

INCOME AND FOOD PRODUCTION ENHANCEMENT BY
LUWEERO DIOCESE HEIFER PROJECT

A Thesis

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Master of Arts in Project Planning and Management

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DECLARATION A

"This thesis is my original work and has not been presented for a Degree or any other academic award in any University or Institution of Learning".

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14/10/11

Date



DECLARATION B

"I confirm that the work reported in this thesis was carried out by the candidate under my supervision".

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DEDICATION

This thesis is dedicated to my lovely husband William, daughters Maria, Martha, Ezereth, Madrine and son Hezirone that I really love and cherish you. May the good Lord Jesus bless you and may you reap the goodness of this world.

ABSTRACT

There has been concerted effort by Government of Uganda, Development partners to eradicate poverty and ensure food security in Uganda. Nevertheless there are households who are poor and food insecure in Luweero district.

A study was carried out to determine the contribution of Church of Uganda Heifer Project to the income and food enhancement of the beneficiary households in Luwero District. The objectives of the study were to determine the level of income and food production to the beneficiary households in Luweero District.

The study was a descriptive survey with an approach of both qualitative and quantitative methods. A sample size of 90 was used to collect data using questionnaires, interview schedules, observations and secondary data.

The results show that more than 60% of the respondents had kept the project animals for over five years. Income from the project animals was used to purchase household items which included food items. There were no reinvestments into buying other animals by Households and cow manure was used to grow vegetables and bananas near the house hold.

Project managers should encourage beneficiaries to re-invest some of the profits into the project for sustainability of the project. The beneficiary households should regularly consult veterinary professionals for appropriate animal husbandry remedies. Project implernenters should train beneficiaries on the use of animal manure on all crops for food availability. Research by Lower Local Governments to investigate youth involvement in the design, implementation and management of livestock related projects in order to enable youth participation in development activities. Further research should be carried out by Developmental partners on how Community Based Organizations utilize reimbursed resources.

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ACRONYMS

AI	:	Artificial Insemination
AIDS	:	Acquired Immune Deficiency Syndrome
CBO	:	Community Based Organization
CULDHP	:	Church of Uganda Luweero Dioceses Heifer project
FGD	:	Focus Group Discussion
HIV	:	Human Immuno-Deficiency Virus
LLG	:	Lower Local Government
MAAIF	:	Ministry of Agriculture Animal Industry and Fisheries.
MDGs	:	Millennium Development Goals
MOFPED	:	Ministry of Finance Planning and Economic Development
NGOs	:	Non Governmental Organizations
PEAP	:	Poverty Eradication Action Fund
PMA	:	Plan for Modernization of Agriculture
PWD	:	People with Disabilities
UNFAO	:	United Nations Food and Agriculture Organization
UNFP	:	United Nations Population Fund

CHAPTER ONE

THE PROBLEM AND ITS SCOPE

Background of the Study

Before 1974, the present Luweero District was part of the former East Mengo District with its headquarters at Bombo. In 1974 the East Mengo District was sub divided into two districts namely Mukono with its headquarters in Mukono town and Luweero with its headquarters at Luweero Town. By that time the district was composed of four counties namely Buruli, Nakaseke, Katikamu and Bamunanika. (Luweero Abstract, 2009).

When the Government of Uganda introduced the decentralization system of governance Buruli County curved out of Luwero and given a district status in 1997 as Nakasongola District. In July 2005, Nakaseke County was also given a district status leaving the mother district with two counties that is, Bamunanika and Katikamu (Luwero Abstract, 2009).

Luwero district lies north of Kampala, between latitude 2 degrees north of the Equator and East between 32 to 33 degrees. The total area of Luwero district is approximately 2577.49sq km. Agriculture is the dominant economic activity in the district, supported by an annual rainfall ranging between 1500mm and 1900mm per year. In the district, agriculture employs 73% of the lab our force (Luweero Abstract, 2007).

Food scarcity in Uganda and in the East African region is caused by low production and productivity levels, partly caused by inadequate investments, use of poor technologies and changing rainfall patterns. As a result, prices of food commodities have skyrocketed beyond the reach of many households including those in Luweero District.

Significant nutritional indicators show that Iron Deficiency, Anemia is prevalent in 73% of children under 5 years and in 49% of women over 18 years. While vitamin A deficiency affects 20% of children and 19% of all women (UDHS, 2005/2006)

The 1996 World Food Summit report defined food security as existing “when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”(Eldis, 2011). Food security comprises 3 main elements: food availability - sufficient, appropriate food is consistently available; access to food - people have the means to purchase, or barter for, the food they need to maintain an adequate diet and level of nutrition; food utilization - food is properly used (Eldis, 2011).

