THE ROLE OF ORGANIC FARMING IN IMPROVING THE AGRICULTURE OF SMALL-SCALE RURAL FARMERS. CASE STUDY: BWERA PARISH KICHECHE SUB-COUNTY KAMWENGE DISTRICT

BY

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DECLARATION

I Tuhirirwe Christine hereby declare that this dissertation is my original work arrived at through reading and field research and has not been presented to any university or higher institution of learning for any academic accreditation.

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APPROVAL

This work has been submitted with the approval of the University supervisor.

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DEDICATION

This book is a candid homage to:

My parents Mr. and Mrs. Mulenga Boniface and Rev Fr Adolf Mumanzi who tirelessly helped me through this struggle.

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ACRONYMS

AIDS	-	Acquired Immune Deficiency Syndrome
A2N	-	Africa 2000 Network
CA	-	Conventional Agriculture
CIAT	-	International Center for Tropical Agriculture
ESAP	-	Environment and Sustainable Agriculture Programme
FAO	-	Food and Agriculture Organization
GDP	-	Gross Domestic Product
HIV	-	Human Immune Virus
IFOAM	-	International federation of organic agriculture movement
IMO	-	Institute of Market Ecology
MAAF	-	Ministry of Agriculture, Animal and Fisheries
MGDs	-	Millennium development Goals
NAADS	-	National Agriculture Advisory Services
NOGAMU	-	National Organic Agricultural Movement
OA	-	Organic Agriculture.
OCIA	-	Organic crop improvement association
OF	-	Organic Farming.
PEAP	-	Poverty Eradication Action Plan
PMA	-	Plan for Modernization of Agriculture
WHO	-	World Health Organization

TABLE OF CONTENTS

LIST OF TABLES

LIST OF PLATES

KEY DEFINITION

Organic: Any chemical compound containing carbon or derived from living organisms.
Organic farming: a system of agriculture that encourages healthy soils and crops through such practices as nutrient recycling of organic matter such as compost and crop residue crop rotations, proper tillage, the avoidance of synthetic fertilizers and pesticides (IASA,1990)

Nutrient cycling: The recurrent flow of nutrients through a farm or a large agro-ecosystem such that the major part of the mobile nutrients are kept with in the system and reused.

Agro-ecosystem: an ecological system modified by people to produce food fibre fuel and other products desired for human use.

Livelihood system: A combination of people, resources and environment in which the stocks and flow of food and cash are used to meet the basic needs of people. The livelihood system of a rural household may include cropping, tree growing, animal keeping, fishing, gathering and hunting, processing trading, paid employments and a wide variety of other non farm activities
Manuring: Application of animal dung, compost and other organic material used to fertilize the soil.

ABSTRACT

The study was carried out in Kamwengye district Kicheche Sub County in the western part of Uganda to assess the role of organic agriculture /farming in improving the agriculture of small scale farmers.

It focused on the farming practices, potential benefits of organic farming, level of awareness and the factors constraining the adoption of organic farming.
The traditional practices that characterize the farming systems of small scale farmers and land size in most developing countries due to economic problems strengthened the practice of organic farming by small scale farmers

The farmers understanding of organic agriculture was relatively good as assessed in line with the inputs used, manures, soil and water management practices but poor in pest control.
The benefits were in line with the availability of organic inputs which were viewed as socially just, economically viable and ecologically sound while with factors hindering adoption of organic farming includes socio and cultural factors, lack of sources of information, availability of inputs, farmer to farmer communication and attitude towards the project.

The researcher concluded that when farmers understand that organic farming is good based on the sources of external inputs used, farming practices, soil and water conservation management practices which are ecologically sound, farmers can produce enough for self sufficiency and gain sufficient returns to the labour and costs involved.

The researcher recommended that there is need to strengthen extension services, encouraging field days and exchange visits, strengthening of supportive linkages, farmer to farmer training, financing of agricultural projects such as NAADS and Prosperity for All Programmes based on agriculture and finally sharing knowledge to enhance the opportunity for local communication on agriculture improvement.

CHAPTER ONE

1.0 INTRODUCTION

Where as the government of Uganda aims at transforming the economy to an industrialized one until this is achieved, we continue to be dependent on the natural resource base which we must use wisely and sustainably guard. This can be done through sustainable resource use activities.

In the past, many public goods including water, roads, land were considered free and largely managed by the government. Now approaches focus on enhancing sustainability by encouraging greater user involvement through cost recovery , promoting technologies subject to greater user control for example organic farming, investments that combine adoption of environmentally sustainable technologies with sustainable livelihood initiatives are ways that Project beneficiaries have incentives to adopt and sustain the improved resource management practices.

Farming systems that use low external inputs, sustainable agriculture practices such as crop rotation, mulching, biological and mechanical pest control have a role to play in addressing the issue of sustainable food production and improved livelihood of the people such type of farming system is organic agriculture.

Organic farming is being built upon low external input and sustainable agriculture approaches practiced by many developing countries
The World Food Summit Plan of action organized the importance of appropriate input technologies, farming techniques and other sustainable methods such as organic farming. This is to assist farming operation to be profitable with the goal of reducing environmental degradation while creating financial resources with farming operations. (FAO, 1990)

Organic farming is a holistic production management system that promotes and enhances agro-ecosystem health including biodiversity, biological cycles and soil biological

activity. It emphasizes the uses of management practices in preference to the uses of farm inputs taking into account that regional conditions require locally adopted systems. This is accomplished by using where possible agronomic, biological methods as opposed to using synthetic material to fulfill any specific function with in the system. (FAO, 1999)
The effect can be seen not only in the range of policies which give greater height to environmental considerations but also in the growth of organic movement and market for organically produced food. Consumer interest developed faster both health and environmental reasons. Organic farming is increasingly being recognized as a potential solution to many policy problems facing agriculture in both developed and developing countries.

The system seeks to avoid the direct and routine use of readily soluble chemicals and biocides whether naturally occurring. Nature identical where it's necessary to use such materials, then the environmentally disruptive at both micro and macro levels.

Agricultural land constitutes the most crucially important natural resources in Uganda where 90% of Ugandans are dependent on the products and services of the country's soil for their survival (Aniku, 1988).agriculture is the main stay of Uganda's economy, providing more than half of the gross domestic product (60% in 1990) from where about 80% of the population earns a living of which 90% live in the rural areas. Approximately 2,500,000 are farmers of which 80% cultivate less than two hectares of land each (MFEP, 1994)Since 1990, Uganda's economy has been doing well except agricultural sector which grows more slowly at 3.8% per year (PEAP, 2005)

Per capita agriculture production is declining partially due to low and depleted fertility (Bekunda et al,1997) increasing pressure on agricultural land and the subsequent abandonment of many traditional maintenance strategies for soil fertility has resulted into negative nutrient balances.

