, review of PELUM literature and the student's observations during the period of the attachment. The student conducted five in-depth interviews with relevant officials at the Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD), two in-depth interviews with relevant staff at PELUM Zambia County Desk (CD), four focus group discussions (FGD) with four farming communities in Kafue district and distributed questionnaires to members of staff employed in PELUM Zambia member organisations.

5.1 Communication contexts in PELUM Association

Communication in Participatory Ecological Land Use Management (PELUM) Association occurs in various contexts. There is communication at the organisational (intra and inter), interpersonal, small group and mass levels. Regular information sharing is critical for an organisation that promotes learning such as PELUM Association. The fact that PELUM Association is a network with various structures also requires that there is effective horizontal and vertical communication.

The student noted that there is intra-organisational communication at the RD. At another level intra-organisational communication in PELUM Association occurs between the RD, Country Desks (CD) and Country Working Group (CWG) (or

member organisations). The member organisations eventually communicate with small scale farmers. The student also noted that the most common channel of communication used in these processes were the internet and the telephone. Occasional face to face communication between the RD and the PELUM Zambia CD took place during the student's attachment. This was mainly because of a joint study that was being conducted by PELUM RD and PELUM Zambia. Inter-organisational communication also takes place between the RD, funding partners, like minded organisations and the wider public.

5.1.1 PELUM RD and PELUM Zambia Memorandum of Understanding

According to Mukute (2004, p. 40), "...thematic and geographical focus and activities of a network ought to be separate and district from those of its members. If there is an overlap, destructive tension...arise because the network then competes with its members for space, resources, power and influence, the limelight, and for an audience." It is for this reason that Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) and the Zambia Country Working Group (CWG) signed a Memorandum of Understanding (MoU) to spell out the roles and limits of each other. The PELUM RD therefore only communicates to member organisations in Zambia through the Country Desk (CD). In addition, all PELUM publications are distributed to the members in Zambia through the CD. The CD then eventually distributes the materials to the members. Further, the RD needs the CD's consent whenever it wishes to directly implement programmes in Zambia.

5.1.1.1 PELUM Zambia

Participatory Ecological Land Use Management (PELUM) Association Zambia was established seven years ago. It has a membership of 33. The membership

includes full, associate and individual members. Table 1.1 in chapter 2 shows the member organisations that were included in the study. At the time of initiating the study the PELUM Association Zambia database and members' inventory only contained information about 27 members. However, during in-depth interviews the student was informed the membership had grown to 33. The members include Non-Governmental Organisations (NGOs) involved in food security, livelihood and natural resource conservation. Others are quasi-governmental organisations involved in research and training such as the Golden Valley Research Trust (GART) and the In-Service Training Trust (ISTT). The PELUM Association Zambia Country Working Group (CWG) has a new country board which was elected into office during the Biennial General Meeting that was held in July, 2008. The board is the policy organ and is responsible for resource mobilisation and employing the secretariat. The CWG has established a Country Desk (CD) or secretariat which is headed by a Country Desk Coordinator (CDC). The other members of staff included a project officer, an accountant and an accounts assistant. The secretariat implements programmes and assists the board in mobilising financial resources. It also facilitates research at farm level and links farmers with scientists and researchers. However, the CD's role is only that of facilitation and not direct implementation of activities on the ground. The direct implementation of activities is done by the member organisations.

5.1.2 Intra-organisational communication at PELUM RD

The student observed that the Regional Desk (RD) uses the telephone and the internet as the main channels of communication for information flow internally. All officers at the RD are connected to a local internet network. There is also a wire and wireless internet connectivity in all the offices. According to the

Information and Communications Officer most internal communication at the RD is through e-mail.

There are also various office meetings that are held from time to time. In-depth interviews with some of the official at the RD revealed that office meetings are supposed to be held every Monday. However, the student observed that the Monday meetings are held at an irregular rate. The student participated in two Monday meetings while on attachment. The meetings act as a way for members of staff to share what they have been working on and their immediate future tasks. According to one member of staff the meetings were intended to be occasions where staff could informally share information. The RD is also supposed to hold monthly meetings. No monthly meeting was held while the student was on attachment. Lunch breaks also act as occasions to share information since members of staff all eat from office Kitchen.

5.2 PELUM Association's support of Sustainable Agriculture

According to Mukute (2004, p.9), "PELUM promotes sustainable agriculture and natural resource management." Mukute (2004) argues that the Association promotes sustainable agriculture because it recognises: the importance of indigenous knowledge and technology; use of locally available resources; and farmer control of the agriculture production and distribution chain. Sustainable agriculture is, according to Participatory Ecological Land Use Management (PELUM) Association's belief, a means and an end (ibid.). As a result of this belief, PELUM Association promotes those techniques, attitudes and values that encourage sustainable utilisation of resources through: networking workshops, documentation and dissemination of success stories; linking products with markets and showing that such farming is viable in the long run (ibid.).

In PELUM's view sustainability means maintaining the productive potential of land and water resources and equity between generations, genders, and nationalities and peoples. In-depth discussions and review of PELUM literature revealed that PELUM is opposed to fertilisation of soil using inorganic substances because this compromises the self sustainability of soil. Organic agriculture, on the other hand, is promoted because it enables self regeneration of soils and ensures a balance between human activity and nature. The World Bank group (2006) defines the concept of organic agriculture as the use of agronomic, biological and mechanical methods to control pests and maintain soil fertility with virtual elimination of synthetic chemicals for crop and livestock production. The PELUM Zambia Country Desk Coordinator informed the student that PELUM Zambia is promoting an integrated approach to Low External Input Sustainable Agriculture (LEISA). In this approach, fish farming, for example, can be integrated with livestock production and crop production. In such a system the livestock droppings are used as fish feed or crop manure while the crop residues are used as animal feed. Hence system processes at the farm level are able to support each other. PELUM also promotes the following sustainable agricultural practices: permaculture; agro-forestry; planned grazing management; crop rotation; and minimum tillage or conservation farming.

The student found out that there is no specific communication strategy for the promotion of LEISA. However, the RD communicates messages on LEISA using a range of communication tools that are used for other developmental themes as well. LEISA is promoted through various developmental programmes and projects implemented by PELUM RD. As already alluded to before the organisational structure of PELUM Association is at various levels. Information flow is therefore designed to flow through various structural organs before it reaches the small farmers scale. In Zambia information to the general membership is channelled through the PELUM Zambia secretariat or CD. The

CD therefore receives information from the RD and then subsequently relays this to the member organisations that eventually communicate with the small scale farmers on the ground.

5.3 Policies and Strategies used by PELUM RD

The student found out that Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) employs various strategies in promoting sustainable agriculture among its member organisations, small scale farmers and other publics. These are social change, educational and advocacy campaigns, research, networking and information sifting and sharing. Review of PELUM Association literature, in particular, a book entitled "*Tracing PELUM's development journey: experiences and lessons from an African regional NGO network*" and the PELUM RD 2006-2008 strategic plan document, however, revealed that PELUM Association actively promoted sustainable agriculture in its formative years in form of capacity building among its member organisations but this has increasingly become less as the organisation has concentrated much more on advocacy in recent years. One of the reasons for this shift is that members' needs have diversified to include other capacity building needs in organisational development, financial and information management. In terms of advocacy PELUM RD has been increasingly involved in global, sub-regional and national processes that seek to influence policies on food security, seed security and agricultural research for development.

In-depth interviews with focal point persons of units at PELUM RD revealed that PELUM Association has various written strategic policy documents that guide the design and implementation of programmes and projects. These are policies or strategic documents are: communication; Campaign, Advocacy and Lobby (CAL); gender; HIV/AIDS; and Networking, Fundraising and Learning.

For the purposes of this research more emphasis was placed the on communication strategy.

5.3.1 Research

Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) conducts research on various issues of interest to its work. The research is conducted in order to generate information that can be used in validating the Association's positions on topical issues such as Genetically Modified Organisms (GMOs) or bio-fuels. In the recent past the RD has conducted research on indigenous foods (in 2007), funding to the agricultural sector in five African countries (in 2005) and marginalised areas in Zambia and Kenya (in 2007). During the student's attachment period the RD was conducting two researches. One research was focusing on marginalisation of farmers in policy making processes while the other was on farmer organisations. The first study was commissioned by Concern Worldwide and the second by Oxfam NOVIB. The student actively participated in the first research, mainly by reviewing literature and critiquing the draft research report.

5.3.2 Campaigns

One of the strategies used in communicating by Participatory Ecological Land Use Management (PELUM) Association is through campaigns. In 2007 the Association conducted a social change campaign. The campaign promoted the utilisation of indigenous food among the Zambian public. The main highlights of the campaign were inter-school debates involving twelve secondary schools in Lusaka province and a school essay, poems and drawings competition. Radio and television discussion programmes and documentaries were also broadcast on public media. The print media was used to advertise the essay competition.

The Association is also conducting campaigns such as "Stop EPAs". This is a campaign against the signing of the Economic Partnership Agreements (EPA) between African Caribbean and Pacific (ACP) Countries and the European Union (EU). The campaign was launched in 2007. According to the Campaign Advocacy and Lobby (CAL) Officer, PELUM Association's position on EPAs is guided by an analysis of how the EPAs will affect small scale farmers, in particular whether small scale farmers stand to win or lose. Another campaign launched last year was "Make Agriculture Work". The campaign is on lobbying the African governments to increase their budgetary allocations to the agriculture sector by 10 percent of the national budgets. In 2008 a campaign against bio-fuels will be launched. PELUM's position on bio-fuels is motivated by the recognition that cultivation or production of bio-fuels will take away land from food production and result in food insecurity in Africa.

5.3.3 Networking

The Regional Desk (RD) networks with national, regional and international Non Governmental Organisations (NGOs) in order to avoid duplication and maximise impact. These networking efforts are aimed at improving the livelihood of small scale farmers. Currently the RD is networking with Catholic NGOs in Europe and DanChurchAid (DCA) Zambia in Zambia on advocacy on food security issues.

5.3.4 Communication Strategy

Participatory Ecological Land Use Management (PELUM) A ssociation has a communication strategy. The strategy is in form of a written document. Mefalopulos and Kamlongera (2004, p. 8) define a communication strategy as a "well planned series of actions aimed at achieving certain objectives through the

use of communication methods, techniques and approaches". Fraser and Villet (1994) argue that "communication succeeds when it is part of the core strategy to set development priorities and carry out planning, implementation and evaluation of programmes, and also when it is used to improve training at all level." They also argue that "communication succeeds when it is planned with a comprehensive strategy. There should be research, clear objectives, identification of different audience groups, careful message design and choice of channels, monitoring and feedback." According to the PELUM Secretary General the idea to develop a communication strategy for the Association was inspired by a desire to increase communication within the network and to inform the wider public about PELUM's organisational thinking. The setting up of the Information and Communication unit followed in the period 1997-1998. In the period 1999-2004 a process of drafting an information and communication strategy paper was initiated. The strategy has undergone various revisions. The latest was in 2005 and there are plans to revise it in the future.

The overall goal of the communication strategy is "to facilitate information sharing, networking and exchange among PELUM members, partners and other stakeholders that results in informed decision making and improved policies and practice in sustainable land use management" (PELUM Regional desk, undated).

The objectives for the strategy are:

1. To raise awareness and understanding of PELUM Association's activities;
2. To outline how PELUM Association intends to manage and communicate key messages and content to identified stakeholders;
3. To provide the board, regional and country desk coordinators with a documented framework detailing which communication mechanisms or tools

would be most appropriate for the identified stakeholders and target audiences;

4. To provide a mechanism for seeking and acting on feedback to encourage interaction and whole inclusive involvement of members and others stakeholders; and
5. To assist in selling the vision and mission of PELUM Association to stakeholders (ibid.).