The main causes of rising food prices are contested but generally said to include: high fuel and fertilizer costs, poor weather conditions in some major grain exporting countries, a rise in demand for food including from the expanding middle classes in India and China, an increase in bio-fuel production reducing the amount of land allocated to food production. However, even without the combination factors that have caused the 2008 food crisis, many poor people are affected by predictable seasonal cycles of hunger and food insecurity. The multidimensional nature of food security points to livelihoods approaches as a lens for aiding understanding of food security issues. Livelihoods approaches can provide a useful analytical framework because of their focus on; assessing risk, vulnerability and resilience; disaggregated analysis of issues and impacts on different groups; both local factors that affect people’s lives and the wider institutional and policy environment (Eldis,2011).

Food insecurity in Africa has many complex causes, including HIV/AIDS, climate change, environmental degradation, conflict, a huge increase in population size, and debt. These factors have had a profound impact on traditional livelihoods, making them unsustainable and, for many people in constant crisis, restricting their ability to access sufficient food. Coping strategies used in response to crisis further contribute to the erosion of livelihoods. The International Federation is focusing its support on food security in Africa in response to such particularly high level needs in the continent.

Since 2000, a large number of African National Societies have been actively engaged in initiatives to reduce food insecurity. Around half of the sub-Saharan African National Societies have so far implemented food security programs, designed to improve the availability, access and utilization of food in communities. In addition, NGOs have responded to food security issues by taking increasingly rights-based and participatory approaches (Bailey, 2007)

Uganda is among the world's poorest countries with an average per capita income of less than US \$300 a year (World Bank, 2000). In Uganda, the Plan for Modernization of Agriculture (PMA) - a central element of Uganda's poverty eradication strategy - is key in enabling the rural population to improve their livelihood and ensure food security through changing subsistence agriculture to doing farming as a business (PMA Secretariat, 2001). Modernizing agriculture will also need the support of local governments and therefore there is a need for empowering local authorities to ensure they have the necessary capacities to undertake those new challenges. It is expected that the local governments will deliver agricultural

services and financing those, in collaboration with local and external stakeholders, NGOs, CBOs and donor community as well as the private sector (PMA Secretariat, 2001).

Heifer Project International (HPI) began its operations in 1982 in Gulu district in response to a request by COU to rehabilitate Uganda in the era after the civil wars. The main goal of the HPI Uganda is to improve the nutrition and income status of small-scale farmers with limited resources, women, and people with disabilities (PWDs), HIV & AIDS affected and infected persons with emphasis on training and environmental protection through integrated livestock farming (HPI, Report 2010).

Church of Uganda Luweero Diocese is one of the 30 Dioceses of the Province of Uganda. It was founded in 1991 and is involved in pastoral work as well as improving the standard of living of rural people in the diocese through education, agriculture, improving health units, providing clean water and sponsoring orphans in schools. The diocese first contacted HPI for support in 1994 through Send A Cow Uganda (SACU). The diocese currently covers Luweero, Nakaseke and Nakasongola districts. The 3 districts form the former greater Luweero district. During the civil wars of the 1980s, almost all infrastructure in the districts were destroyed, people had limited income and were malnourished due to lack of animal protein though they had some land and market for surplus livestock products like milk and use cow manure for crop growing.

Between 1996 and 2010, HPI supported COU Luweero Diocese to implement a project aimed at improving household nutrition and incomes through increased integrated dairy farming. The objectives of the project were to; improve household incomes and nutrition through training in

Purpose of the Study

The purpose of the study was to investigate the contribution of Church of Uganda Heifer Project on food production and enhancement of income among the beneficiary households in Luwero District.

Study Objectives

The general objective of the study was to determine income and food production enhancement by COU Luweero Diocese Heifer project on household beneficiaries in Luweero District.

The specific objectives were to:

- 1- Determine the level of income of the beneficiary households before and after project intervention.
- 2- Determine the level of milk production before and after project intervention.
- 3- Determine food production using animal manure from the project animal (s).

Research Questions

The research questions for the research were;

- i. What was the level of household income before and after project intervention?
- ii. What was the level of milk production by households before and after project intervention?
- iii. What are types of food crops produced by households using animal manure?