According to Stoorvogel and Smaling (1990) about 200 million hectares of crop land in Africa has lost 600-750, 75 and 450 kgs/ha .N, P and k respectively during the last 30

years primarily by removing harvest. Uganda's economic growth will therefore depend on how well the environmental and natural resources are managed though already the recent economic growth put some resources like soil fertility, forests, wetlands at risk (PEAP,2005)

Uganda is based on small holder production with about 2.5 to 8.0 million households cultivating less than 2 hectares each. Over half of the total agricultural GDP (50%) is subsistence production for household consumption.

Uganda agriculture is characterized as traditional because traditional farming techniques and practices are used as far more than green revolution technologies. Infact improved planting and stocking materials, inorganic fertilizers and chemical pest control measures are rarely employed by the farmers as they are often not economical, appropriate for the local conditions not available and are beyond the reach of the majority of farmers.(The Organic Standard,2001)

1.1 Problem Statement

Despite the new advances in agriculture all geared towards improving soil productivity the dream is still far from reality for the small scale rural farmers in Kicheche sub-county – Kitagwenda County.

Kitagwenda County is predominantly occupied by small-scale peasant farmers who practice poor farming methods like slash and burn, overgrazing, over cultivation, mono cropping and other poor methods of farming. This has put a lot of pressure on the available land which has led to poor yields. This is evidenced in the current food shortages and increase in food prices in Kitagwenda and Uganda at large

The introduction of organic farming by environment and sustainable agriculture programme (ESAP) under Fort-portal Diocese helped farmers to deal with the problem of food shortage using the available limited land by carrying out sustainable farming practices such as crop rotation, agro-forestry, better methods of conserving water and soil

such as mulching, construction of trenches and use of compost and farm yard manure which are cheap and readily available to small-scale farmers with no adverse environmental effects like pollution. However in Kicheche sub-county some farmers have not embraced the presence of this programme due to too much expectation such as getting free seeds for crop production, tree planting, animals like cows, goats and poultry which are taken by few farmers considering a farmers capability, land availability and knowledge about the practice.

The overall study was aimed at the assessment of the role of organic farming in improving the agriculture of small scale rural farmers as this will help farmers make their farming systems more productive and sustainable through appropriate strategies and techniques which will lead to sufficient and reliable yields that will not deplete the resource base upon which they depend.

On the other hand this study will help development workers like ESAP on how to work with these farmers through such activities as basic agri-ecological research and establishing equitable trade relations that play important role in creating the conditions for sustainable agriculture, strengthening farmers capacity to develop and manage the system through actual creation of sustainable farming systems.

1.2 Research objectives

1.2.1 Major objective

To assess the role of organic farming in improving the agriculture of rural farmers in Kicheche sub county Kitagwenda county.

1.2.2 Specific Objectives

- To establish different farming practices carried out in Kicheche Sub County
- To determine the level of awareness of organic farming in Kicheche sub county
- To find out the benefits that result from practicing organic farming to the small scale farmers
- To establish problem faced by farmers in adopting organic farming.

1.3 Scope of the study

The study was carried out in the rural communities where organic farming is practiced including groups of farmers and where demonstrational organic farms are located for example at the parish and sub county.

1.4 Justification

This book focused on the assessment of organic farming in improving the agriculture of small-scale rural farmers who presently operate with low levels of external inputs. This will help farmers to gain practical ideas and source of further information for persons and organizations who are working together with such farmers in trying to solve problem concerning their farming systems.

This book will help primarily the middle level development staff in extension, research and training for example district officers, coordinators of field staff, field researchers, students and donors of agricultural development projects and programmes and readers to reflect on the way they are presently trying to develop agricultural practices so that it contributes more to the emergency of sustainable forms of agriculture.

CHAPTER TWO

LITERATURE REVIEW

2.1 Definition of organic farming

Organic is the type of sustainable agriculture except that organic farmers use no commercial inputs whatsoever, no herbicides and food preservatives.

Organic farming is a system of agriculture that encourages healthy soils and crops through such practices as nutrient recycling of organic matter such as compost and crop residues ,crop rotation ,proper tillage the avoidance of the synthetic fertilizers and pesticides(IASA,1990)

It is the most environmentally compatible form of agriculture, it a holistic philosophy and a farming cycle as complete as possible with diversified structure, natural water and soil resources are created with care so that they remain available for the future generations (Moltener, 2001)

Organic farming also refers to an agricultural system that promotes environmental friendly, economically viable, socially just production of food, fibre, based on organic manure and other natural inputs excluding use of synthetic fertilizers and pesticides. It follows the principle and logic of living organisms in which all elements that is soil, plants. Animals, insects and the farmers are closely linked with each other based on minimizing external use and it excludes genetically modified organisms (NOGAMU, 2005)

Organic farming is one of the several approaches to sustainable agriculture and many techniques used for example mulching, agroforestry composting and integration of crops and livestock are practiced under various agricultural systems.

What makes organic agriculture unique as regulated under various laws and certification program is that almost all synthetic inputs like fertilizers, herbicides, pesticides,

insecticides are prohibited, soil building crop rotation are mandated natural inputs approved and synthetic inputs prohibited(FAO,1999)

2.2 Trend of agriculture in Uganda.

From mid 1970 to 1980, Uganda's agriculture sector experienced negative growth rate. This was due to civil wars with in the country resulting in economic mismanagement, disintegration of pubic infrastructure, lack of private sector investment, scarcity of foreign exchange for agricultural inputs and collapse of emerging commercial agriculture sector.

However political and economic reforms in the late 1980 and early 1990s received the trend with agricultural sector experiencing an average rate of over7% per annum from 1992 to 1990. (The Organic Standard, 20001)

Alongside the steadily strengthening agricultural sector, and favored by the traditional farming systems and the recent reforms.
Organic production has grown rapidly with estimated 20,208 small scale holder farmers managing 49028 ha organically which constitute 1.6% of the cultivated land area. Uganda has emerged in the last 6 years as the leading African country in organic production.

NGOs have actively promoted organic agriculture in the country since 1990 with the purpose of receiving the productivity of degraded farmland through improved traditional management practices and use of locally available material.
The country now exports organic Arabic coffee, cotton, fresh banana, sundried sweet banana, pineapples and mangoes, the certified organic products were available in 1994 from a small project by IMO (The Organic Standard, 2001)

In Kamwengee district, organic farming was introduced by Environment and Sustainable Agriculture Programme (ESAP) in 1994.