In-depth interviews and an analysis of the communication strategy document revealed that the strategy was mainly designed for organisational communication within the PELUM association. For this reason it has a regional perspective stipulating the expected roles and responsibilities of the different structures of PELUM Association in ensuring that there is effective information flow. The strategy has outlined various communication channels an the targeted audience for each channel. The targets include regional board, regional desk, CWG, the membership, partners, small scale farmers and other publics.

5.4 Communication channels or vehicles

The Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) communicates through various channels. It utilises interpersonal and mass media channels. The interpersonal channels include meetings, visits and workshops. In terms of mass media, both print (old) and electronic (modern) methods are used. Print media are however quite prominently used. They include books and booklets, posters, pamphlets and brochures and magazines and occasionally newspapers. PELUM frequently uses modern communication media especially the internet (worldwide web and e-mails), video recordings (video tapes, Video Compact Discs (VCD) and Digital Video Discs (DVD)) and to a lesser extent radio and television.

5.4.1 Interpersonal

5.4.1.1 Meetings

Communication in Participatory Ecological Land Use Management (PELUM) Association is at various levels. The main communication events organised by the Regional Desk (RD) are the regional board meeting, general meetings and senior staff meetings. According to the Information and Communication Officer, meetings provide feedback from the member countries to the regional desk. They also act as an opportunity to discuss and share on various common issues.

1. **Regional Board meetings**

Two regional board meetings are held every year.

2. **Regional staff meetings**

During the student's attachment PELUM held a senior staff meeting in May, 2008 in Malawi. The meeting brought together senior members of staff at the regional desk and Country Desk Coordinators (CDC) from the PELUM Country Desks (CD). The Regional desk was also making arrangements for another meeting for members of staff from the region that will be held in August, 2008 in Lusaka. The meeting will include participants from all the CD including support staff.

3. **General meetings**

The RD is preparing for a general meeting for the general membership, referred to as a Triennial General meeting (TGM), to be held in October, 2008 in

Tanzania. The meeting will bring together PELUM members from all 10 member countries.

4. CWG meetings

At the Zambia Country level, the PELUM Zambia secretariat organises general meetings every two years for the members. The RD makes presentations at such meetings as well as facilitating sessions with farmers. During the student's attachment PELUM Zambia held its Biennial General Meeting in Lusaka. The PELUM RD Finance Officer made a presentation at the meeting on behalf of the PELUM Secretary General. Such meetings are used as a channel for the Zambia Country Desk to communicate with members. The meetings are also used as a channel for the distribution of PELUM publications to members.

According to the Information and Communication Officer, meetings provide feedback from the member countries to the regional desk. They also act as an opportunity to discuss and share on various common issues.

5. Workshops

PELUM RD conducts regular capacity building workshops on various themes mainly targeting its CWG, and members of staff for CDs. The workshops are always conducted in a participatory manner. This allows the participants to take an active role. The student took part in an internal capacity building workshop on Participatory Rural Appraisal (PRA). The Regional desk was in the process of planning a financial and general capacity building workshop for all members of staff from the CDs during the student's attachment. This workshop will be take place in mid August, 2008 in Lusaka.

6. **Visits/tours**

Staff at the RD, in particular the Agricultural Research and Organisational Development officer makes regular personal visits to the CDs and member organisations that are involved in directly promoting LEISA among small scale farmers. These visits are done in order to find out small scale farmers' needs and what PELUM Association can do to respond.

The RD also occasionally arranges for exchange visits between farmers in the various PELUM Association member countries. The exchange visits act as a way of introducing good farming practices from farmers to farmers. However, according to the CAL officer the inter-country visits are now done at a lower scale because of limited resources.

PELUM Association Zambia secretariat is involved in organising exchange visits between small scale farmers. The farmers are targeted through the various projects implemented by member organisations. The aim of the exchange visits is to promote farmer to farmer extension. According to the PELUM Association Zambia Country Desk Coordinator, the government farmer extension system is over stretched and does not serve all areas and in some cases the farmers complain that the extension workers lack practical experience. For this reason PELUM Association Zambia helps to build the capacity of the grassroots so that farmers can own the process of generating information and innovations. The farmer exchange visits are normally arranged in a way that the host farmers can show their visitors how they grow crops and in this way generate debate and discussion on good farming practices. PELUM Association Zambia secretariat also conducts monitoring visits to projects implemented by member organisations whose funding it has facilitated. Sometimes the members also visit

the secretariat. Such occasions are also used to distribute information communication materials to the members.

5.4.2 Print media

5.4.2.1 Magazine

Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) publishes a regional magazine known as *Ground Up*. The magazine's targeted audience are farmers, members, partners and the general public. The inaugural issue of the magazine was published in 2000. Two issues of the magazine are published each year on various themes. In the last three issues the themes were: genetic engineering and small scale farming; sharing experiences and practices from members; and climate change: responses and adaptation. The themes are suggested by the Information and Communications officer and agreed upon by other staff members before presentation to the editorial committee of the regional board for approval. Articles for the issues are sourced from the PELUM members through the Country Desks (CD). An officer at the PELUM Association Zambia Country desk informed the student that the RD requests for articles for the magazine but at times the CD has not contributed the articles.

The magazine is sent to CDs for subsequent distribution to the members. PELUM Association RD also sends copies to funding partners. Some of the copies are sold to interested persons and organisations. Copies of the magazine are uploaded on the PELUM Association RD website. The first issue of the magazine was in the process of being published at the time of the student's attachment. In Zambia the magazine is sent to PELUM Association Zambia secretariat, which is expected to redistribute it to the member organisations. The

member organisations are in turn expected to distribute some magazines to the small scale farmers who they work with.

5.4.2.2 Books and booklets

Documentation and sharing experiences is central in Participatory Ecological Land Use Management (PELUM) Association (Mukute, 2004). For this reason PELUM Association has documented various experiences through the publication of various books and booklets on various themes, for example, literature on how development could be more democratic, sustainable and empowering. The organisation has also documented "Best Practices" of good farmer practices at regional level. Some PELUM Association published books include: *Tracing PELUM's Development Journey: Experiences and Lessons from an African Regional NGO Network; The Field Guide and Seed Manual.* The RD published booklets such as *The European Development Fund (EDF) and Less Favoured Area: Zambia case study*, based on the study of marginalised areas in Zambia and Kenya that has already been alluded to above. Recently a booklet on the indigenous food campaign was launched during the World Food celebrations in Zambia, in October, 2007. At the time of the student's attachment PELUM Association RD was in the process of publishing a booklet based on a compilation of essays, poems and drawings submitted by students during the indigenous food campaign last year. This booklet will be launched during the Triennial General Meeting (TGM) in October, 2008. In Zambia, the books and booklets published by the RD and PELUM Association Country Working Groups are sent to the Country Desk for subsequent distribution to the members.

5.4.2.3 Brochures and Pamphlets

The Regional Desk (RD) prepares brochures about itself for distribution to interested members of the public and members. According to the communication strategy (PELIM, undated) the brochures should be produced annually. Th e brochures were out of stock during the time of the student's attachment. Pamphlets are also prepared on various issues that the RD engages with.

5.4.2.4 Posters and Fliers

The Regional Desk (RD) publishes posters and fliers on various themes and sends them to Country Desks and partners. Posters are published for the purpose of capturing images that reinforce the messages for various thematic activities. The fliers on the other hand are used for notifying the membership of upcoming events.

5.4.2.5 Newspapers

The Regional Desk occasionally uses the public newspapers to publicise articles.

5.4.3 Electronic media

5.4.3.1 Website

Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) operates a website. The website was being reconstructed to include more features at the time of the student's attachment. The site features the main PELUM RD programmes, upcoming events, publications and has links to the websites of Country Desks.

5.4.3.2 Electronic (e) mail

The e-mail facility on the internet is frequently used for communication by the Regional Desk with the Country Desks and the regional board members.

5.4.3.3 Electronic Bulletin

Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) publishes an electronic bulletin known as *PELUM Bulletin* every two months. This publication is circulated in-house to m embers, Country Desks (CD), funding and other working partners. Initially, the publication was also printed and distributed in hard copy but this was stopped due to time constraints and cost. Copies of the bulletin are available on the PELUM RD website. In Zambia the bulletin is sent by e-mail to the CD for redistribution to the members.

5.4.3.4 Video Recordings

Participatory Ecological Land Unit Management (PELUM) Association Regional Desk (RD) sometimes produces video recording of certain activities. These recordings are saved on video tapes, Video Compact Discs (VCD) or Digital Video Discs (DVD). Copies of the recordings are kept in the resource centre and borrowed by interested individuals.

5.4.3.5 Radio and Television

Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) occasionally uses the public media (radio and television). According to the Campaign, Advocacy and Lobby (CAL) Officer radio and television are

occasionally used because they are expensive. In 2007, during a campaign on indigenous food some programmes and documentaries were aired on Zambia National Broadcasting Corporation (ZNBC) radio and television. The intention for using these media was to take the discussions on indigenous food to the level of the general public in Zambia.

5.4.4 Other channels

5.4.4.1 National and International events

Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) participates in shows in Zambia such as the Lusaka Agricultural and Commercial Show. In 2007 the RD and the Zambia County Desk shared a stand at the show. These events are used to publicise what PELUM Association is doing. They also act as an avenue to distribute information materials to members of the public. PELUM Association also attends international events. In 2007 the RD participated in the World Social Forum in Kenya and the World Congress for Rural Women in South Africa. The PELUM Association Secretary General and a local female Zambian farmer from the Green Living Movement project in Serenje attended the Non Governmental Organisation (NGO) meeting that was held along side the Group of Eight (G8) meeting in June, 2008 in Japan. The idea of going with the farmer to such an event was intended to create an avenue for the farmer to address an international audience on issues affecting Zambian small scale farmers.

5.4.4.2 Resource Centre

Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) has a resource centre. The centre is stocked with unique materials that deliberately centre around PELUM Association's area of focus. The centre is meant for use by the regional board members, members, partners and the general public.

According to the Information and Communication Officer three members of the public used the resource centre during the period of the student's attachment. However, the student noted that the centre was not used by the member organisations during this period. This is quite unfortunate since the resource centre offers an opportunity for individuals to have access to a variety of literature on Low External Input Sustainable Agriculture (LEISA) and other issues that PELUM Association is involved with.

5.4.4.3 Reports

The Regional Desk (RD) produces various reports based on meetings and programmatic activities' such as trainings and workshops. The RD produces biannual and annual, review and evaluation. The reports are shared to various organs of PELUM Association and the funding partners.

The Country Desks (CDs) produce quarterly reports which are sent to the RD for sharing with other CDs. In order to ensure more systematic sharing between the CDs, plans are under way to develop a generic template for the quarterly reports. The template will be developed by the RD. The input from the various CDs will be complied into a brief which will then be disseminated to all CDs.

5.4.4.4 Database

The Regional Desk (RD) maintains an electronic and hard copy database of all the Country Working Groups (CWGs). The database has information on all the Participatory Ecological Land Use Management (PELUM) Association members in the 10 member countries. The information is prepared by the CWGs and sent to the RD. The information includes the names of the member organisations, their postal, e-mail and physical addresses, titles of the contact persons, telephone numbers, the kind of developmental work they are involved in as well as their website. This information is used when sending invitations or information materials to the members.