Scope of the study

Geographical scope: The research was conducted in the two districts of Luweero and Nakaseke where the project is situated in 11 Lower Local Governments (LLG) of Luweero, Butuntumula, Katikamu, Nyimbwa, Makulubita, Bamunanika, Kikamulo, Nakaseeta, Luweero Town, Wobulenzi and Bombo Town Councils.

Theoretical scope:

The study covered the issues of household income and food production enhancement and other benefits attributed to COULD Heifer project.

Time Scope:

The study investigated the project operations covering the period from 1997 to 2010.

Significance of the Study

The Local Government Act (1997) part IV Article 31 and sub section 6 empowers District Local Governments and Lower Local Governments to monitor the provision of Government services and implementation of projects in their areas of jurisdiction so as to incorporate interventions in the District Development Plan (DDP). Thus the outcome of the study will help the Luweero district and other LLGs to improve delivery of services offered by the COULDHP to the rural communities and households.

Operational Definitions of Key Terms

Food Security	:	Exists when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life
Food availability	:	Sufficient, appropriate food is consistently available.
Access to food	:	People have the means to purchase, or barter for the food they need to maintain an adequate diet and level of nutrition.
Dairy farming	:	a farming system specializing in the production of milk - usually from cows, but in some regions from sheep, goats, yaks, buffalo, or reindeer.
Economic activity	:	Covers all market production and certain types of non-market production, including production and processing of primary products for own consumption, own-account construction (owner occupied dwellings) and other production of fixed assets for own use.
Employment	:	This includes all wage and salary earners and managers in all businesses, and directors actively working in incorporated businesses. It includes those working full-time or part-time and those who are permanent.
Agriculture	:	This term is used to describe crops, livestock, and poultry and fishing activities.

Assets : are the property of a business. They may be classified as: Current assets; consisting of cash, stock and book debts; Fixed assets; consisting of buildings, plant and machinery; and intangible assets being the value of goodwill or patents

Occupation : Refers to the nature of task and duties performed during the reference period preceding the interview by persons in paid employment, unpaid family work or self-employment jobs.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

This chapter provides information on concepts, ideas and opinions from authors and experts on income and food security relationship to dairy farming in Uganda and Luweero district. The chapter also reviews the origins of Heifer International Project and then COULDHP.

Concepts, ideas and opinions from authors and experts

The number of people who are food insecure has increased from 12 million in 1992 to 17.7 million in 2007, an obvious consequence of the high population growth rate (MAAIF, 2010). Experience suggests that one of the best ways of reducing rural poverty is Agricultural production for the market (MAAIF 2010).

Research by IFPRI (Benin, 2007) has demonstrated that if agriculture in Uganda grew at 6 percent per annum, the national poverty head count level would fall from 31.1% in 2005 to 17.9% in 2015. This would be well below the 28% Millennium Development Goal target. Moreover the absolute number of poor persons in Uganda would decline from 8.4 million in 2005 to 6.9 millions. With population growth averaged over the years 2000-8 however the absolute number of poor people is still projected to increase from 8.5million in 2005 to 10.2 million in 2015. This is the context in which agriculture development is so urgently required.

The World Food Summit of 1996 defined food security as existing "when all people at all times have access to sufficient, safe, nutritious food to

maintain a healthy and active life". Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences

However, smallholder cattle farmers in developing countries have multiple goals for their cattle enterprise. The roles that cattle play in these systems are manifold. Apart from meat and milk production, livestock are closely linked to the social and cultural lives of millions of resource-poor farmers for whom animal ownership ensures varying degrees of sustainable farming and economic stability. These values vary from society to society and largely determine the strategies, interventions, and demand and development opportunities for livestock. Livestock acts as security assets influencing access to informal credits and loans. They are also considered a common means of demonstrating wealth, cementing relationships through bride price payments and as social links, important in crises (Ouma et al, 2004)

In many smallholder systems in developing countries, manure is considered as important as milk, meat or draught power (Romney *et al.* 1994), quote a study in Zimbabwe which recorded that farmers reduced grazing time by keeping cattle penned longer in order to collect more manure even though this meant a reduced feed intake thereby adversely affecting production. In the Kenyan highlands, use of organic fertilizers particularly livestock manure has been on the increase among the smallholder farmers due to its substitutability for inorganic fertilizer as the cost of the latter rises due to market distortions, resulting from physical constraints such as roads infrastructure (Omamo *et al.*, 2002; Obare, 2000). In Kenya, researchers found that the value of manure produced in a small dairy farm may be approximately 30% of the value of milk produced. This value is captured on-farm through the increased value of crop production, resulting from manure application to crops on-farm (Lekasi *et al.*, 1998). Large scale dairy producers on the other hand, may have great difficulty capturing this value since

quantities of manure produced may be so great that the issue becomes that of disposal rather than use (Staal, 2002).