2.3 Principles and the practices behind organic farming

These principles provide the basis for day to day farming practice for organic farmers worldwide (Lampkin, 1990) and include those expressed in the standard document of the International Federation of the Organic
Agriculture Movement as follows

- To produce of high nutritional quality in sufficient quality.
- To work with natural systems rather than seeking to dominate them.
- To encourage and enhance biological cycles within the farming systems involving micro-organisms, soil flora, fauna, plants and animals.
- To maintain and increase the long term fertility of locally organized agriculture systems.
- To work as much as possible with a close system with regard to organic matter and nutrient elements.
- To maintain genetic diversity of agricultural systems and its surroundings including protection of plant and wild habitats.
- To allow agricultural producers an aggregate return and satisfaction form the work including a safe working environment.
- To consider the wider social and ecological impact of the farming.

Organic farming is therefore a production system which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulation hormones and livestock feed regulation hormones and livestock feed additives and supplements to the maximum extent feasible, organic agricultural systems really on crop rotations, green manure off farm organic wastes and aspects of biological pest control to maintain soil productivity and filth to supply plant nutrients and to control weeds and other pests(Lampkin,1990)

Basically organic foods must be the product of organic farming 100%.since it is impossible, however to supply all raw materials in the appropriate quantity upto 5% of the ingredients used can be a product to market the "organic" at least 95% of its

agricultural ingredients must come from organic farming. Some of the ingredients of on agricultural origin. Like ascorbic acid as preservative, pectin as Jellying agent, orguar gum as thickener can be used according to the European Union (EU) regulation on organic farming, other flavoring or synthetic color additives are forbidden.(Moltere,2001)

There are expectations in some cases certain natural inputs determined by the various certification programs like Organic Crop Improvement Association(OCIA) to be harmful to human health or the environment are prohibited. for example(arsenic)as well, certain synthetic inputs determined to be essential and consistent with organic farming philosophy are allowed (for example insect pheromones) many certification programmes require additional environmental protection measures in addition to these two requirements, while many farmers in the developing world is not sufficient to classify their operations as organic.(FAO,1999)

Differences in the method of soil fertility maintenance and the approach to the provision of crop nutrients in convectional agriculture and organic agriculture have far reaching conventional farms, little attempt are made to recycle nutrients. They are applied in surplus in a highly soluble form immediately available to crops and consequently prone to leaching and other forms of loss.

The manure used in organic agriculture contain nutrients in less readily forms and therefore less leachable and do not reduce into the biological diversity of organic swards at the rates in organic farming (Lampkin, 1990)

2.4 Potential and benefits of organic farming

Although as yet small industry, organic farming is becoming important in the agricultural sector in a number of countries, irrespective of their stages of development. Though only a small percentage of farmers are expected to become organic producers, consumer demand for organically produced food and fibre products which provides new market opportunities for farmers and business around the world .The World Food Programme Summit Plan of Action recognized the importance of appropriate input technologies,

farming techniques and other sustainable methods such as organic farming to assist farming operation to be profitable with the goal of reducing environmental degradation. While creating financial resources within the farming operation.(FAO,1999) the outlook for expansion is promising due to its potential contribution to reducing poverty and to achieve other millennium development goals.(MDGS)

2.4.1 Potential

Ecological diversity

Where as conventional farming methods attempt to substitute natural production process. Organic agriculture to enhance them use a system which to a large extent the fundamental element of this mimicry being the mixture of arable and livestock enterprises which enable these farms to maintain the cyclic process characteristic of natural system. (Lampkin, 1990)

Diversity with in the crop inorganic agriculture system is substantially greater than in convectional systems. This is both deliberate design and by virtue of les vigorous control of weeds achieved without herbicides. Herbicidal weed control has virtually eliminated broad leaved weeds from cereals and other crop. Thus subject to local eradication. The control of these weeds in rational, herbicides free organic systems does not approach that in conventional agriculture, a situation that may also be influenced by low crop plant densities (Lampkin, 1990).A herbal component is often deliberately incorporated in organic swards as a means of tapping soil reserves and other invasive herb species sprayed with selective herbicides on conventional farmers are also tolerated.

The demand for organic products has created new export opportunities for the developing world. While some consumers expresses a preference for locally grown food ,the demand for a variety of food year round makes it impossible for any country to source organic food entirely within its own borders. As a result many developing countries have begun to export organic products successfully for example tropical fruits to the European baby food industry, Zimbabwean herbs ton South Africa. And six African cotton to the European Union typically organic exports are sold at impressive premium often prices

20% higher than identical products produced on organic farms. The ultimate profitability of organic farm varies. However and few such market premium. Never the less under the right circumstance the market returns from organic agriculture can potentially contribute to local food security by increasing family income. (FAO, 1999)

Northern developed countries have invested by far the most in organic agriculture research but even so, the contribution is minimal compared to overall research agriculture for example less than 0.01% of the us department of agriculture research budget is directed to organic agriculture). The lack of extensive formal organic research combined with highly site specific nature of organic agriculture suggest that it would be most advantageous for farmers themselves to participate in locally based applied field research. Experience with FAO initiated integrated pest management (IPM). Farmer field schools and community forestry projects ha shown that farmers, whether owners or tenants, large or small can practice good scientific methods if they are given orientation and technical support.

Interest in environmental protection and the preservation of small family farms has led to subside organic production to varying degrees. The subsides can provide significant encouragement for example UK provides up to 450 pounds per hectare during the conservation period for designated land areas. European Union subsidies have helped 15% of Irish farmers develop daily operations.

2.4.2 Benefits

Of recent in Europe, there have been major criticisms of current agricultural practices. They damage soil structure and environment, create potential health hazards in food, reduce food quality, are an energy incentive system, involve animal production systems that are ethnically unacceptable and are economically costly to society and increasingly to the contribution to make in some of these areas. It is absolutely dependant on maintaining ecological balance and dependant on maintaining ecological balance and developing biological processes to their optimum the potential of health hazards of pesticides residues and nutrients resulting from convectional agriculture are now

receiving attention. Organically produced food has higher dry matter and vitamin content and has improved storage as it largely avoids use of chemical inputs produced from finite resources and manufactured an energy intensive fashion and use little as no external inputs organic agriculture avoids the excesses of intensive animal production systems especially with pigs, poultry and use o f growth promoters.

The traditional goal of maximizing output is being countered by wide spread concern over the country side and environment and by the growing realization that finite resources need to be more carefully managed. Dramatic changes in farming practices have resulted in loss of natural habitat and species for example a loss of 20% of hedge rows and more than ¾ of the wetland habitat (Lampkin, 1990)

Many farmers, extension workers and marketers have found that the high input packages used for the green revolution is not appropriate to small scale producers found in Uganda and at times is harmful to the environment (NOGAMU, 2005) the organic agriculture system offers a much more appropriate and sustainable package fro the majority of Ugandan farmers as it focuses on production and marketing systems that are economically viable, socially just and environmental friendly.