The student used the PELUM Association Zambia members' list in the database as a sampling frame. The student observed that a number of the e-mail addresses for the member organisations were incorrect. In the course of the research the student also discovered that some of the member organisations were also not yet included in the information stored at the RD. For these reasons it is important that the database is constantly updated with new information.

5.4.4.5 Drama and song

According to the communication strategy (undated) each Country Working Group (CWG) is supposed to coordinate country dance and song activities to express intended messages effectively. However, the student noted that these channels have not been used recently.

5.4.4.6 Photography

Participatory Ecological Land Use Management (PELUM) Association believes in the power of photography for message transmission. The association believes that photography breaks the language barrier and is worth a thousand words. To this effect, most publications include photographic images.

5.4.4.7 Press releases and public debates

The communication strategy stipulates that the "RD should issue press releases detailing new findings and opinions on sustainable agriculture in national and regional print and electronic media (PELUM, undated, p.8). Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) did not make any press releases during the period of the student's attachment. The RD participates in various forums such as the DanChurchAid (DCA) Zambia Food Security Platform with the view of expressing PELUM Association's stance and views on topical issues.

5.5 Audience Segmentation

In-depth interviews and a study of the communication strategy document revealed that Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) has segmented the various audiences that it seeks to influence. To this effect targeting of messages depends on the nature of the information. Most of the information is generated for the members and small scale farmers but sometimes it is targeted at individuals and institutions that influence what the small scale farmers do, for example, policy makers.

5.6 Feedback mechanisms

Generally all the officers interviewed lamented the poor or lack of feedback from the targeted audience in particular the members and the Country Desks. Sometimes feedback from the farmers, Participatory Ecological Land Use Management (PELUM) Association member organisations and the Country Working Groups is obtained through verbal and written communication according to the Campaign, Advocacy and Lobby Officer. She however observed that there is no deliberate structure through which feedback is solicited from the audience. She emphasized that sometimes it is important to direct mail to specific individuals rather than a mass audience in order to receive feedback. In order to improve the situation there are also intentions to put a questionnaire in the *Ground Up* magazine in order to access readers' views

.

5.7 Monitoring and evaluation system

The Regional Desk (RD) has no mechanisms of monitoring and evaluating the utilisation of the information provided to the Participatory Ecological Land Use Management (PELUM) Association membership and the general public. The situation is similar at the Zambia Country Desk (CD) level. In-depth interviews revealed that there is no deliberate mechanism for feedback from the members to the secretariat on information products distributed to them. Despite sending out a lot of messages on issues such as sustainable agriculture, the RD has no mechanism of assessing whether this information is beneficial to the targeted audience and if they actually use it.

The CD however monitors the implementation of Low External Input Sustainable Agriculture (LEISA) among small scale farmers through monitoring visits to projects implemented by member organisations whose funding has been

facilitated by the CD. Some of these projects have reporting templates that capture information on adoption rates, and modifications and innovations made by farmers to promoted practices.

5.8 Familiarity with PELUM Association Communication Strategy Document

Discussions with officers at Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) revealed 80 per cent of the interviewed staff were aware of the existence of the communication strategy document while the other 20 per cent were not. The interviews also revealed that familiarity with the communication strategy document is perceived as the sole responsibility of the Communications and Information Officer by other officers. For this reason the other officers were not quite familiar with the contents of the document, though further probing showed that these officers observed some of the communication practices outlined in the strategy document. One officer at the PELUM Association Zambia secretariat said that he had not bothered to find out if there was a communication strategy at the regional level while the other officer was not very familiar with the contents of the communication strategy document. For effective communication to take place it is important that the officers charged with various responsibilities in the communication strategy are aware of their roles and take a keen interest in what they are mandated to do.

5.9 Internal assessment of implementation of communication strategy

There was some dissatisfaction expressed by three officers concerning the implementation of the communication strategy. One officer said that the strategy document was very extensive in terms of the level of detail on what should be done, for example when producing press releases. To this effect another officer

said that the strategy should be more focused. In terms of implementation, one drawback was that it was very difficult to translate the written words of the strategy into action. For example one officer said it was not easy to get input from the Country Working Groups for publication purposes or responses to e-mails even when specific information is required from them. It was equally difficult to receive feedback on the information disseminated to the member organisations.

80 percent of the individuals interviewed expressed the need for improvement in the communication strategy. Two individuals suggested that there should be more personal communication especially in meetings. There was also one suggestion that member countries should adapt the organisational strategy to suit their situations.

5.10 PELUM Zambia Desk's role in Communicating LEISA

As already alluded to Participatory Ecological Land Use Management (PELUM) Zambia is responsible for communicating information obtained from the Regional Desk (RD) and other sources to the member organisations who eventually communicate with their targeted small scale farmers. The PELUM Association Zambia secretariat communicates information on Low External Input Sustainable Agriculture (LEISA) to the member organisations and farmers in various ways. The target for this information are the employees in member organisations, in particular those that directly work with the small scale farmers. The small scale farmers are also targeted.

5.10.1 Publications

Participatory Ecological Land Use Management (PELUM) Association Zambia also produces its own publications. The Association produced a book entitled "*Best Practices in Zambia: sustainable Agriculture cases*" in 2006. This book contains a collection of best practices on sustainable agricultural practices promoted among small scale farmers by PELUM Association member organisations. These practices include agroforestry, conservation farming, pit farming, contour ridging among others. The secretariat has also produced training modules and toolkits for community leaders and facilitators. One of these is a book entitled "*Introduction to Agroforestry module: A trainer's guide*" which was produced this year (2008). This book contains information on agroforestry practice and implementation. Another is a book entitled "*Leadership and facilitation skills*" has also been published this year (2008). The publication of these two books alluded to above is through a project called the Zambia Sustainable Agriculture Support project. The project is being implemented by PELUM Association Zambia through its members.

5.10.2 Training

Participatory Ecological Land Use Management (PELUM) Association Zambia conducts training and facilitates communication between farmers. The Country Desk Coordinator believes that farmer to farmer communication is more sustainable than external agents to farmer communication. Training is conducted based on the needs assessment of the members. Needs assessments are done in order to determine the type of training that is required. At times the secretariat conducts specific trainings for certain members while at other times trainings are arranged between organisations (member to member training).

5.10.3 Other

The Country Desk (CD) used to produce a newsletter but this has now stopped due to lack of finances. The production of fliers has also stowed due to the same reason. As already alluded to the Participatory Ecological Land Use Management (PELUM) Association Zambia secretariat communicates to the members through the biennial general meeting and monitoring visits. Sometimes the members visit the CD. These occasions are used to communicate information and distribute information communication materials to the members.

5.11 Challenges faced by PELUM Zambia Desk in redistributing print materials

The Zambia secretariat is responsible for the final distribution of printed materials of their own and from various sources including the Regional Desk (RD) to the members. The student found out that the most frequent channels used for redistribution of printed materials are meetings. Members who do not attend the meetings miss out on the publications. Posting and hand delivery of materials to member organisations is rarely done. For example, the *Ground Up* magazine which is supposed to be posted to members, according to an officer at the Country Desk (CD), is currently only distributed during meetings or visits from members. This is because there is no strict budget for the distribution of the magazine to members.

The CD does not have a predetermined distribution mechanism for printed materials. The problem of distribution of communication materials is also compounded by the fact that currently the CD does not have an Information Officer. This position has been vacant for sometime due to lack of funds. This has created a gap in communication according to the Country Desk Coordinator

(CDC). Funding for the activities of the CD such as distribution of materials is partly through membership fees. In-depth interviews revealed that only about 65 percent of the 33 members pay the fees. The RD also allocates some funds to the CD. In addition, the CD sources for additional funds through project proposals.

5.12 PELUM Association's views on adoption of LEISA by small scale

80 percent of the individuals interviewed at the Regional Desk (RD) said that the adoption of sustainable agricultural practices has improved among small scale farmers. According to the Campaign, Advocacy and Lobby (CAL) Officer, this is proved by the articles on farmers' experiences that are sent for publishing by members, feedback from the members in various forums that are held by Participatory Ecological Land Use Management (PELUM) Association and observations made during field visits. 40 percent expressed the need for more improvement in adoption. All the officers interviewed at the County Desk expressed the need for increased adoption of sustainable practices among small scale farmers. They said Low External Input Sustainable Agriculture (LEISA) adoption rates are still low though it was slightly higher in situations where one group of farmers copy sustainable agricultural practices from another group that has successfully adopted the practices. They attributed the low adoption rates to competing practices; long period of time required before one could see benefits; high labour requirement. A ccording to the Country Desk Coordinator agro-forestry takes about two years before the practicing farmers see benefits.

5.13 Adoption of LEISA among the small scale farmers in study area

Discussions with selected small scale farmers (with average farm size of 4 -10 hectares) in focus group discussions in Munyeu, Shampule, Mwembeshi and Mubanga (Westwood) area of Kafue district, Lusaka Province revealed that there

is still heavy dependence on external inputs, in particular chemical fertiliser, in crop production in this area. All the focus groups said that they used chemical fertilisers and pesticides to grow their crops. The major crop grown is maize. The other crops are vegetables such as tomatoes and rape. The crops are grown for home consumption and for sale.

The adoption of sustainable agricultural practices was very low despite the fact that all the groups were aware and in some instances had been trained in practices such as conservation farming, crop rotation, composting and organic farming by the government extension workers or other development agents. All the farmers in the groups were receiving subsized fertilisers under the government Fertiliser Support Programme (FSP). They all complained about the high cost of farming inputs, in particular fertilisers and the fact that they could not afford to buy the fertiliser at a commercial price. Despite this they were still convinced that it is impossible to harvest high crop yields without using chemical fertilisers. All but two farmers expressed ignorance about the existence of Participatory Ecological Land Use Management (PELUM) Association.

The farmers in the group at Munyeu all belonged to the Munyeu Multipurpose cooperative. They informed the student that there were 90 members in their cooperative and that the sole purpose for forming the cooperative was to access chemical fertilisers through the FSP. The farmers disclosed that most of the farmers in Munyeu in many cases applied chemical fertilisers and only in rare cases did they apply animal manure. The farmers actually believed that without chemical fertiliser application to a crop field, the yields would be lower. They said that they rarely applied animal manure to their fields because they did not have animals. They also disclosed that conservation farming in the area was introduced in the period 2002/2003 by one practicing farmer. The other farmers actually

laughed at him and did not learn from example even though his harvest was very good.

The small scale famers in the focus group at Shampule informed the student that they relied on chemical fertilisers and pesticides for the production of their crops. They rarely used animal manure for the production of their crop. They all belonged to a cooperative and were recipients of the government subsized fertilisers under the FSP. In fact one farmer even said that "a farmer needs enough fertiliser to have enough food." Like the farmers in Munyeu, they said that they were unable to use animal manure because they had no animals. They explained that some of them practiced conservation farming which they referred to as 'potholing'. They disclosed that this farming practice was introduced in the area by Programme Against Malnutrition (PAM), Africare and Dunavant Cotton. PAM also introduced crop rotation. The farmers said they were able to harvest good yields when they practiced conservation farming. The farmers disclosed that this type of farming was very labour intensive. For this reason they were reluctant to adopt the practice even though they were aware that it reduced the amount of chemical fertilisers required to produce a good yield.