Non-market benefits of cattle are crucial to the survival and competitiveness or profitability of smallholder cattle production systems. They play a significant role in meeting household needs, more so for resource poor farmers, especially women who do not have alternative avenues to meet these needs. From this study various conclusions can be drawn and lessons learnt (Ouma et al 2004).

Dairy farming is a farming system specializing in the production of milk - usually from cows, but in some regions from sheep, goats, yaks, buffalo, or reindeer (<http://encyclopedia.stateuniversity.com>). Specialist dairy-cow breeds include Friesians, Ayrshires, and Jerseys; there are also dual beef-and-dairy herds, such as the US shorthorn. Dairy farming is most common in the wetter, temperate parts of the world, where grass grows well and where cows can graze outside for all or part of the year. In hotter climates, dairy cows tend to be confined all year round, and fodder is harvested and carried to them. Most farmers specializing in dairy husbandry sell their milk to dairy manufacturers, who make butter, cheese, cream, yogurt, and skimmed milk. These foods are dairy products.

Dairy farming today

Milk production today is big business. Currently in the UK 2.2 million cows are held in 22,000 dairy holdings. The total value of the production of milk in the UK is estimated to be £2.7 billion. This is more than the value of production of beef, lamb, pig or poultry meat and around three times the value of the production of fresh vegetables (Defra, 2005). Excluding suckled milk, each cow now produces around 20 litres of milk per day, which equates to around 7,000 litres of milk yearly (Defra, 2005). Selective breeding and

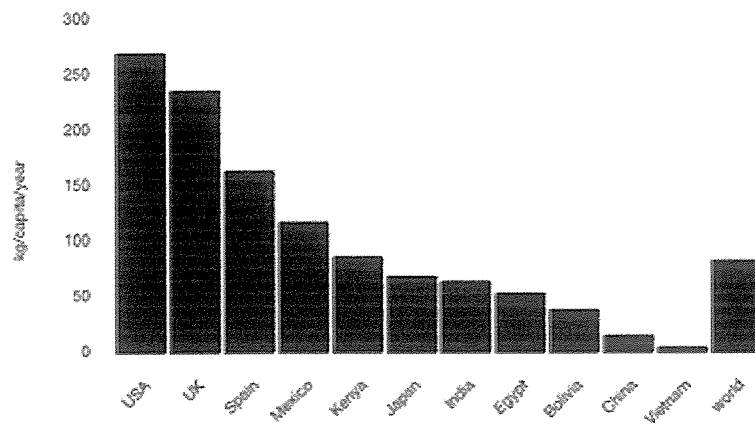
high protein feed has increased the average yield per cow from nine litres (16 pints) per day to 22 litres (39 pints) per day in just a few cattle generations.

A common misconception is that it is natural for cows to produce milk constantly. This is not the case; just like us, cows only produce milk after a nine-month pregnancy and giving birth. Today's large-scale intensive dairy farming employs a highly regulated regime of cycling pregnancy and lactation concurrently, meaning that cows are both pregnant and being milked at the same time for most of each year. This intensive physical demand puts a tremendous strain on the dairy cow and, as she gets older, infertility and severe infections causing mastitis and lameness cuts short her economic and productive life (The Dairy Council, 2002). The average lifespan of a modern dairy cow is only about five years – that is after three or four lactations, when naturally she may live for 20 to 30 years.

Who drinks milk?

Since 1960, global milk production has nearly doubled (Speedy, 2003). Around three-quarters of the world's population do not drink milk, but among those who do, the pattern of consumption varies widely between countries. Data collected by the United Nations Food and Agriculture Organization (UNFAO) in 2002 provides figures for the consumption of milk (excluding butter) in kilograms per capita per year for over 170 countries (FAOSTATS, 2002).

Figure 1: Consumption of milk in selected countries compared to world consumption.



Data from FAOSTATS, 2002.

As shown in Figure 1 the level of milk consumption varies widely between countries, even between neighboring countries in the same continent. For example, in Portugal 219.7kg of milk is consumed per person per year whereas in Spain the figure is considerably lower at just 158.3kg per person per year.