A study commissioned by the national farmers union in England and Wales 1988 showed that 28% of the people interviewed were definitely and further 23% possibly interested to the extent of paying a price of 15% or more Lampkin, 1990)

Organic farming contributes to the millennium development goal of improved health and food security environmental conservation and economic development in Africa and Uganda at large. By increasing and stabilizing yields in semi arid land the use of manure, compost, mulches that increase both water infiltration and retention in the soil both fertilize crops and help them reach maturity when rains stop early.
Increasing returns for labour investments ,labor demands by organic fertilization method is well rewarded by high yields combating desertification, ground cover, soil quality are improved and help to reduce soil erosion, improved pest control the risk of pest and

disease is reduced by organic methods as compared to chemicals, although by migratory pests may still be challenge reducing debts farmers are spared from the burden of debt often arising from taking external agricultural inputs on credit.

Coping with HIV/AIDS patients can strengthen their immune system with sufficient and healthy food and extend their life span an economic activity by many years strengthening social system.

Organic agriculture built on local traditional knowledge supports small holds farm development and suits women farmers, requirements maximizing environmental service by conserving biodiversity, improving soil and avoiding chemical inputs that contaminate ecosystem. (Edwards, 2005)

According to FAO, 1999 other benefits include the following:
As in agricultural systems, diversity in production increase income generating opportunities and can as in the case of fruits supply essential health protecting mineral and vitamins to the family diet.

It also spreads a risk of failure over a wider range of crops. It is possible that even on those produced under the system which use high levels of inputs, the over economic yields of the farm will be competitive since organic system benefit from market prices and lowered input costs.,

The use of crop rotation, organic manure and mulches improve soil structure and encourages the development of a vigorous population of soil micro organisms mixed and relay cropping provide a more continuous soil cover and thus shorter period when the soil is fully exposed to the erosive power of the rain, wind and sunshine. Terracing to conserve the moisture and soil are used in appropriate situation and particular attention is paid in irrigated areas to on farm water management. Properly managed organic farming reduces or eliminates water pollution and help to conserve water and soil on the farm.

Although improper use of manure can seriously pollute water. A few developed countries or subsidizes to water pollution problem for example Germany and France.

The soil and water protection and conservation techniques of sustainable agriculture used to combat erosion, compaction, salinization and other forms of degradation are evident in organic farming. Organic farming rely on natural pest control for example biological control, plants with pest control properties rather than synthetic pesticides which when misused are known to kill beneficial organisms for example natural parasites of pests, bees, earthworms, cause pest resistance and pollute water and land.

Reduction in the use of toxic synthetic pesticides which World Health Organizations (WHO) estimates to poison three million people each year should lead to improved health of farm facilities and reduced expenditure hence improving their livelihood. Organic farmers aim at making use of the recyclable fertility in on farm crop residues (straws and non edible parts) either directly as compost and mulch through live stock as farm yard manure eliminating the use of synthetic nitrogenous fertilizers greatly lowers the risk of nitrogen contamination of water.

Crop rotation is the widely used method of fertility maintenance and pest and disease control that is used method of fertility maintenance and pest and disease control farming especially under intensification.

Fodder legumes are well known fertility building crops and are grown on vast areas in sub tropical Asia and semi arid region for dual purposes of feeding livestock and adding nitrogen to the farm fertility cycle.

Grain legumes may also produce a reasonable crop without nitrogenous fertilizer. leguminous crops in rotation add various amounts of nitrogen to the overall farm system through biological fixation, other nitrogen fixing plants such as azolla may also be used .Integrated livestock into system adds products as well as drought animal power.

Tree crops and on farm forest integrated into the system provide shade, wind breaks while producing food, income and fuel from firewood. Integrated agriculture may also be found within diverse organic agricultural systems.

Economic objectives are not the only motivation of organic farmers their interest is often to optimize land, animal and plant interaction, preserve natural nutrients and energy flow and enhance biodiversity all of which contribute to the overall objectives of sustainable agriculture to preserve natural resources and ecosystem for future generations.

2.5 Constraints of Organic Farming

The environment and economic benefits of organic agriculture have captured the attention of several countries. However, only small number have erected polices to assist the organic sector. In 1990, FAO sponsored a conference at which organic research needs were identified for example economies of stockless farms, animal husbandry, nitrogen recycling however these challenges have largely gone unmet according to FAO, 1990

2.6 Organic Farming Management Practices

A number of techniques have been recommended for use in organic agriculture systems for sustainable food production. However not all have been introduced to farmers.
(Harris net al, 1998) grouped these into categories

2.6.1 Methods of soil fertility improvement (Haris et al, 1998)

- Mixed livestock and arable farming
- Conservation tillage
- Crop rotation
- Mulching
- Ground cover cropping
- Nitrogen fixing plant
- Recycled and composted vegetative wastes and manure.
- Mixed and strip cropping
- Agroforestry
- Contour bunds, terracing

- Timing of cultivation/minimum soil disturbance

2.6.2 Methods of pest and disease control

Crop rotation and intercropping

Timely planting

Companion planting, use of clean stock

Natural pesticides

Handpicking

Introduced biological control

Sanitation to break the cycle /good hygiene

2.7 Factors that influence adoption of organic farming.

Age, older farmers have more experience, resources as authority that would allow them more possibilities for trying new technology. In a study to measure the association of age to the adoption of the use of simuturion pesticides on coffee by farmers in Mbale was found as significant correlation. The majority were 50years and above.

On the other hand, young farmers are most likely to adopt a new technology because they have high formal education that older generation or per haps have been exposed to new ideas as migrant laborers. (CIMMYT, 1993)

According to CIMMYT, education level may make more receptive to advice from an extension worker or more able to ideal with technology recommendations that require a certain level of literacy. Education provides a foundation for adoption of new technical practices and helps people to understand why change is necessary and can prepare them for making rational decision. (Muwanga, 1994)

The farm size is often proxy for wealth and it is often assumed that larger scale farmers will be more likely to adopt a technology especially if the innovation requires an extra cash investment (CIMMYT,1990).a study is conducted in extra cash in Zambia by Iha,1999, shows that adoption of new technology was related to farm size.