In Mwembeshi the farmers in the focus group had similar experiences and sentiments with the farmers in Munyeu and Shampule. They disclosed that they had been trained in various sustainable agricultural practices such as conservation farming, crop rotation, and organic agriculture by the government extension workers, CLUSA (Cooperative League of the United States of America), Adventist Development Relief Agency (ADRA) and Africare .They informed the student that conservation farming was introduced in the area in 2000. Most of them started practicing soon after but stopped after some time because it was labour intensive in terms of preparation of planting stations and weeding. At the time of the focus discussion none of the farmers in the group were using organic

manure. They said this type of fertilisation was ideal for a small backyard garden but not a larger field. A few however still practiced crop rotation. They informed the student that they had tried to use organic herbicides on their crops but they found that they were ineffective compared to chemical herbicides.

The farmers in the focus group at Mubanga/Westwood said that they had been trained in crop rotation, conservation farming and composting by the government extension worker. They also said most had not adopted conservation farming because it was labour intensive.

5.13.1 Small scale farmers' sources of information and access to the media

The group at Munyeu informed the student that nearly every household in the community had a radio set. About 40 per cent of the households had a television set. Three of the five farmers in the group had cellular phones. There was no access to the internet in the area and access to newspapers was also poor. This was due to the fact that the daily papers were rarely sold in the area. The group at Shampule informed the student that a number of them had radio set and that they had access to Zambia National Broadcasting Corporation (ZNBC) radio 2 and 1. They also had access to Sky FM. About 7 households out of 270 in the area had television sets. Some of the farmers had cellular phones. The farmers said they had no access to newspapers accept when they travelled to Lusaka town. The farmers in the focus group said some of their colleagues were frequent listeners to radio programmes on agriculture. These individuals normally shared the information with others.

All the farmers in the focus group at Mwembeshi said that they had radio sets. They said they have access to radio 1, 2 and 4 of ZNBC as well as radio Mazabuka. Many of the individuals said they listen to radio 1 and 2. A few of the

farmers had television sets. The farmers said that they rarely access newspapers. Nearly every one in the group had a cellular phone. Only a few farmers had books on agriculture. The farmers at Mwembeshi informed the student that they obtained most of the information on farming practices through meetings. The farmers in the focus group at Mubanga/Westwood said most of them had radio sets and had access to radio 1 and 2 of ZNBC. A few had television sets. There was poor access to newspapers.

The student concludes that ZNBC radio 1 and 2 are the most frequently listened to media in the targeted study area. This media can be used in raising awareness on sustainable agricultural practices in these areas. However, it is important that personal communication methods are used by development agents to be able to convince the farmers to adopt the practices and this should be done over a period of time. From the four group discussions it was very clear that promoting practices such as conservation farming is not enough without changing the mind set of the farmers with regard to extensive use of chemical fertilisers. Development agents need to convince the farmers on the relative advantages of adopting conservation farming despite the fact that it is a labour intensive method. One of these ways would be to concentrate on the cost-benefit of the practice, for example, the fact that it reduces the chemical fertiliser requirement and increases crop yields.

5.13.2 Language

Effective communication with small scale farmers is not possible if done in a language that they are able to comprehend. Information communication materials such as posters, brochures or books should therefore be prepared in the language that they can read. In the case of the study area some farmers could read English while others could not. It is therefore important that both categories of farmers

are taken into consideration when printing communication materials. It is equally important to simplify the language in order to ensure maximum comprehension.

The individuals in the Munyeu group said that they would prefer information communication materials to be published in English. In fact only one person in the group, the female farmer, was unable to communicate in English. The people in Mwembeshi also informed the student that they would have no problem with reading information materials in English. Some of the people in the focus group at Mubanga/Westwood said they could not read and preferred they are trained through demonstrations on the farm and exchange visits.

5.14 Participation of PELUM Zambia members in the study

30 Participatory Ecological Land Use Management (PELUM) Association member organisations in Zambia participated in this study. A total of 38 individuals from 21 PELUM Association members successfully filled in questionnaires. 41 per cent of the respondents were female and 59 per cent were male. The gender balance reflected by this figure does not necessarily reflect gender imbalance in the study since the respondents were chosen using simple random methods. The age of the respondents ranged from 20 to 60 years and 56. 4 per cent were university graduates. Below are two figures showing the frequency distribution of these variables.

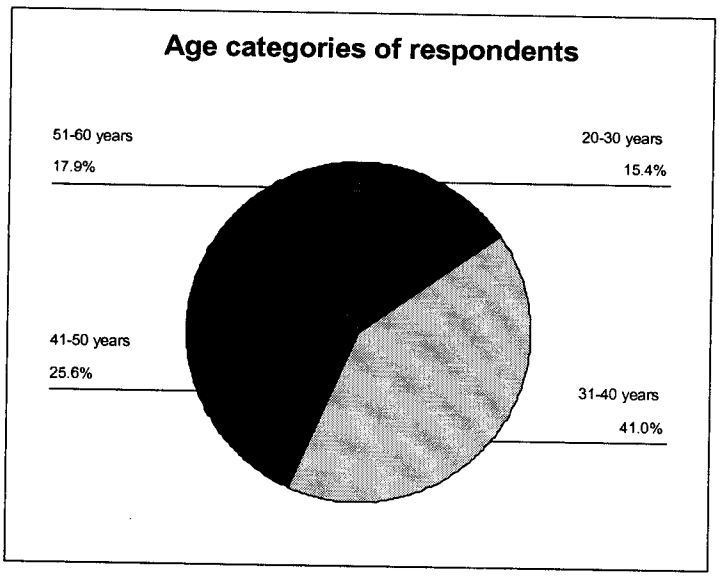


Fig 5.1

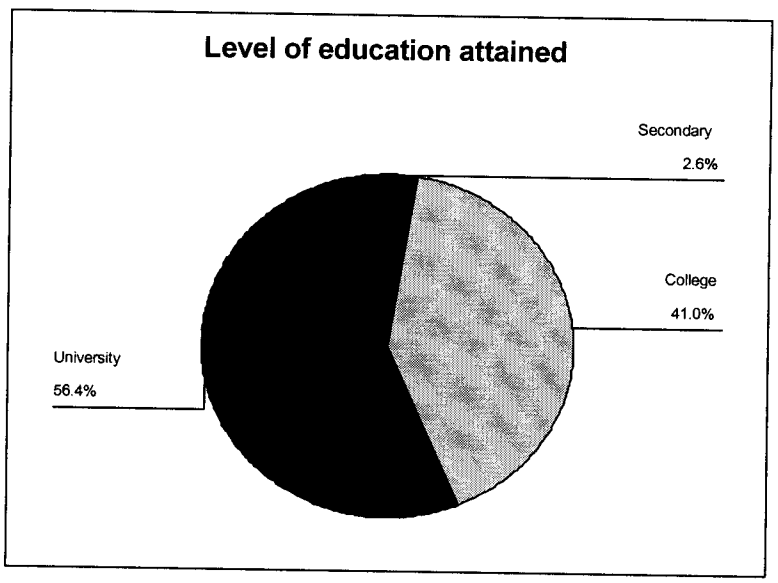


Fig. 5.2

66.7 per cent of the employees had been working with the employer organisation for a period of 0-5 years. This indicates that there are constant changes in the

levels of awareness about PELUM Association in the member organisations. In fact the student had experienced some incidences where certain individuals approached to respond to questionnaires declined simply because they were not aware that their employer organisation was a member of PELUM Association. This was also reflected by the fact that most individuals were not sure of the period of time their employer has been a member of PELUM Association or the category of membership they held with the association. As a result there were incidences where employees in the same organisation gave different answers to these questions.

5.15 Focus of PELUM Association member organisation

92.3 per cent of the respondents indicated that their employer organisations are involved in sustainable agriculture. 53.9 per cent indicated that their employer organisations were involved in natural resource management. 71.8 per cent also indicated that their employer organisations where also involved in other areas, for example, governance issues, disaster preparedness and mitigation, HIV/AIDS and gender.

61.5 per cent of the respondents are involved in formulating and implementing programmes in their organisation while 20.5 per cent are in administration. 17.9 per cent of the respondents are in management. This indicates that the survey managed to capture most of the views of individuals that are involved in directly implementing activities related to Low External Input Sustainable Agriculture (LEISA) among small scale farmers. In fact 74.4 per cent of the respondents indicated that their job responsibilities include providing extension services to small scale farmers.

5.16 Channels used by RD to communicate with member organisations

According to the respondents Participatory Ecological Land Use Management (PELUM) Regional Desk (RD) mainly communicates with their organisations using the internet, followed by the telephone, brochures and magazines respectively. Radio, television and newspapers are rarely used (see table 5.1 below). Some respondents also mentioned letters as another channel that the RD uses. 46. 2 per cent of the respondents indicated that PELUM publications were only sent to their organisations through electronic means (see figure 5.3 below).

Table 5.1 Communication channels PELUM RD uses in communicating with members

Media	Per cent (%) Yes	Per cent (%) No
Radio	2.6	97.4
Television	7.7	92.3
Internet	82.1	17.9
Magazine	53.8	46.2
Brochures	59	41
Telephone	61.5	38.5
Newspaper	5.1	94.9

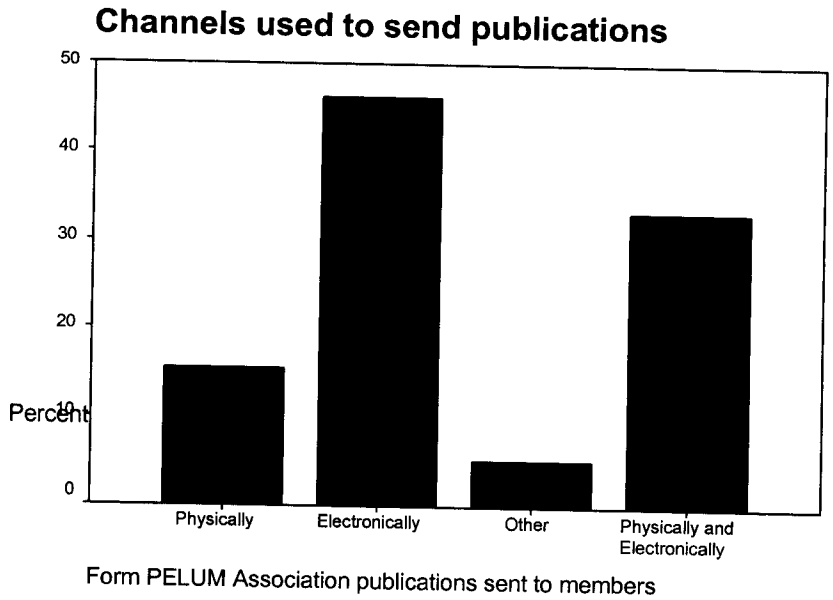


Fig. 5.3

5.17 Respondents' Access to Media

Access to media means being within reach of a mass medium. All the respondents have good access to media. 87.2 per cent have access to radio, 92.3 per cent to television, 100 per cent to internet, 92.3 per cent to newspapers and 100 per cent to telephones. 92.3 per cent of the respondents had no problems in accessing radio, 94.9 per cent television, 92.3 per cent internet, 94.9 per cent newspapers and 97.4 per cent telephone.

5.18 Respondents' exposure to media facilities

Exposure to media means actually tuning in to listen or see to a broadcast or reading literature. The study revealed that 51.3 per cent of the respondents read

e-mail messages very frequently, followed by 43.6 per cent who read newspapers very frequently. Table 3 shows the frequency with which the respondents listen to, view and read radio, television, newspapers, magazines and e-mails respectively.