The highest levels of consumption are seen in USA. In Sweden for example, a massive 369.4kg of milk is consumed per person per year, with Finland close behind at 350.6kg. Other countries consuming large volumes of milk include the Netherlands (345.7kg), Switzerland (332.4kg), Albania (298.8kg), Austria (293.3kg), Ireland (279.5kg), France (275.5kg) and Norway (275.1kg). In the US 261.8kg of milk is consumed per person per year, and in the UK the figure is 230.9kg. Whereas the average amount of milk consumed per person per year on a global scale is just 79kg.

The lowest levels of consumption are seen in Africa and Asia. In the Democratic Republic of the Congo a mere 1.6kg of milk is consumed per person per year. Other countries consuming small volumes of milk include Liberia (1.8kg), the Democratic People's Republic of Korea (3.9kg), Mozambique (4.5kg), Vietnam (5kg), China (13.3kg) and Thailand (18.8kg). With levels this low, it is reasonable to assume that many people in these countries and others do not consume any milk or milk products at all.

It could be argued that the low level of milk consumption seen in developing countries just reflects the fact that people cannot afford to buy milk. However, in Japan for example (not a developing country), milk consumption is very low at only 67.1kg. Most people in the world do not drink milk; their reasons may be cultural, economical, historical or biological. For example, most of the world's population is lactose intolerant. But many of us think of milk as a fundamental component of a healthy diet. Why is this? Is milk the only source of some obscure essential nutrient? Or is milk unique in that it contains all the nutrients that we require?

Heifer Project International (HPI) began its operations in 1982 in Gulu district in response to a request by COU to rehabilitate Uganda in the era after the civil wars. The main goal of the HPI Uganda is to improve the nutrition and income status of small-scale farmers with limited resources, women, and people with disabilities (PWDs), HIV & AIDS affected and infected persons with emphasis on training and environmental protection through integrated livestock farming.

HPI is a non-profit, humanitarian organization dedicated to ending world hunger, poverty and saving the earth by providing livestock, trees,

training and other resources to help poor families around the globe become self reliant. (HPI Uganda Program Annual Report 2009). HPI was founded in the United States of America by Dan West in 1944 during the World War II. Dan West was involved in exporting and distribution of powdered milk as relief in Spain after the Spanish war. He got a vision as to why they were not giving the people a source of milk instead of powdered milk. From there, they started collecting heifers for shipping to the people in need. Therefore, HPI was founded on the principle of "not a cup but a cow" to provide hungry families with a source of food rather than relief. Since 1944, Heifer has helped more than 10.5 million hungry families in the United States and 125 other countries move toward self-reliance through the gift of food- and income-producing animals (www.heifer.org).

Dairy farming in Uganda

Livestock production in Uganda contributes 7.5% and 17% to total GDP and agricultural GDP respectively. It is an integral part of the agricultural system in many parts of the country. Mixed smallholder and the pastoralists own over 90% of the cattle herd and 100% of the small ruminants and non-ruminant stock. Cattle are the most important of all the livestock (Uganda report, 2010).

Livestock production has continued to grow at a rate of over 4% per annum in response to increasing demand for meat and milk in the local market. Higher rates are envisaged as government pursues its policies of modernization and commercialization of agriculture.

The national livestock and poultry population increases at an average rate of 3% per annum and was estimated to comprise 6 million cattle, 9.2 million

goats, 1.6 million sheep, 1.3 million pigs and over 25 million poultry in 1999. The indigenous breeds account for over 95% of the national herd/flock. Table 1 below shows the trend of the livestock population in Luwero district.

TABLE 1
Showing livestock kept in Luweero in 1991-2000.

Year	Cattle	Goats	Sheep	Pigs	Poultry
1991	5,121	4,950	820	1,210	20,020
1992	5,209	5,070	845	1,228	20,576
1993	5,370	5,227	871	1,266	21,214
1994	5,106	5,713	971	1,374	21,404
1995	5,233	6,284	1,068	1,511	21, 832
1996	5,301	6,913	1,175	1,663	22,050
1997	5,460	7,704	1,292	1,829	22,712
1998	5,775	8,364	1,422	2,012	23,648
1999	5,957	9,201	1,564	2,013	24,830
2000	6,143	10,121	1,720	2,434	26,072

Source: Ministry of Finance, Planning and Economic Development; Small Ruminant Development Study Report, Ministry of Agriculture, Animal Industry and Fisheries, 1999.

The table 1 above shows that at the beginning of the COULHP there were 5,460 cattle kept in Luwero which kept on increasing in the three consecutive years.

Production systems and management practices are dictated by the degree of dependence by the households on livestock products for income, cultural values, and food supply and crop agriculture practiced in association

with livestock under traditional and non-traditional practices. The bulk of cattle and small ruminants are kept under traditional herding production systems, while poultry and pigs are largely left to tend themselves on the range (MAAIF 2006).