The adoption of hybrid maize a cash crop was dependent on the farm size (Lionberge, 1968) found that the bigger the farm, the more a farm would be willing to adapt to a new farm practice. Sturt, 1995 studied the extent and types of changes in farm practices that were taking place in northwest Pakistan and also determined the motivation for moving these changes. He found out that of the 200 cultivators interviewed 1/3 made changes of some kind at a limited scale. Small scale farmers had less inclination in making changes in farm operations because of fewer resources and thus less ability to take the risk of trying something new. Farm size may be related to access information as credit that would facilitate the adoption of a recommendation (CIMMYT, 1993)

Some technologies are more appropriate for the intensive management characteristics of smaller farm or atleast farms with a high ratio of labor to land. For example Fahlstorm et al 1994 observed that farmers in Kenya planted more trees on their farms as farm sizes decreased and population density increased

The availability of farm inputs like wheelbarrows, labor, and hoes at affordable prices is considered as a major perquisite for a sustainable agricultural development in Uganda. A study on wheat variety adoption in Pakistan found that very few farmers were using governments seeds deposits or merchants as source s of seeds (heisy,1990)when asked about the location of seed pots only ½ could say where these are located. The data produced evidence to how that seed was not being distributed from seed depots in the way policy makers believed.

Market availability and access entering this lucrative market is not easy. farmers are denied access to developed country organic markets for 2-3 years after beginning organic management since such countries will not certify land and livestock as organic before that time, urging that it is necessary for the purging of chemical residues under the draft codex guidelines, however products produced on land under organic management for atleast one year but less than two-three years standard can be sold as traditional organic although few markets have yet developed for such products (FAO,1999)

More so there is virtually no systematic production or market survey date being collected with which to assess the rate and pattern of organic market growth. In particular no

projections for the market in the developing world have been made nor have markets systematically been identified for developing countries exports. Estimates of the public's willingness to pay prices the impact of regional attitudes and tastes and the incidence fraud have not been undertaken.

Policy restriction, biological nitrogen fixation is powerful technique but it often requires some additions of minerals to the soil especially phosphorous. Most certification program restrict the use of mineral fertilizers which may be necessary to supplement the organic fertilizer from outside the farm are used for example rock phosphate, potash, guano, sea weed, slaughter house by products.

Ground limestone and wood ash while most certification program prohibits the use of the sewerage sludge and night soil are still used in some places. However sludge may contain many contaminants including heavy metal which can have debterous and cumulative effects on soil while night soil contains human pathogens and must be carefully composted before use.

Membership to social organization: social organization refers to social groups like farmers' association, cooperative women groups, relative groups, social groups to which people belong influence the adoption rates by setting up standards of behavior such as proper farming and receptivity to new ideas (Lionberge, 1968). In Netherlands farmers came together in study groups of 6-50 to share information on production results to compare achievements of their enterprises and situate themselves in comparison of their colleagues (Proost, 1991).

Enrollment in group organization is also one of the ways in which a farmer is introduced to new ideas and information and groups can be used to get credit (Muwanga, 1994) some studies have also shown that people tend to adopt in groups rather than individuals due to social pressure.

Social economic and cultural factors techniques and information must be culturally accepted if they are to be useful more still incentive for the production of improved practices should be emphasized unless they foresee a good return, whether income, security, status, producers, are likely to invest money or effort in loss reduction activities. The need to integrate new practices and reused technology into village economics calls for a better understanding of traditional practiced and generally of the conditions that facilitate or hinder corrective measures thus there is need of more research into the links between economic practices and yield reduction.

CHAPTER THREE

METHODOLOGY

3.1 Area of study

The study was carried in the western part of Uganda, Kicheche Sub County in Bwera parish.

3.1.1 Location

Kamwenge district lies within 0, 30' N, 30', 15'E and 0, 08'S 30 15E. It covers an area of 230,326 square kilometers at an average of 4000 feet above sea level. It can be accessed from Kampala either through Mbarara via Ibanda as Mubende. Fortportal with a distance of over 400km. Kamwenge borders with Kasese in the west, Mbarara in the south east, Bushenyi in the south, Kabarole in northeast and Kyenjojo in the north and north east.

3.1.2 Climate

Kamwenge areas have temperatures ranging from 20-25^{o}c.Maximum in all of the district with an average rainfall of 1400mm per annum. (State of environment report 2000-2001 Kamwenge).

3.1.3 Soils

The soils in the district are deep sandy clay loam and volcanic soils which support the practice of agriculture.

3.1.4 Agricultural activities

The dominant economic activity at household levels in the district are subsistence agriculture the main enterprise include among others maize, bananas, beans, Irish potatoes and vegetables as well.

Cotton is an important cash crop in Mahyoro sub county in Kazinga channel cotton belt, coffee in some parts of Nkoma and Bwizi, Ntara and Kicheche are well known for the diary cattle production and banana growing.

Other activities include fishing on Lake George and apiary in Kicheche Sub County.

3.1.5 Population.

The district population is approximately 300,000 people according to the National Housing and Population Census 2002.It is made up of two counties Kitagwenda and Kibaale. Eight sub counties, 1 town council, 51 parishes and 503 villages.

3.1.6 Ethnicity/culture

The population of Kamwenge is a unique one with a multiple culture ranging from Bakiga, Batagwenda, Batooro, Bafumbira, Banyankole all of which are natives of the district.

Kamwenge is part of the greater Toro kingdom under King Oyo Kabamba Iguru Rukidi IV

3.2 Data collection methods

3.2.1 Target population

The target population was fifty farmers spread in villages. Only model farmers and ordinary farmers were preferred basically for purposes of comparison between organic farming practices and non organic farming practices since a big number of farmers practice organic farming unlike the ordinary ones.

3.2.2 Sampling method

The researcher purposively selected ten villages in the parish where the system was being practiced. Each village was represented by five people / farmers of which three were model farmers and two ordinary farmers practicing agriculture. These villages included Bwera 1, Bwera 2, Buryansungwe, Kinyuungu, Rwamunyali, Kitoigo, Katusi, Mbuyabuye, Bwentigitsi and Kanara villages, these farmers in the sample helped the researcher in answering the questionnaire.

3.3 Data collection tools

Both primary and secondary methods were used in data collection and these include:

3.3.1 Observation

This method was used to get information about different farming practices, crops being grown and the management practices carried out in Bwera parish.

3.3.2 Interview guide

Interviews were used to get information from key stakeholders who include progressive farmers, extension workers and agricultural officers at the sub county. It involved face to face questions concerning the practice of organic farming.

3.3.3 Questionnaire

Appropriate questionnaires were designed consisting of both open ended and closed ended questions which were administered to model farmers and ordinary farmers in the area. This helped the researcher to obtain information that could not be easily identified such as the problems faced by the farmers, sources of information and others.

3.3.4 Photographs

Photographs of farms were taken to supplement the data for example practices of soil conservation, sources of manure, animals reared by the farmers in the area.

3.4 Data analysis

Data collected was edited, coded and entered into tables using both qualitative and quantitative methods into frequencies and percentages. Qualitative method was used to present the benefits obtained from the practice of organic farming such as food, and income and it was also used to present the problems faced in the adoption of organic farming while quantitative method presented the level of awareness and understanding of organic farming, and different farming practices being carried out.