Table 5.2 Respondents' frequency of tuning in, reading or using media

Media	**% Frequency**				
	Very freq.	**Freq.**	**Often**	**Rarely**	**Never**
Radio Listenership	33.3	12.8	35.9	15.4	2.6
T.V Viewership	23.1	28.2	43.6	5.1	0
Newspaper readership	43.6	30.8	17.9	7.7	0
Magazine readership	15.4	28.2	53.9	20.5	0
e-mail message readership	51.3	33.3	15.4	0	0

5.19 Respondents' readership of PELUM publications

33.3 per cent of the respondents often read Participatory Ecological Land Use Management (PELUM) Association publications (see figure 5.5 below). 35.9 per cent indicated that they had received the publications in the last three months (April-June 2008) while 41 per cent said they had not and 23.1 per cent were not sure.

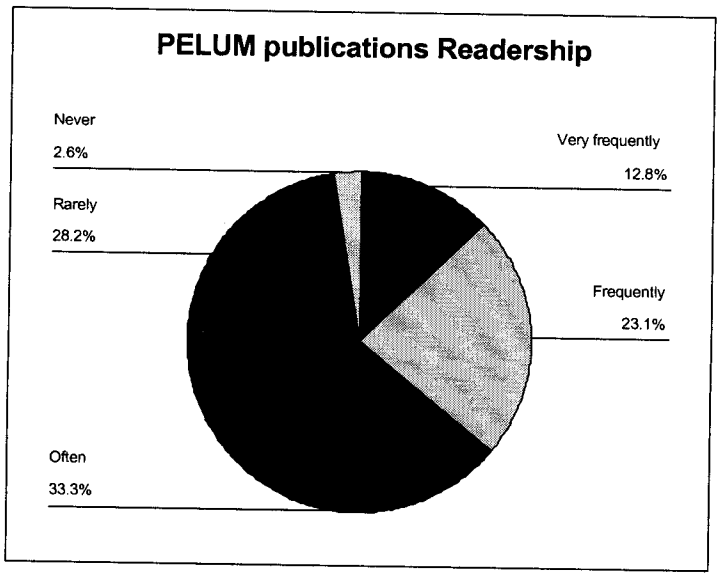


Fig. 5.4

The study also revealed that 51.3 per cent of the respondents had never browsed the PELUM Regional Desk (RD) website (figure 5.6) and that 46.2 per cent felt that the RD was not doing enough to communicate information on Low External Input Sustainable Agriculture (LEISA) (figure 5.7). As already alluded to the PELUM RD website has a lot of valuable information on the Association. It contains research reports as well as other documentation. The fact that the members rarely or never visit the website is a cause for concern because it means that they are not utilising or benefiting from the information. It is therefore important that PELUM RD finds a mechanism of alerting the member organisations about the website and the kind of information that it offers. PELUM RD should also approach their members and request those that have websites to put the PELUM RD website link on their websites.

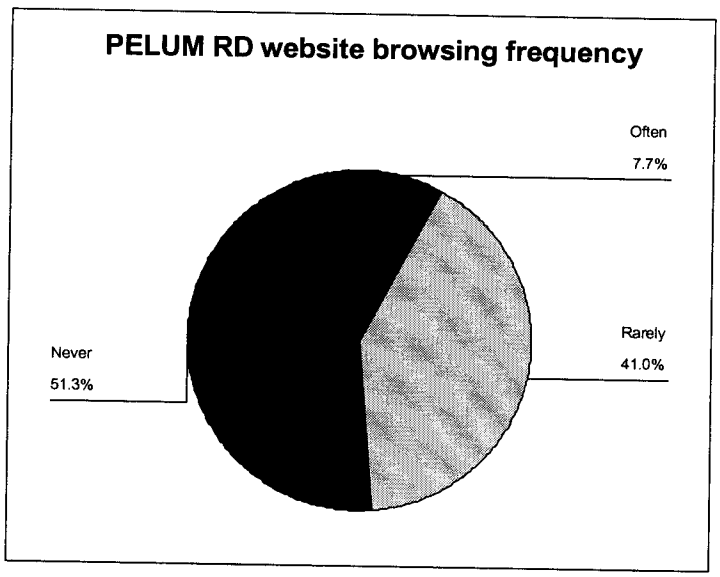

PELUM RD website browsing frequency
Often
7.7%
Rarely
41.0%
Never
51.3%

Fig. 5.5

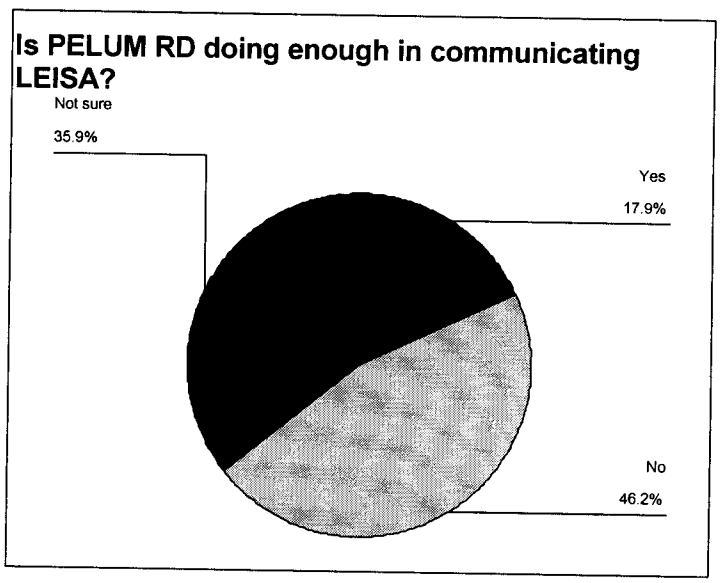

Is PELUM RD doing enough in communicating LEISA?
Not sure
35.9%
Yes
17.9%
No
46.2%

Fig. 5.6

5.20 Challenges faced by respondents in current communication with PELUM Association Regional and Country Desks

82.1 per cent of the respondents indicated that the information provided by Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) on Low External Input Sustainable Agriculture (LEISA) is useful to their work with small scale farmers. However, they indicated that there were some challenges in their current communication with PELUM RD and Country Desk. They highlighted the following challenges:

1 There is no physical contact with regional desk.
2 Lack of knowledge on the contact details and persons responsible for specific issues at the regional desk.
3 The roles of the regional desk are not clearly defined for the members.
4 PELUM Association has scaled down on capacity building for member organisations especially on sustainable agriculture and rural development issues.
5 Platform meetings are not held often by the regional and country desks.
6 Lack of contact with Zambia Country desk on sustainable agriculture level
7 Members do not receive publications on LEISA.
8 Sometimes electronically sent information does not reach the intended receiver.
9 Lack of timely communication resulting in short notices to attend meetings to members.
10 Regular internet access in some member organisations is affected by power cuts.

5.21 Respondents' satisfaction current communication with PELUM RD

Over 50 per cent of the respondents indicated that they were not satisfied with Participatory Ecological Land Use Management (PELUM) Association Regional Desk's current communication with their organisation (Table 5.3).

Table 5.3 Satisfaction with PELUM RD's communication with members

Satisfaction with PELUM RD's communication with members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	43.6	43.6	43.6
	No	20	51.3	51.3	94.9
	Not sure	2	5.1	5.1	100.0
	Total	39	100.0	100.0	

The following suggestions were made on how communication could be improved between the PELUM RD, Country Desk and the general membership in Zambia

5.21.1 Website

1 Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) should update the website regularly. The members should be informed about the new additions to the websites, through e-mails.

2 The regional website should be linked with the members' websites.

3 The public should be informed about the existence of the PELUM Association RD website.

5.21.2 Line of communication

1 Line of communication between various structures of Participatory Ecological Land Use Management (PELUM) Association should be clarified
2 Regional Desk (RD) should continue communicating through the Zambia County Desk (CD) and provide timely information.
3 The RD should inform the Zambia desk on what is happening in the region on environmental issues.
4 The Memoradum of understanding between the RD, CD and members should be operationalised.
5 The RD and CD's roles and responsibilities should be clearly defined to the membership

5.21.3 Channels of communication

1 Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) and Country Desk (CD) need to improve its channel of communication and agree with the members on the most convenient and available modes of communication.
2 The RD must use a multi-media channel strategy for communication. They should utilise community radio stations and also go out to sensitise, educate, for example through drama and plays.

5.21.4 Physical/personal communication

1 Physical contact should be improved especially through use of phone, posted and hand delivered mails.

2 Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) and Country Desk (CD) should visit members in order to appreciate the problems they face.

3 There should be more meetings among the PELUM members.

4 Personal communication should improve through more personal interactions.

5 There should be a platform where PELUM members can meet and know each other. There is also need for more one on one communication.

6 Dependence on the internet for communication with members is not ideal for members without access to internet and mobile phones.

7 Physical copies of the bulletin should be mailed to the members on a quarterly basis

5.21.5 Networking

1 Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) and Country Desk (CD) should improve networking and coordination

5.21.6 Database

1 Participatory Ecological Land Use Management (PELUM) Association Regional Desk (RD) and Country Desk (CD) should develop a database with members' profiles that can be electronically accessed by the members.

5.21.7 *Ground Up* Magazine

1 Publish and distribute more magazines. Some organisations want to receive more copies of the magazine so that they can re-distribute to their field officers

2 Publications should be distributed to the Country Desk which then is supposed to distribute the magazines equally to the membership. The latest *Ground Up* magazine should be sent to members regularly

3 Participatory Ecological Land Use Management (PELUM) Association should allow associate partner organisations to provide input for the Ground up magazine.

4 A section on "How to Do" demonstration column in *Ground Up* magazine would be beneficial to members

5.21.8 Public Mass media

1 Participatory Ecological Land Use Management (PELUM) Association should use community radio stations and local languages

2 PELUM Association should hold forums and radio/television publicity information programmes

5.21.9 Internet/cellular phones

1 Use more electronic media for communicating with members with access to such media. Participatory Ecological Land Use Management (PELUM) Association can be sending more regular e-mail updates to members

2 PELUM Association should communicate with member organisations through e-mails,

3 There should be more information sharing. Spot news should be disseminated to the Country Desk who should then communicate with the members

5.21.10 Audience

1 There is need to reach more small scale farmers

5.21.11 Capacity building

1 Participatory Ecological Land Use Management (PELUM) Association should continue with members' capacity building in agriculture and rural development
2 Provide adequate information and train members

5.21.12 Visibility

1 Participatory Ecological Land Use Management (PELUM) Association should sell itself much more so that it becomes more visible.
2 Organise open days so that different organisations can see what Participatory Ecological Land Use Management (PELUM) Association is doing

5.21.13 Monitoring

1 Participatory Ecological Land Use Management (PELUM) Association should ensure that the intended receivers of its messages actually receive the messages

Chapter 6

Recommendations and Conclusion

6.0 Introduction

In this chapter the student makes recommendations to Participatory Ecological Land Use Management (PELUM) Association based on the findings of the study that have been stated in chapter 5. The student also gives the concluding remarks.

6.1 Recommendations

Participatory Ecological Land Use Management (PELUM) Association through its secretariats at regional and country levels and member organisations in Zambia is contributing a lot to the promotion of Low External Input Sustainable Agriculture (LEISA). PELUM Regional Desk (RD)'s in the recent past has increasingly focused its interventions at influencing policy processes that impact on small scale farmers in the East, Central and Southern African regions. The study revealed that the Association's initial strategy of intensified efforts at promoting sustainable agriculture, through capacity building of member organisations has given way to increased focus on issues of trade and funding to agriculture. This study has however pointed to the need for work in terms of increasing the adoption of sustainable agricultural practices as evidenced by the field visits in Kafue district and submissions of the member organisations through their employees who participated in the study.