The prevailing levels of childhood under and malnutrition are high accounting for 40 % of all deaths before the age. 8.6 % of child of children fewer than five years are stunted, 4% are wasted and 22.5% are under weight (with rural population being more affected than the urban). In addition 10%of women are under nourished while micronutrient deficiencies are common (MAAIF Report 2006).

Since the 1960s, one of the most critical problems facing dairy farmers in Uganda has been recognized as that of marketing their milk (Okwenye, 1993). This problem has been recognized in the overall context of the importance of marketing considerations not only in stimulating increased milk production but also in raising dairy farm incomes and living standards and improving the nutritional well-being of the population in rural as well as urban areas. Hence, in Uganda the development of milk marketing infrastructure has been inextricably linked with the development of the dairy industry (Okwenye, 1993).

Although Government dominated the early initiatives in organized milk marketing in Uganda, a few independent producer marketing groups were established. Notable among the early groups established in the 1960s were Toro and Kigezi dairy co-operative societies (Okwenye, 1993).

However, all the development initiatives in the dairy sector got a setback in the 1970s on account of civil disturbances and political instability. It was not until 1987 that a serious program to reconstruct the national economy

was put in place. Accordingly, the Uganda Government prepared the National Rehabilitation and Development Plan for the period 1986 - 1990 which was later extended to 1992. The plan identified the Rehabilitation of the Dairy Industry (Project AG: 13) as a priority program whose overall goal was to regain self-sufficiency in milk through; restoring production on dairy farms, improving milk marketing and strengthening dairy extension services (Okwenye, 1993).

Before the 1980s, milk production in Uganda occurred largely in two contrasting production systems (ILRI, 2008). There were the large, mostly government-owned, commercial dairy farms located in the wetter parts of the country on which exotic and cross-bred dairy cattle were kept and grazed on natural pastures. Then there were the pastoralists, who kept large numbers of local cattle under traditional management systems in the drier eastern and northeastern parts of the country.

From the mid-1980s, development agencies in Uganda like Heifer Project International began introducing zero-grazing systems, in which high-yielding genetically improved cows (pure or cross-bred with local cattle) were kept in stalls and fed with fodder cut and carried to them daily. These more 'intensive' dairy systems were promoted among Ugandan farmers along with training on managing dairy breeds and growing fodder. This gave many smallholders an incentive to buy exotic dairy cows or to upgrade their indigenous cows by cross-breeding them with exotic stock. Some of Uganda's small farmers adopted strict zero-grazing practices while others combined grazing paddocks with stall feeding, a hybrid dairy production system that came to be known as 'semi-intensive'. As a result, there has been a steady increase over the last two decades in the numbers of improved dairy cows in

Uganda's national herd with concomitant increases in national milk production yields, smallholder contributions to national milk production, dairy's contribution to the national economy, and per capita milk consumption.

The Ugandan economy is dominated by the Agricultural sector. It accounts for 43% of the Gross Domestic Product (GDP). Eighty five per cent of the population of the 22 millions lives in rural areas and mainly on agriculture for their livelihood. The agriculture is also the provider of food self sufficiency and food security. Being the leading sector of the Ugandan economy, agriculture is the engine and major source of future growth (PMA 2000).

Agricultural output the present comes from about 3 millions small holder farmers who constitute three-fourths of the total. Food crop production predominates the agricultural sector contributing 71% of agricultural GDP, while livestock products account for 17%, export crop production, only one third of the food crop produced is marketed compared with two thirds of livestock produced. About 42% of the agricultural GDP consists of subsistence crops for home consumption and is none monetized (PMA, 2000).

The overarching goal of the Plan for Modernization of Agriculture (PMA) is poverty eradication. Interventions seek to increase the productivity of factors of production in agriculture, to ensure food security, to create gainful employment, to increase incomes and to improve the quality of life of those engaged in the agriculture sector (PMA 2000).