3.5 Limitations of the study

Some farmers are not willing to give correct information about their inputs like fertilizer use and this limited the research from getting adequate information about fertilizer use and other inputs.

Remoteness, some villages were not easily accessed for example Kitoigo which is in the border towards Bushenyi (Buhweju) thus sufficient information was not obtained from that area.

The researcher faced a problem of bouncing at people's homes since it was harvesting time and therefore it was hard to look for the farmers in their field of work which were also located far from homesteads.

Apart from the above limitations the research lacked enough funds since this was self sponsored research while in the field. It included money for transport, food, meeting the people which required finance.

CHAPTER FOUR

DATA PRESENTATION AND DISCUSSION

4.0 Introduction

This chapter presents the research findings and discussion of results based on the objectives

4.1 Different Farming practices carrying out by small scale Rural Farmers in Kicheche Sub-county.

The findings for objective one were got from the respondents who answered the questionnaire and these were the model farmers and ordinary farmers involved in the practice of agriculture. The results are shown in the table below;

Table 1: Showing different farming practices and responses from the respondents

Type of farming	Number of farmers (model)	Ordinary
Mixed Farming	18	10
Crop Rotation	8	2
Intercropping	2	3
Kitchen gardening	2	0
Morio cropping	0	1
Mixed cropping	0	4
Total	30	20

Source: primary Data

From the table above, it is observed that 18 model farmers carried out mixed farming accounting to 60%, crop rotation 26% and finally two farmers practice inter-cropping and kitchen gardening respectively accounting for 6.6%. Considering the side of ordinary farmers 10 respondents were in favour of mixed farming accounting for 50%, intercropping were 3 respondents accounting for 15%, 4 respondents practice mixed cropping accounting for 20% and lastly mono-cropping which accounts for 5% out of the total ordinary farmers.

Thus from the analysis it was observed that more than half of the farmers in the area practice mixed farming and crop rotation compared to other farming practices of intercropping, kitchen gardening, mono-cropping and mixed cropping.

This conclusion was arrived at through grouping three practices according to one with a highest number of responses show below;

Table 2: showing different farming practices and ranking

Type of farming	**Rank**
Mixed farming	1
Crop rotation	2
Intercropping	3
Kitchen gardening	4
Mon-cropping	5
Mixed cropping	6

Source: Primary Data

The researcher observed that most farmers practice mixed farming and crop rotation mainly for soil fertility regeneration through application of manure from farms for example cow dung, goat dropping and poultry dropping which are highly nutritious. This was revealed by Mrs Ahabwe Jayles one of the model farmers in Kanara village.

Also farmers told the researcher that they practice crop rotation because it is convenient in pest and diseases control while intercropping is to help them get much yields for example Mrs Katushabe said that if she had planted maize, Groundnuts and Cassava and Ground nuts have not done well then she benefits from cassava and maize and thus she does not face total loss.

4.2 Farmers understanding of organic farming

4.2.1 Farmers level of awareness

The farmers' level of awareness was determined in terms of their understanding, use and source of fertilizers and the water and conservation practices carried out. Here respondents were still the model farmers and ordinary farmers in Kicheche sub-county basing on the awareness.

Table 3: Showing farmers' level of awareness of organic farming

Opinion	Model	Ordinary Farmers
Aware	20	8
Not aware	10	12

Source: Primary Data

From the table, atleast 56% of the farmers in Bwera parish were aware and understood organic farming according to the questionnaire unlike the 22 who answered not aware accounting for 44% did not understand organic farming.

From the definition, one of the model farmers by names of Mr. Tibamanya William defined organic farming as the farming system that does not involve the use of artificial fertilizers but rather plants grow naturally and are fed on natural manures. Another farmer Mr. Kato Ronald defined organic farming as a method of farming that use natural methods as a method of farming that use natural methods of soil fertility improvement with the help of animal wastes and plant residues as manure.

Mr Rwomezi Patrick added that they use urine, ash and herbs like Lantana Camara, red pepper (Caspsian Fruclescents) to destroy pests and diseases especially in crops like cabbages. He added that urine collected from human can be mixed with other ingredients to spray coffee and kill banana weevils after the pseudo stem has been cut.

The researcher observed that farmers understanding of organic farming was based on the types of manure used and their sources for crop production where by most farmers revealed that they get manure from their farms especially farm yard manure.

Plate 1: A heap of Goat droppings prepared to be used as manure

Source: Primary data

One model farmer Mr. Kigambe said that they use compost manure where they dug abig pit and put composting material including plants, grass, banana peeling, urine as Ash and later cover the pit with soil and around the pit they plant a variety of vegetables such as tomatoes, egg plants, Dodo, sukuma wiki, carrots, green paper, cabbages where he referred this garden as "Nyineka tanyata" then literally known as a kitchen garden.

Plate 2: A kitchen Garden that is purely organic

Source: Primary Data

4.2.2 Manures used and their sources

Manure or fertilizer used by this farmers was of input either organic, inorganic or both and their sources.

Table 4: Types of inputs and their sources

Type of External input	Frequency	Valid Percentage	Source
Organic	10	20	Plant/animal kitchen waste
Inorganic	4	8	Market/shops
Both	30	60	Market/plant and anima
None	6	12	

Source: Primary Data

The smallest percentage of farmers were found to be using inorganic manure / fertilizers for both fertility improvement, pest and disease control in crops and animals while 20%

were using only organic manures. This was true as the majority claimed that organic manures / inputs are naturally.

Occurring and easily accessible for use because farmers had livestock unlike inorganic inputs which are costly. This implies that farmer's awareness on input use matches with their standards and costs of living.

However, a biggest percentage use both organic and inorganic inputs despite the level of awareness of organic agriculture. This is due to existence of persistent weeds like digiteria scalarum and cyperus rotundus as well as farmers interests in high value crops such as Tomatoes. Eradication of persistent weeds requires complex management including use of synthetic herbiades. Inorganic pestcides, acariades especially in animal rearing. This was said by one of the ordinary. Farmers by names of Mr. Tumusiime Esau and Tweyambe Wilson who are progressive farmers in agriculture.

Twelve percent of farmers interviewed were not applying any inputs for either soil fertility improvement or pest and disease control. These were practicing traditional agriculture though they had animal and crop residues scattered in their gardens near their horns.

4.2.3 Some of the soil and water conservation management practices carried out by farmers

Some of the management practices by farmers that were assessed were those of interest to the researcher. The assessment was to see whether farmers do practice them and why.

Most farmers were aware of the management practices though some were done without reasons as to why they did them. It was observed that crop residues are used for animal fodder for banana peelings, mulches, material for compost or burned.
Most stopped it because of their knowledge of its active role in biodiversity and nutrient loss.