The level of awareness on sustainable agricultural practices among the small scale farmers included in the survey was quite high, however, very few of the farmers have adopted the practices. PELUM Association, through its member

organisations, in Zambia therefore needs to come up with strategies of increasing adoption of LEISA among small scale farmers. Through this study the student proposes that advocacy initiatives that PELUM RD has been recently conducting such as the one on promotion of indigenous food also be directed at promoting LEISA. Small scale farmers are still sceptical at practising sustainable agricultural practices despite being aware of the advantages of practices such as conservation farming, crop rotation, agro-forestry, organic fertilisation. In their view these practices do not offer relative advantage over conventional agricultural practices. Social change campaigns using multi media-channels can go a long way in changing the mind set of most small scale farmers. These individuals need to appreciate that successful crop production is not only possible with high external inputs such as chemical fertilisers. They need to be convinced that sustainable agricultural practices not only makes them independent in terms of relying on subsized inputs but also ensures that the land is viable for future food production.

The student deduced from the qualitative data that most of the work on promoting sustainable agricultural practices has been focused on awareness raising. Now it is important that development organisations such as PELUM move to the next stage of promoting adoption of these practices among the small scale farmers. The two pronged strategy of engaging policy makers to adopt policies that are favourable to small scale farmers and engaging the farmers to change their attitudes towards sustainable agricultural practices will go a long way in yielding positive change. It will also bring about development.

Interpersonal communication could be instrumental in changing the small scale farmers' perceptions. As already alluded to in this paper, some of the officers that were involved in the in-depth discussions at PELUM RD and Country Desk shared that farmer to farmer extension has been effective in increasing adoption

among some communities. But it is also important to note that this strategy may not be effective in some social systems. For example, the student learnt from the government extension officer in Mwembeshi, that lateral learning between the farmers has not been effective. In this case the farmers do not learn from the examples of their fellow farmers because in their judgement they cannot learn from someone who is at their level. The use of external development agents in such a situation then becomes critical. Interpersonal channels of communication in rural areas are highly respected and therefore more effective. They are considered to be truthful, authentic, reliable and dependable. They are largely respected because they enable the local people to discuss their problems on a face-to-face basis and also offer opportunities for immediate feedback.

PELUM Association needs to continue raising awareness on sustainable agriculture. Most of the current efforts are currently aimed at member organisations. There is need to directly appeal to the small scale farmers. This could be done by engaging more with electronic media such as radio, which is an easily accessible media for small scale farmers. This media is excellent support media. It is good for strengthening motivation and for drawing attention to new ideas and techniques though weak in providing detailed information and training. The occurrence of community radio stations in all provinces of Zambia makes the case for radio a very good one. One PELUM RD mentioned that radio is rarely used because it is expensive; however, community radio is affordable because it does not operate on a commercial basis like public media. In fact, most community radio stations use local languages and facilitate localised information.

Most of the small scale farmers in the focus group discussion said that they have radio sets and that they often tune to listen to programmes on farming. One member of the focus group, a local headman went so far as to say that he experimented with most of the information that he obtained from radio

programmes. The local traditional leaders (who are often opinion leaders in their communities) in the Zambian context are highly respected by their fellow community members and can be a good avenue for promoting the adoption of LEISA among most small scale farmers who mainly reside in rural areas on traditional or chief's land.

Another media which is ideal for the rural small scale farmers is folk media. PELUM Association's communication strategy mentions drama and song as a communication channel. However, the student observed that this media is rarely used. Colle and Roman (2001) argue that traditional folk media are cultural resources that accumulate indigenous knowledge, experiences and expressions passed down from generation to generation. Therefore the use of proverbs and poems, songs and dances, puppet plays and shows, rhythms and beats bring a strong sense of cultural identity which can be a potent conduit for development (ibid.). In many cases, folk media are the traditional conduits of indigenous knowledge, experience and culture. Creative use of these cultural resources in communities where they are popular and well entrenched can be a subtle and effective way of introducing development ideas and messages as they offer an effective means to integrate local knowledge with new scientific knowledge from outside sources.

The fact that PELUM Association has a written communication strategy is a good starting point for handling the communication challenges that the association faces. The regional nature of the association requires that there is effective communication among all the organs. In Zambia, it is important that the member organisations, Country Desk and the Regional desk are clear about their roles and responsibilities. This can only happen if there is effective communication.

This study has revealed that the intra-organisational communication in PELUM Association in Zambia has not been very effective despite having a communication strategy document. The student noted that the communication strategy document which was mainly formulated for internal communication has not been effectively translated into practice. The current PELUM Association communication strategy is strong in terms of internal communication in the association. It contains extensive information on the intended senders and receivers o f messages as well as the c hannels for their transmission. It also includes a mechanisms of publicising the strategy to staff at the RD, CDs and the general membership through awareness campaigns, PELUM publications such as the *Ground Up* and *Bulletin.*

The findings of this study reveal that the communication strategy has not been effectively implemented, as depicted in chapter 5. Some staff members at the RD and CD were not very familiar with the contents of the document. This affects their ability to carry out their responsibilities as assigned to them in the strategy. The lack of awareness of the contents and ownership of the organisational communication strategy by some officers at the RD and the CD stifles effective implementation of the communication strategy. This is evidenced by the fact that the CD does not redistribute the *Ground Up* magazine on time to the members despite the fact that the strategy document has clearly stipulated that "the CWG/CDs will be responsible for in country distribution within two weeks of receiving the new issue of the magazine. This ensures that the readers get the issue while it is still current" (PELUM, undated). Further the strategy stipulates that "each CWG/CD to come up with at least three channels of distributing the magazine in their county other than through PELUM offices" (ibid.). However, current PELUM Zambia mainly distributes the magazine through the office and meetings. This results in some members not receiving the magazine at all in some cases. The student therefore recommends that the RD and the CD find ways of

raising funds for distribution purposes through the post or hand deliveries in the case of Lusaka based organisations. PELUM should also adequately publicise the magazine in order to make sales. Currently copies of the magazine are offered on sale but it was evident during the study that some member organisations were not aware of this. The RD therefore needs to adequately market the magazine. One option could be by collaborating with some book stores that have good distribution networks.

In addition a number of respondents of the quantitative survey were not very sure of the roles and responsibilities of the RD and CD. The student therefore recommends that PELUM Association reconsiders publicising the communication strategy document among employees at the RD and CD as well as the member organisations. This is essential for the smooth implementation of the strategy. It is also important that the CD, which is the secretariat for the Country Working Group (CWG) in Zambia, explains its roles and responsibilities as well as those of the RD. It is also equally important that the members know their roles and responsibilities as well. The members should also be made aware of the MoU between the RD and CD.

The student also notes that PELUM Zambia Association is seven years olds, and still establishing itself. For this reason it is important that members are constantly reminded of what the association is all about and how they are supposed to contribute to its growth. This is important in avoiding misunderstandings. The student observed that membership to PELUM Zambia has not been institutionalised in some member organisations. In many cases apart from the focal point person for PELUM, the other members of staff in the member organisations included in this survey were not aware of the association. The student therefore recommends that PELUM Zambia lobbies the focal point persons to raise awareness of the association among their fellow employees. This

is important in maintaining continuity even when the focal person leaves a member organisation. It is also critical for the institutional memory in the member organisation and ensuring full participation of the member organisations in PELUM programmes and activities. The student encountered situations where a certain member organisation had members of staff who were not sure who in their organisation was responsible for PELUM Association issues.

The constant staff turnover as evidenced by the number of respondents who indicated that they had worked with their employers for 0-5 years is also a good reason for PELUM Zambia CD to be constantly in touch with the member organisations in order to keep them informed about the association as well as engaging them in some of the activities so that the feel a sense of belonging and ownership. PELUM can learn from other networks in this regard, for example, the Civil Society for Poverty Reduction (CSPR) which organises member organisations around thematic areas and solicits their input regularly through quarterly thematic meetings. Of course, the student is aware that funding may be a constraining factor for such an initiative. However, if it is properly incorporated in the funding plan some funders may be willing to support such an initiative since it promotes participation.

The study established that currently PELUM RD and CD rely a lot on the internet and printed materials for information sharing. In terms of access to the internet, the study revealed that all the respondents in the quantitative survey had access to this media. However, the study also revealed that most of the respondents rarely browsed the PELUM RD website. This should be a cause for concern as a lot of information and documentation is posted on the website. PELUM RD should therefore engage in ways that will increase the use of its website by the members. This can be done by constantly updating the website and informing the members whenever this is done. PELUM RD can also include

web links to member organisations that have websites on its website. At the same time the RD can also avail its web link for inclusion on member organisations' websites.

In terms of print media there is need to establish good distribution channels so that the members and other intended targets receive the issues on time. In reference to small scale farmers most of them are located in areas that do not have internet services. Other communication channels that are relevant should be used. Printed materials have a limitation in cases where the farmers are illiterate or unable to read English since all publications are currently in English. However, they can provide a vitally important and cheap source of reference for extension agents and for literates among the rural population.

Effective communication can only be said to have taken place when there is feedback. Feedback is therefore essential in communication whether it is positive or negative. The fact that it has been quite difficult for PELUM RD to get feedback on most of its messages is a cause for concern. The lack of feedback could be due to the fact that the intended receivers of the messages do not actually receive the message or rarely read the messages as was established in the quantitative survey in this study. The study indicated that some channels used for sending information such as the website is rarely or never visited by the intended message receivers. PELUM RD therefore needs to direct messages, for example e-mails, to specific persons. It is also important that follow up is made through other media such as phones. In terms of the website it is important that it is highly publicised to the members and the general public as has already been alluded to.

The lack of monitoring mechanisms in terms of communication messages is also another limiting factor in terms of effective communication. Monitoring helps in

detecting shortcomings and implementing remedial actions. The PELUM communication strategy therefore should be incorporated with a systematic monitoring tool. This could begin by putting a time frame to the strategic plan. Currently the communication strategy has no time frame. It is also important to set monitoring indicators based on the objectives of the strategy. The strategy also needs to improve in terms of external communication. One of the suggested areas of improvement by the respondents of the quantitative survey is that PELUM Association should become visible. Visibility can be enhanced by strengthening external communication.

Currently the resource centre is rarely used by the members and the general public. PELUM RD should consider publicising this facility so that it is used for the intended purpose.

6.2 Conclusion

The majority of small scale farmers depend on agricultural land for own food production. Low External Input Sustainable Agriculture (LEISA) is one way of improving food security among these resource poor small scale farmers and ensuring that their right to food is respected, protected and fulfilled. "Adequate food is a human right, a right of every individual in every country (FAO, 2006, p. 1)." The Committee on Economic, Social and Cultural rights (cited in: FAO, 2006, p. 4), urges that "...accessibility of...food in ways that are sustainable..." Sustainable production of food ensures that agricultural land is preserved for future use and minimises the cost of inputs required in food production. Heavy External Input Agriculture (HEIA), on the other hand is unsustainable in terms of financial costs and contributes to environmental degradation.

Most small scale farmers are unable to afford expensive inputs such as chemical fertilisers, pesticides and herbicides. All the small scale farmers included in this study were beneficiaries of subsidised fertilisers under the Fertiliser Support Programme (FSP). This government programme allows individuals to receive fertiliser at half of the commercial price. The beneficiaries graduate from the programme after three years. Focus group discussions with some small scale farmers in Kafue district revealed that nearly all of them are still unable to afford chemical fertilisers despite graduating from the FSP. This scenario has made their situation desperate. But this should not be the case if the small scale farmers use LEISA. Communication can play a vital role in convincing the small scale farmers to adopt LEISA. However, it is important that development agents understand and apply communication mechanisms that are relevant and can appeal to the small scale farmers. To this end communication should be assigned a central role in any human endeavour where development is the goal. Communication approaches in a development strategy reveal people's underlying attitudes and traditional wisdom. It also helps people to adapt their views and to acquire new knowledge and skills and spreads new social messages to large audiences.