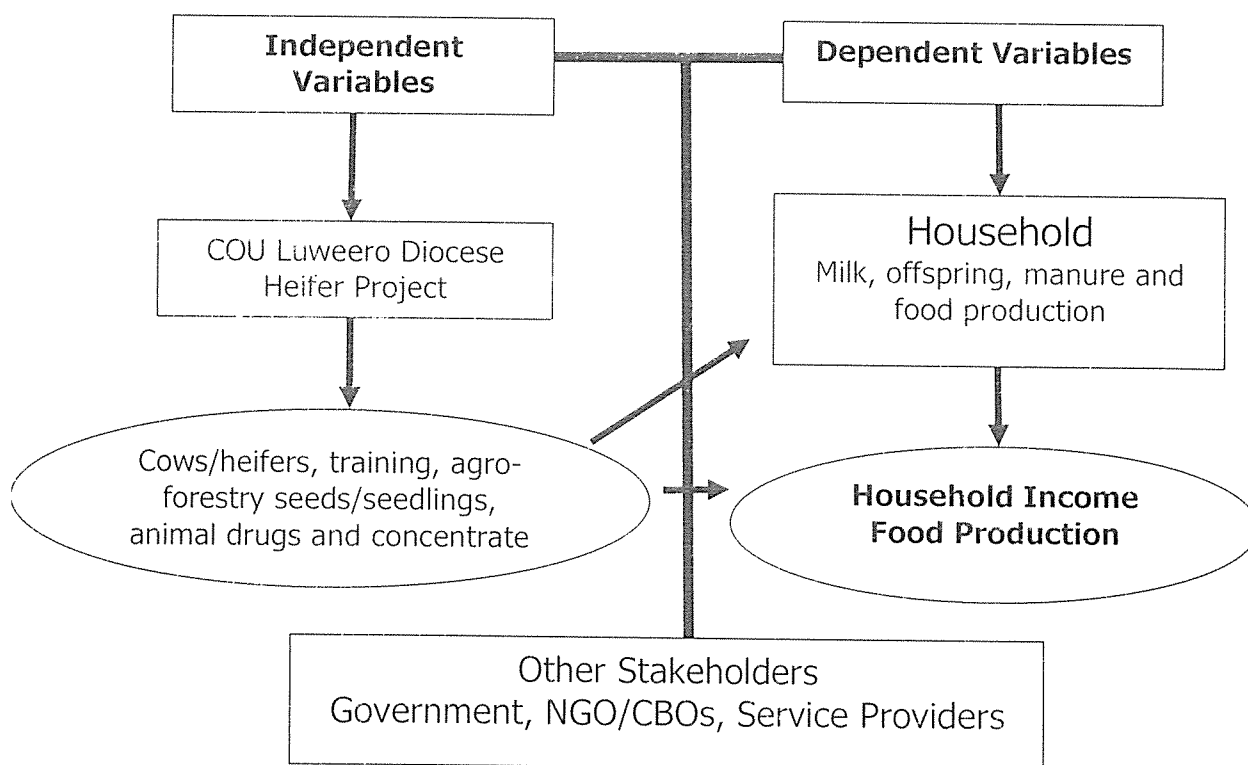
In terms of implications, decline in food production not only affects house hold incomes but may also compromise overall house hold food security. Although some parts of Uganda are able to produce surplus food, the

nutritional quality of house hold diets is less than satisfactory. Indeed, more than 50% of the households are unable to meet the minimum recommended dietary intake of 3000 calories per day (Agriculture sector Investments, 2008).

Conceptual frame work: The independent and dependent variables are presented in the Conceptual frame work here below:

FIGURE 2

Conceptual Framework



CHAPTER THREE

METHODOLOGY

Introduction

This chapter highlights the research design, sample and sampling procedures, data collection instruments, data processing and data analysis procedures used for the study

Research Design

Research design refers to the plan for carrying out a research study and it is after the determination of the research problem (Amin, 2005). Earl Babbie identifies exploration, description and explanation as the three purposes of social science research. The study design was descriptive survey design and the approach was both qualitative and quantitative methods. The study data was collected from a representative sample of the study population that is the households who had benefited from the COULDHP.

Research Population

By the end of the year 2010, 123 households had benefitted from the COULDHP by receiving heifers from HPI (HPI Uganda Annual Report, 2010) and therefore constituted the research population which included both females and males. The population also involved the project managers, area leaders and opinion leaders of the communities where the project is located who were 15.

Sample size

A sample is defined as a section of the population which can be generalized for the whole population (Amin, 2005). The sample size was 90

respondents who were selected using Sample Size Selection Chart at a precision of 5% (Isaac et al 1981; Smith et al 1983) and drawn from 11 Lower Local Governments (LLG) of the two districts of Nakaseke and Luweero. To avoid biasness, random selection was used to identify the 90 respondents from a total of 11 LLGs. The number of samples selected from each LLG was proximately according to the numbers of beneficiary households.