Table 5: some of the soil and water conservation management practices carried out by farmers

Management practice	Number of farmers out of 50
Mulching	37
Mechanical soil erosion control	41
Fallowing	45
Agro-forestry	45
Cover cropping	42

Source: Primary Data

Mulching as a management practice in organic farming is highly practiced. The farmers are aware of its role in weed intensity reduction and soil moisture conservation. Almost all farmers practice soil erosion control. The mulches and mulching was in Mr. Kigambe's banana plantation. Cover cropping is very common since most crops grown provide soil cover such as beans; ground nuts provide a good soil cover.

Thus the importance of soil and water conservation management practices whether in organic agriculture or conventional agriculture system was well known amongst the farmers.

Plate 3: Mulched Banana plantation

Source: Primary Data

4.3 Benefits of organic farming to farmers in kicheche sub-county

4.3.1 the farmers interviewed who practice organic farming said that they have benefited from this practice and the benefited include enough food for their families will little or no health worries that may affect them.

4.3.2 Organic farming has proved to be a source of income to farmers through selling of organic products like banana, fruits like passion fruits which are more liked by buyers unlike the crossed ones. Farmers also earn income from selling organic input like urine because a jerry can of urine in 1994 when the practice had just started was bought at 500/= but now since everybody has known its importance in crop production a jerrycan of human urine is bought at 2000/= and that of animals is at 5000/=. Therefore a farmer by names of Bwomezi patrick said he collect 1 jerrycan of urine a week and atleast 3 of animals and this has made him earn 7000/= per week from selling of urine only.

4.3.2 Farmers told the researcher that they get cheap and available manures. This is got from their farms and thus this saves them cost of buying them from the neigbourhood. Mr. Kigambe and Kato revealed that atleast form his able to collect each manure in form of cow dung and goat dropping that he used in his banana and coffee plantation.

4.3.4 Organic farmers in Bwera parish have acted as demonstrational farms thus indirectly advertise for the farming system and the farmers as well Mr. Tibamanya who is a prominent farmer in Bwera one village said he had earned a lot of money since the programme began, this is because at the star field works, studies in his farm were free but now that his farm is becoming a study centre, he has constructed an office and very visitor on research pays a minimum fee of 20,000. For that matter then he earns a living and he has morale for his production.

4.3.5 Farmers gained knowledge and practical skills in agriculture systems for example in fishing, farming, agriculture, and poultry rearing. This gives them alternative source of income besides cropping and animal husbandry.
Also through organic farming farmers gained knowledge on making of compost manures, construction of trenches and many benefits like knowing of herbs that are naturally occurring and can be used to eradicate pest and disease in crop growing for example spraying with soapy water and extracts from different herbs like red peper leaves, papaw leaves to livestock.

Through exhibitions carried out at different functions for example food and agriculture organization Day. World environment Day farmers display their products and this gives more morale to practice since they are rewards for the best farmer and best group in the district. In 2004 District celebrations of world environment day for Kamwenge was held in Kicheche sub-county and Bwera parish was the best of all farmer groups in Kicheche and was given a name of Bwera model village said by Mr. Kato Ronald. This encouraged farmers in the village to work hard for their names Glory

4.4 Problems constraining the adoption of organic farming by small scale rural farmers in Kicheche sub-county

4.4.1 Limited land

Most farmers did not have enough land to carryout farming activities. This was revealed by Mr. Tweyambe Wilson who is the chair person of Buryansungwe farmers Association and prominent farmer the parish. He said that a large percentage of farmers have less than 10 hectares of land which limit their productivity in agricultural activities.

4.4.2 Political factors

Political Factors have also influenced the adoption of organic farming in Bwera parish. This was said by the Mr.Kato Ronald who is also the LC II chairperson for Bwera parish. He said that after ESAP environment and sustainable agriculture Program finished its contract in environmental management in 2005. the government came in to help[p farmers through poverty alleviation programme sponsored by the state house kamala and the people in opposition did not embrace the practice since its for their own benefit says the LCII chairperson supported by his secretary Mr. Bwomezi Patrick

4.4.3 Farmers age

The age is mostly associated with responsibility interest and physical ability of a farmer

Table 6: shows farmers' age

Age group	frequency	percentage
10-19	2	4
20-29	10	20
30-39	15	30
40-49	10	20
50-59	8	16
60+	5	10

Source: Primary data

From the table above the active group of farmers those of age group 30-39 accounting for 30% .however those in 60+ are very few compared to others with only 10% and lastly the young below 18 who account for 4%.

The age of the farmers limits the adoption of organic farming because its energy demanding as said by Mr.Kigambe that most of their work on the farm is done by the workers supervised by his wife Mrs. Kigambe Atenyi

4.4.4 Pests and diseases

A number of pests and diseases attacks the crops and animals and that some of them have become resistance to natural herbs and medicines especially in animal production and this therefore has forced farmers to purchase some pesticides to spray ticks on animals like cows, sheep and poultry.

4.4.5 Source of information

The source of information influences its diffusion which influence the adoption of the system. Very few farmers reported to have acquired knowledge from written literature because most books are written in English and most farmers are semi literate not in position to read.

The few that are able to read cannot afford buying printed literature and in case they manage to access interpretation of information, photographs and diagrams become difficult; Mrs Katushabe violet said.

4.4.6 Gender bias

Unlike most farming, agricultural research tends to be the preserve of mates. This is seen in division of labour between men women in which men dominate the external economic domain and women the household. In this case agricultural research has given little attention in solving the problem of female farmers and often disregards important questions of women's influence on decision making and labour allocation.

A group of farmers revealed that much emphasis is based station – based research. The production conditions of research and experiment station do not resemble those of

farmers and cannot possibly represent the highly variable conditions in rainfed agriculture. As a result technology tested on station often does not work under farmers conditions, while good qualities of local varieties which are adopted to local conditions are not recognized under station conditions.

4.4.7 Extension of incomplete products

Organic farming development tends to be organized in terms of disciplines and not according to the aggregation level of the farm as a result products delivered for extension are often incomplete, they represent merely the answer to a disciplinary technical problem without taking into account for example production aims, labour allocation between various crops, access to and affordability of external inputs and other aspects of social economic context. Mr Tinkamanyire said.

4.4.8 Limited extension staff

The farmers in Bwera parish revealed that there is only one person running the sub county of Kicheche with 9 parishes and are community agricultural officers who runs the parish of 10 villages.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Farmers especially the model farmers were aware of the organic farming through management practices, such as soil conservation through mulching, Agroforestry and environmental protection by practicing environmental friendly practices like tree planting and crop and animal residual management since these are closely related to their traditional farming practices characterized by mixed farming, crop rotation and intercropping.