PELUM Association is playing a vital role in promoting the adoption of LEISA among small scale farmers. However, more can be done in order to increase the adoption of LEISA against a backdrop of competing practices such as HEIA. In its formative years, PELUM Association conducted a lot of capacity building in sustainable agriculture among its members in Zambia. However over the years this has lessened somewhat as the association has concentrated more at influencing policy processes at international, regional and national level. This study revealed that there is still a lot that needs to be done in terms of increasing adoption levels of sustainable agricultural practices in Zambia. It also established that there is a lot of awareness on these practices among the farmers, which is not matched by corresponding adoption. A case in point is conservation that was

highly promoted among small scale farmers in Zambia as a response to recurrent droughts and high fertiliser prices in the recent past. The study revealed that some farmers have tried the practice, but not adopted it. This means that development agents like PELUM Association now need to focus on increasing adoption of the practice. In order to do this there is need for capacity building among member organisations on how this can be effectively done.

Interpersonal communication channels are particularly relevant for communicating LEISA among small scale farmers. Most of these farmers reside in rural areas where traditional forms of communication are highly respected and trusted. These forms of communication include meetings and folk media (puppets, song and dance, poems and plays e.t.c). Mass media channels, in particular radio is also useful since it is widely accessible among rural small scale farmers. This form of media is now more widespread in Zambia through community media. PELUM Association should therefore take advantage of the availability of community radio stations throughout the country to communicate information on LEISA. The community radio stations also use local languages which are relevant for the community members in their immediate vicinity. Print media which is currently highly utilised by PELUM RD is only directly useful for literate small scale farmers.

The nature of PELUM Association as a regional network requires that there is effective communication among the member organisations, regional and country secretariats. PELUM regional and country desks have an important role to play in coordinating this. The RD is currently using research, campaign, advocacy, lobbying, networking and communication as some of the strategies in promoting LEISA among member organisations and small scale farmers. The study revealed that 46.2 per cent of the members think that the RD is currently not doing enough in promoting LEISA and focus group discussions with small scale

farmers in Kafue district revealed that even though the farmers were aware of LEISA, very few were practicing. PELUM RD therefore needs to improve communication with PELUM Zambia. This can be done through effective implementation of its communication strategy document. The RD should also engage in more personal communication with the CD and the members, as suggested by many of the respondents. This will improve on feedback mechanisms.

The RD should also incorporate a monitoring and evaluation mechanism to its communication strategy and strengthen external communication elements of the strategy. This can be done through forging partnerships with public and private media organisations. The PELUM communication stipulates that as much as possible the CWGs should form partnerships with the community, public and private media in order to get free space but this is only being done to a limited extent. The RD and the CD should therefore collaborate in forming these strategic alliances. The community, private and public media have a wider audience and channels of distributing messages and will compliment PELUM Association's current efforts. They can also increase on the association's visibility.

REFERENCES

Agregheore, E. M, 2006. Country pasture/forage resource profiles: Zambia, Rome: Food and Agriculture Organisation of the United Nations at http://www.fao.org/ag/AGP/agric/doc/counprof/zambia/zambia.htm#Toc131995461(accessed: 02/07/2008)

Alonge, A. J., and R. A. Martin. 1995. "Assessment of the adoption of sustainable agricultural practices: implications for agricultural education." Journal of Agricultural education, 3(3), 34-41 at http://pubs.aged.tamu.edu/jae/pdf/vol36/36-03-34.pdf (accessed: 21/08/2007)

Answers.com, 2007. Communication at http://www.answers.com/topic/communication?cat=health (accessed: 21/08/2007)

Bataille, J. L., 1998. Opinion leadership, at http://www.ciadvertising.org/studies/student/98_spring/theory/opinion.html (accessed: 20/07/2007)

Bless, C. and P. Achola, 1988. Fundamentals of Social Research Methods: An

African Perspective, Lusaka

Castello, R. D., P. M. Braun, (eds.), 2006. Framework on effective rural communication for development, Rome: FAO and GTZ at ftp://ftp.fao.org/docrep/fao/009/a0892e/a0892e00.pdf (accessed: 2/08/2007)

Central Intelligence Agency, 2008. The World Factbook at https://www.cia.gov/library/publications/the-world-factbook/geos/za.html (accessed: 2/07/2008)

ciadvertising, 1998. Diffusion of innovation theory at http://www.ciadvertising.org/studies/student/98_fall/theory/hornor/paper1.htm (accessed: 2/08/2007)

ciadvertising, 1999. Diffusion of innovation theory at http://www.ciadvertising.org/studies/student/99_fall/theory/millman/Diffusion.htm (accessed: 2/08/2007)

Colle, R. D. and R. Roman, 2001. Modules for training telecentre staffs: An interim report with sample modules. Cornell University at

http://www.itu.int/ITUD/unive_access/telecentre/document/ModTraining Telestaff.pdf (accessed: 28/07/2007)

Crowder, L. V., W. Lindley, W. Truelove, J. P. Ilboudo and R. D. Castello, 1998. Knowledge and information for food security in Africa: from traditional media to the internet, Food and Agriculture Organisation, http://www.fao.org/docrep/w9290e/w9290e00.htm (accessed: 18/07/2007)

Drost, D., G. Long, D. Wilson, B.Miller and W. Campbel. 1996. "Barriers to adopting sustainable practice". Journal of Extension, 34 (6) 1077-5315 at http://www.joe.org/joe/1996december/al.html (accessed: 21/08/2007)

D'Souza, G., D. Cyphers and T. Phipps. 1993. Factors affecting the adoption of sustainable agricultural practices at http://ageconsearch.umn.edu/bitstream/123456788/3689/1/22020159.pdf (accessed: 21/08/2007)

Elliot, H., and P. T. Perrault, 2006. Zambia: a quiet crisis in African Research and Development in: Agricultural R & D in the developing world: Too little, too late?, P. G. Pardey, J. M. Alston, R. R. Piggott, Ed, 227, Washington, D. C.: International Food Policy Research Institute,

http://www.ifpi.org/pubs/book/oc51/oc51ch09.pdf (accessed: 11/06/2007)

Export board of Zambia, 1995-96. Geography and Climate, Lusaka: Export board of Zambia at http://www.zamnet.zm/zamnet/zambus/ebz/climate.htm (accessed 5/01/2008)

Food and Agriculture Organisation of the United Nations, 2006. The right to food in practice: implementation at the national level, Rome: FAO

Fraser, C. and J. Villet, 1994. Communication: A key to human development, Rome: FAO at http://www.fao.org/docrep/t1815e/t1815e03.htm (accessed 25/05/2007)

Gartshore D., 2004. Communication and Cooperation: Technology Transfer on Australian Family Cotton Farms. Ph.D. Thesis, Griffith University at http://proceedings.informingscience.org/InSITE2004/068garts.pdf. (accessed:4/01/2008)

Gold, M.V., 1999. "Sustainable Agriculture: Definitions and Terms". Special Reference Briefs series, SRB 99-02. at

http://www.nal.usda.gove/afsic/AFSIC_pubs/srb9902.htm (accessed: 20/07/2007)

Haggblade, S. and G. Tembo, 2003. "Early evidence on conservation farming in Zambia." In: Reconciling Rural Poverty and Resource Conservation: Identifying Relationships and remedies: International Workshop, Cornell University, Ithaca, New York, May 2-3, 2003. http://www.aem.cornell.edu/special:programes/AFSNRM/poverty/papers/individual/papers/Haggblade,%20Tembo.pdf (accessed: 11/06/2007)

International Institute for Sustainable Development, 2006. Sustainable Agriculture and Rural Development. At http://www.iisd.org/info/ss9507.htm

Isman, A. 2005. "Diffusion of Distance Education in North Cyprus." International Journal of Instructional Technology and Distance Learning. At http://www.itdl.org/Journal/Jun_05/article06.htm (accessed: 4/01/2008)

Kabange, S. C., 2008. "HIV prevalence drops by 1.3%." In: Africa News. Africa Interactive. At http://www.africanews.com/site/List_messages/18536 (accessed: 25/08/2008)

Kessler, J. J. and M. Moolhuijzen. 1994 "Low External Input Sustainable Agriculture: expectations and realities" Netherlands Journal of Agricultural Science, (42) 3, 181-194 at http://library.wur.n (accessed: 2/07/2007)

Lim, K., 2004. "Diffusion of Innovation" Theory.Isthereason at http://theoryisthereason.com/index.php?s=Diffusion+of+innovation&submit=Go (accessed: 4/01/2008)

Makungu, K., 2007. Class lecture notes: Communication of innovations, University of Zambia: Lusaka

Mefalopulos, P. and C. Kamlongera, 2004. Participatory communication strategy design: a handbook. 2nd ed. Rome: SADC Centre of Communication for Development/ Food and Agriculture Organisation of the United Nations

Mengal, M., 2000. Study of constraints and problems in sustainable agriculture as perceived by extension agents and farmers at Taluka Nushki, district Chagai Balochistan [Pakistan], Tandojam: SAUT

Mukute, M., 2004. Tracing PELUM's developmental journey: experiences and lessons from an African regional NGOs network, Lusaka: PELUM Association

National Safety Council, 2005. Environmental Health Centre: Glossary at http://www.nsc.org (accessed: 2/07/2007)

Nkunika, B., 2007. Class lecture notes: Communication theory and process, University of Zambia: Lusaka

Onabanjo, F., 2005. "Social mobilisation and communication training models for community groups in Nigeria." Stud. tribes tribals 3(1), 27-35 at http://www.krepublishers.com/02_Journals (accessed: 28/07/2007)

O'Rourke, T., 2000. "Data analysis: The art and science of coding and entering data." American Journal of Health studies at http://findarticles.com/p/articles/mi_m0CTG/is_3_16/ai_72731731 (accessed: 10/07/2008)

Orr, G., 2003. Diffusion of innovations by Everett Rogers (1995) at http://www.stanford.edu/class/symbsys205/Diffusion%20of%20Innovation.htm (accessed: 2/08/2007)

PELUM Association, 2005. Strengthening PELUM's capacity to enhance food security and sustainable livelihoods in East, Central and Southern Africa, Lusaka: PELUM Regional Desk

PELUM Association, 2008. PELUM Association at http://www.pelumrd.org (accessed: 14/07/2008)

Phiri, N. P., 2007. Evaluating communication strategies used in enhancing the lives of people with disabilities: A case study of the Zambia National Association of Disabled Women (ZNADWO) in Lusaka. M.C.D. Dissertation, University of Zambia.

Raczynski, J.M. and R.J. DiClemente. 1999. Handbook of Health Promotion and Disease Prevention. Springer

Rangi, D., R. Day, and J.F. Asaba, 2006. "Knowledge sharing, information and innovation." In IAALD Chapter Conference: Paper presentation, Intercontinental Hotel, Nairobi, May 21-26 2006. CAB International Africa Regional Centre. At http://www.livelihoods.org/post/Docs/IAALD/010Rangi.doc

Rogers, E.M., 1993. Perspectives on development, in: Perspectives on development, K. S. Nair and S. A. White, Ed, 35-47, New Delhi: Sage.

Rogers, E.M., U.E. Medina, M.A. Rivera and C.J. Wiley, 2005. "Complex Adaptive Systems and the Diffusion of Innovations." The Public Sector

Innovation Journal. 10(3). At http://www.innovation.cc/volumes-issues/rogers-adaptivesystem7final.pdf (accessed: 5/01/2008)

Roger, R.K., 2007. Computer Anxiety and Innovativeness as Predictions of Technology Integration. Dissertation, Texas Tech University.

Smaldone, J. P., 1991. Zambia: Chapter 1D. Independence: The First Decade, 1964-74, in: Countries of the World, Bureau Development, Inc at http://www.highbeam.com (accessed: 20/06/2007)

Syque, 2002-2007, SMCR Model, at http://www.changeminds.org/disciplines/communication/smcr.htm (accessed: 1/09/2007)

Population Reference Bureau, 2006. 2006 World population data sheet, http://www.prb.org/pdf06/06worlddatasheet.pdf p 6 (accessed 23, July, 2007)

Population Reference Bureau, 2007. Zambia, at http://www.prb.org/Countries/Zambia.aspx?p=1 (accessed: 23/07/2007)

Underwood, M., 2003. Introductory and basic concepts, at http://www.cultsock.ndirect.co.uk/MUHome/cshtml/introductory/smcr.html (accessed: 1/09/2007)

United Nations Development Programme, 2006. Human development report 2006, New York: United Nations Development Programme at http://hdr.undp.org/hdr2006/pdfs/report/HDR06-complete.pdf (accessed: 20/06/2007)

University of Twente, 2004. Diffusion of innovations theory at http://www.tcw.utwente.nl (accessed: 20/07/2007)

United States Department of State, 2007. Background note: Zambia at http://www.state.gov (accessed: 20/06/2007)

Waisbord, S., 2001. Family tree of theories, methodologies and strategies in development communication, Rockfeller Foundation at http://www.communicationforsocialchnage.org/pdf/familytree.pdf (accessed: 28/07/2007)

Wikibooks, 2006. Wikimedia Foundation, Inc at http://en.wikibook.org/wiki/communication_Theaory/Print_version (accessed: 13/08/2007)

Wikipedia, the free encyclopedia, 2007a. Communication, Wikimedia Foundation, inc. at http://en.wikipedia.org/wiki/Communication (accessed: 21/07/2007)

Wikipedia, the free encyclopedia, 2007b. Intrapersonal communication, Wikimedia Foundation, inc. at http://en.wikipedia.org/wiki/Intrapersonal_communcation (accessed: 1/09/2009)

Wikipedia, the free encyclopedia, 2007c. Interpersonal communication, Wikimedia Foundation, inc. at http://en.wikipedia.org/wiki/Interpersonal_communication (accessed: 1/09/2007)

Wikipedia, the free encyclopedia, 2008. Diffusion of innovations, Wikimedia Foundation, inc. at http://en.wikipedia.org/wiki/Diffusion_of_innovations (accessed: 3/01/2008)

World Bank group, 2006. Agriculture Investment Sourcebook, Washington, D.C.: World Bank Group at http://go.worldbank.orgOE9D13C800 (Accessed: 1/09/2008)

APPENDICES

Appendix 1: Questionnaire

Dear Respondent,

You have been selected to participant in a PELUM Regional Desk research on the effectiveness of the organisation's current communication strategy. This questionnaire is intended to collect information from the general PELUM Zambia membership on their assessment of the communication tools PELUM Regional Desk is utilising in communicating information on low external input sustainable agriculture. The collected information will be used to evaluate the current communication strategy with a view of making it more responsive to the needs of the members and particularly small scale farmers, who are the final intended beneficiaries of information on low external input sustainable agriculture. In a bid to maintain confidentiality, all the names of the respondents will remain anonymous.

INSTRUCTIONS

1. Tick in the box provided for your response.
2. Write brief responses where space is provided.

A) RESPONDENT'S PERSONAL INFORMATION

1. What is your gender?
    1. Female [ ]
    2. Male [ ]
2. How old are you? _____

B) RESPONDENT'S LEVEL OF EDUCATION

3. What level of education have you attained?

   1. Primary [ ]

   2. Secondary [ ]

   3. College [ ]

   4. University [ ]

C) RESPONDENT'S PROFESSIONAL INFORMATION

4. Which organisation do you work for? _____

5. What is the focus of your organisation's development work?

   1. Sustainable agriculture [ ]

   2. Natural resource conservation [ ]

   Other (please indicate on space provided) _____

6. How long have you been working with this organisation?

   1. 0-5 yrs [ ]

   2. 6-10 yrs [ ]

   3. 10-above yrs [ ]

7. What is your job title? _____

8. Does your job involve providing extension services to small scale farmers?

   1. Yes [ ]

   2. No [ ]

D) INFORMATION ON PELUM ASSOCIATION MEMBERSHIP

9. How long has your employer organisation been a member of PELUM Association?

   1. 0-4 yrs [ ]

   2. 5-8 yrs [ ]

   3. 9-12 yrs [ ]

10. What type of membership does your employer hold with PELUM Association?

    1. Full [ ]

2. Associate [ ]

3. Sponsor [ ]

4. N/A [ ]

E) PELUM REGIONAL DESK COMMUNICATION STRATEGIES

11. What communication channels does PELUM Regional desk use in communicating with your organisation?

1. Radio [ ]

2. Television [ ]

3. Internet [ ]

4. Magazine [ ]

5. Brochures [ ]

6. Telephone [ ]

7. Newspaper [ ]

8. None of the above [ ]

12. If your response to the question 11 was 8, please indicate the media used

_____

13. Do you have access to the following media? Please indicate with a yes or no.

	Yes	No
1. Radio	[ ]	[ ]
2. Television	[ ]	[ ]
3. Internet	[ ]	[ ]
4. Newspapers	[ ]	[ ]
5. Telephone	[ ]	[ ]

14. Do you have any problems accessing the above media? If so please indicate in the space provided.

1. Radio _____

2. Television _____

3. Internet _____

4. Newspapers _____

5. Telephone _____

15. How often do you tune in to a radio?

1. Very frequently [ ]
2. Frequently [ ]
3. Often [ ]
4. Rarely [ ]
5. Never [ ]

16. How often do you watch television?

1. Very frequently [ ]
2. Frequently [ ]
3. Often [ ]
4. Rarely [ ]
5. Never [ ]

17. How often do you read newspapers?

1. Very frequently [ ]
2. Frequently [ ]
3. Often [ ]
4. Rarely [ ]
5. Never [ ]

18. How often do you read magazines?

1. Very frequently [ ]
2. Frequently [ ]
3. Often [ ]
4. Rarely [ ]
5. Never [ ]

19. How often do read e-mail messages?

1. Very frequently [ ]
2. Frequently [ ]
3. Often [ ]
4. Rarely [ ]
5. Never [ ]

20. In which form are PELUM publications sent to your organisation?
    1. Physically [ ]
    2. Electronically [ ]
    3. None of the above [ ]
21. How often do you read the PELUM publications?
    1. Very frequently [ ]
    2. Frequently [ ]
    3. Often [ ]
    4. Rarely [ ]
    5. Never [ ]
22. Have you received any information communication materials published by PELUM Regional desk in the last 3 months?
    1. Yes [ ]
    2. No [ ]
    3. Not sure [ ]
23. How often do you browse the PELUM Regional desk website?
    1. Very frequently [ ]
    2. Frequently [ ]
    3. Often [ ]
    4. Rarely [ ]
    5. Never [ ]

F) ANALYSIS OF THE PELUM REGIONAL DESK STRATEGIES

24. Do you think that PELUM Regional desk is doing enough in communicating information on low input sustainable agriculture among

members in Zambia?

1. Yes [ ]
2. No [ ]
3. Not sure [ ]

25. Is the information provided by PELUM Regional desk on low external input sustainable useful to your work with small scale farmers?

1. Yes [ ]
2. No [ ]

26. If your answer to above question is "no". Please explain why in the space provided

_____

_____

27. Are you satisfied with PELUM Regional desk's current communication with your organisation?

1. Yes [ ]
2. No [ ]

28. If the answer to the above question is "no" please give the reason in the space provided

_____

_____

G) CHALLENGES IN THE CURRENT COMMUNICATION PROCESS

29. What specific problems or difficulties do you face in your current communication with PELUM Regional Desk?

1._____

_____

2._____

_____

H) RECOMMENDATIONS

30. What do you think should be done to improve communication between PELUM Regional desk and PELUM Zambia's secretariat and general membership?

1._____

_____

_____

2._____

31. Is there anything specific concerning communication that you would like PELUM Regional desk to be aware about?

1.

_____

2.

_____

Thank you for your participation

Appendix 2: Interview guide for in-depth interview with officials at PELUM Regional desk

1. What ways is PELUM using in communicating information on low external input sustainable agriculture among its members in Zambia (country working groups, civil society organisations and small scale farmers)

2. Who are the targeted audience for PELUM's information work in Zambia and why? What channels of communication does PELUM employ to reach its targeted audience?

3. Do you have a communication strategy? If so when was it developed and who was involved in its formulation?

4. How is the strategy being implemented? Has it improved communication within PELUM Association?

5. Do you have any mechanisms of monitoring and evaluating the utilization of the information that you are providing to your membership and the general public?

6. What feedback mechanisms do you have in the communication strategy between farmers, PELUM members, PELUM Country offices and PELUM RD?

7. How are these mechanisms monitored to determine learning within the association?

8. In your view has the adoption of sustainable agricultural practices improved among small scale farmers?

9. Are you satisfied with your current communication strategy or do you think there is need for improvement?

Appendix 3: Interview guide for in-depth interviews with officials at PELUM Zambia Secretariat

1. What is PELUM Zambia desk's role in PELUM Association?

2. Do you have a communication strategy in PELUM Association?

3. What is your role in the PELUM communication strategy? How are you communicating information on LEISA with the member NGO and the small scale farmers?

4. How often does PELUM Regional Desk communicate with PELUM Zambia secretariat and what tools are used in this process?

5. Do you receive any support from PELUM Regional Desk in terms of your own communication strategy with the PELUM Zambia members? If so what is the nature of the support?

6. Do you receive specific publications on low sustainable agriculture from the regional desk for distribution to the general membership? If so how are the publications distributed? Do you face any challenges with this?

7. Do you produce your own information products? Who are the targeted audience for PELUM's information products? What channels are you using in reaching them?

8. Are there any feedback mechanisms from the membership and the Zambia secretariat on the information products from the Regional desk?

9. Are there any feedback mechanisms between the country desk and the regional desk? How are these mechanisms monitored to determine learning within the association?

10. How do you monitor the implementation of LEISA techniques among your members and the farmers that they work with?

11. In your view what is the adoption rate of LEISA among small scale farmers that your members work with? Is there any need for improvement in the way that LEISA is promoted among small scale farmers?

12. Are you happy with the current communication strategy in PELUM Association? Is there need for improvement?

Appendix 4: Prompt list for Focus Group Discussions with small scale farmers

1. Do you receive publications on low external input sustainable agriculture from PELUM Regional desk? If so how often do you receive them?

2. Do you find the information useful? Have you adopted any of the suggested practices? If not why?

3. How many of you use animal manure, composite or plant agro-forestry tree species to add nutrients to the soil?

4. Do you have any difficulties accessing information on sustainable agriculture from PELUM Regional desk?

5. What kind of media do you have access to?

    1. Television

    2. Radio

    3. Magazines

    4. Brochures

    5. Internet

    6. Pamplets

    7. Newspapers

6. Do you face any difficulties with the fact that all information from PELUM Regional desk is in English?