Ordinary farmers practiced these practices just as a matter of having trees in their farms but not really as taught in seminars and workshops of farmer group Association.

As far as pest and disease control were concerned organic farmers were not perfect in using organic chemical, they went ahead and used some pesticides especially in animal rearing and this therefore does not meet the demands of an organic procedures.

Insufficient sources of information concerning organic farming, high labour requirement and limited inputs are the major problems constraining the adoption of organic farming by small-scale farmers unlike conventional agricultural, organic farming has not been blessed with extensive research nor have organic farmers had backup advisory service yet extension services and belongings to farmers associations are the most sure and effective means of information and reception. However the law level of education, dependence on agriculture for food, income generation and poverty increases the chances of adoption of organic farming system.

In Kamwenge farmers still carryout persistent practices like fallow, crop rotation, inter-cropping, mixed farming, mulching though still these practices embrace the organic principles of crop diversity sustainability and agroforestry system approach.

5.2 Recommendations

There is need to strengthen extension services focusing on organic farming practices for both farmers as this will enable them benefit from the practice and much emphasis should be put an organic methods of pest and disease control which is still lacking amongst both farmers.

Field days and exchange of visits should be encouraged so that methods like preference ranking can be used to generate criteria of evaluating experiment results where different groups have constrasting preference ranking for example male producers prefer characteristics which has high value in cash while female producers prefer good storability.

Strengthening supportive linkages so as experience and skill develop, other service centre will remain permanently in the area such as research stations schools, three nurseries can be drawn more closely to the process, this will help community representatives make contact with such organizations in providing back up support to farmers. For example, forestry staff working in tree nurseries can assist in acquiring the tree types farmers want to try out and participate in trials for multiplying types with the characteristics farmers prefer.

Farmer-to-farmer training

Farmers should be encouraged to carryout farmer to farmer training and this can be done through different forms lets say informal individual peer teaching through participating in experiments in their direct neighborhood. It can be done through informal group training where farmers' experiments act as trainers for a visiting group of farmer from other villages or participate in innovator workshops in other communities acting as key presenters. This will help both practices enjoy the practice of agriculture.

There should be field workshops, for these are most effective way to begin this process of team work such workshops also help sensitize senior officials and generate required institutional support since there is much interaction with the stakeholders.

Microfinance for agriculture

This will help poor farmers make sustainable income since approximately 80% of all the people in Kitagwenda earn their living from Agriculture. Through a Microfinance Organization help poor farmers with micro-loans in many areas, this way they can become self sufficient.

Lastly farmers communications and sharing of knowledge is very relevant as this forms part of various types of networks for example market, festivals, exhibitions provide opportunity for local communication on agriculture improvement.

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APPENDICES

APPENDIX I: QUESTIONNAIRES FOR RESPONDENTS

SECTION A

Part I: Demographic characteristics

Name.....

Village.....

Parish.....

Sub-County.....

County.....

2) Sex (Tick where applicable)

   a) Male

   b) Female

3) Age

   19 ☐

   20 – 29 ☐

   30 – 39 ☐

   40 – 49 ☐

   50 – 59 ☐

   60+ ☐

SECTION B

Understanding organic farming

1) Do you have any knowledge about organic farming / agriculture

   Yes ☐

   No ☐

2) If yes, what is your understanding about organic farming?

   .....

   .....

   .....

3) Where do you get the information about organic farming?

   .....

   .....

   .....

4) Are you a member of any farmers' association?

   .....

   .....

   .....

SECTION C

Organic farming practices

1) Do you carry out agriculture in your area?

   Yes ☐

   No ☐

2) If yes what are some farming practices carried out.

   .....

   .....

   .....

3) Which crops do you grow

   .....

   .....

   .....

4) Which animals do you rear

   .....

   .....

   .....

5) How do you manage crops and animals residues

   .....

   .....

   .....

6) Do pests and diseases attack the crops

   Yes ☐

   No ☐

SECTION C

Organic farming practices

1) Do you carry out agriculture in your area?

   Yes ☐

   No ☐

2) If yes what are some farming practices carried out.

   .....

   .....

   .....

3) Which crops do you grow

   .....

   .....

   .....

4) Which animals do you rear

   .....

   .....

   .....

5) How do you manage crops and animals residues

   .....

   .....

   .....

6) Do pests and diseases attack the crops

   Yes ☐

   No ☐

7) How do you control such pests and diseases

.....

.....

.....

8) Where do you get the pesticides?

.....

.....

.....

9) Do you use any manures

Yes ☐

No ☐

10) If Yes, what type of manures do you use

.....

.....

.....

11) Where do you get them from?

.....

.....

.....

SECTION D

Benefits obtained from organic farming / agriculture

1) What are the benefits you obtain from organic farming?

.....

.....

.....

2) Are there some subsidies given by agriculture supporters?

Yes ☐

No ☐

3) If yes, mention some,

.....

.....

.....

4) If no, why?

.....

.....

.....

5) What support do you get from the government?

.....

.....

.....

SECTION E

Problems faced by farmers in adopting organic farming

1) What problem do you face in practicing organic farming?

.....

.....

.....

2) Can those problem be solved?

Yes ☐

No ☐

3) What are some of the solution you have put to solve the problems above.

.....

.....

.....

4) Has the government or extension workers been involved in solving these problems?

Yes ☐

No ☐

5) If yes how?

.....

.....

.....

APPENDIX TWO

INTERVIEW GUIDE

1) What is organic farming?
2) Do you have any knowledge about organic farming?
3) Identify some organic farming practices carried out in your area?
4) What type of crops are grown in your area
5) How do you dispose the crop and animal residues?
6) What benefits have you achieved from organic farming?
7) Do you get some subsidies from the government mention some subsidies that are provided by the extension workers?
8) At what price do you sell the products harvested?
9) Are they the same price with non-organically produce ones?
10) Are the people willing to pay high for organic products?
11) What do you think are the benefits of organic farming to the community?
12) Do all farmers in this village involve themselves in organic farming?
13) What problems are being-faced by farmers practicing organic farming?
14) What has been done to solve these problems?

Agricultural Department
Kichwamba S/county
19-06-08.

The C/person LC II
Bwera Parish

RE: TUHIRWE CHRISTINE

This is to introduce to you the above named lady who is a student of Kampala International University She is on a research work as an academic requirement on organic farming. I therefore request you to guide her interviews some of your farmers who practice organic farming.

Thank you

Yours

AGRICULTURAL OFFICER
DATE 19-06-08
KICHWAMBA SUB-COUNTY

A. Kalabaza

AO - Kichwamba

A MAP OF KAMWENGE DISTRICT SHOWING KICHECHE SUB-COUNTY