Sampling Procedure

The sampling procedure explains how the sample was arrived at from the population (Opolot et al, 2007).

The researcher carried out the study in 11 LLGs of Luweero and Nakaseke districts to get clear and well representation status of COULDHP. The LLGs which participated in the study were:

Luweero, Katikamu, Nyimbwa, Makulubita, Butuntumula, Bamunanika, Kaasangombe, Kikamulo and the town councils of Luweero, Wobulenzi and Bombo.

The researcher used lists obtained from COULDHP to randomly select the participating households from each LLG. This was done by recording all households from the LLGs and randomly selecting households to participate. Samples selected per each LLG were; Luweero (13), Katikamu (11), Nyimbwa (8), Makulubita (9), Butuntumula (9), Bamunanika (6), Kaasangombe (7), Kikamulo (8), Luweero T.C (7), Wobulenzi T.C (7) and Bombo T.C (5).

On top of household respondents, the researcher interviewed the Project Holder (Coordinator), Chairperson of the beneficiary committee, 2 District Veterinary Officers, 11 Lower Local Government Leaders. The respondents were selected purposively since they were the only ones in their positions and an interview schedule (appendix II) was used.

Research Instruments

Instrument is the generic term that researchers use for a measurement device (survey, test, questionnaire, etc. (Carole, 2008). The instruments used were; semi-structured questionnaires and interview schedules, observations, literature review and photographs. Questionnaires were designed to allow for data collection from the selected households. A semi-structured questionnaire was designed by the researcher in consultation with the academic supervisor. Additional data was obtained through observation of various developments relevant to the study in the course of interaction with respondents. Focused Group Discussions was also utilized to collect data from community members on their perception of the project.

The researcher identified 2 research assistants who were well conversant with the 2 districts of Luwero and Nakaseke for assistance in data collection. The research assistants were trained before going out to the field to administer the interview schedules. The researcher closely monitored the research assistants to enable them collect accurate data. The researcher was however unable to hire Geographical Positioning Systems (GPS) for easy location of respondents because of its scarcity in availability.

Validity and Reliability of the Instruments

Validity is the degree to which an instrument measures what it intends to measure and the degree to which the "thing" that instrument measures has meaning or rather, if it is an idea that reflects the real world with any accuracy. Reliability is how consistently a test measures what it attempts to measure (Carole, 2008). To measure validity and reliability of data gathered through questionnaires and interview schedules, the researcher made a pretest prior to the actual study to test the effectiveness of the data collection

instrument. The pretest was done on 5 zero grazing farmers in Kikyusa Sub County who were not beneficiaries of COULDHP. After the pretest, the questionnaire was corrected in terms of time, length and consistency.

Data Gathering Procedures

The questionnaires were administered by the researcher to the respondents found at their household locations. The questionnaire was semi-structured whereby the researcher asked the respondent while recording responses in the gaps provided. Semi-structured was preferred because it allows for interpretation of the questions formulated in English to the local language which was Luganda as for the study sample. The interview schedules were administered to the key informants who were selected according to their leadership roles in the communities. The questions were open-ended which allowed expansion of the responses. There were personal interview schedules administered to the project holder, the chairperson of COULDHP, 2 Veterinary Officers of Luweero and Nakaseke districts and 11 political and community leaders from LLGs.

Data Analysis

Collected data was summarized into tables and graphs using frequencies and percentages to describe what the data is and what it shows. It was then interpreted to give meaning.

Ethical Considerations

The researcher obtained clearance from the University ethical body/ethics committee to conduct the research and there was consent of the respondents interviewed and information divulged was kept confidential.

Limitations of the study

Some of the limitations encountered during the study included: Illiteracy of many respondents, which required spending extra time with them while translating information from the questionnaire into the local language most appealing to them. This was necessary to enable the researcher get the most accurate information. There were instances where women respondents were interviewed, not all the information could be divulged to the researcher due to cultural factors. Culture dictates that some information is divulged only when the male household heads are present. Men dominate over women in making household decision and releasing of information in the area under study.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Introduction

The data collected during the study was manually cleaned, coded and analyzed by the researcher with the help of the research assistants. The major parameters considered were: household characteristics (age, sex, period of ownership of the dairy enterprise, land and cattle ownership), sources of household income, household income attributed to the project, utilization of household income, average daily milk production per household, average daily milk utilization per household, manure use in the production of food crops.

Characteristics of households

Age of beneficiaries

The researcher was interested in finding out the age of the beneficiaries as a parameter to determine the age group involved in the heifer project. The results are presented in table 2 below.

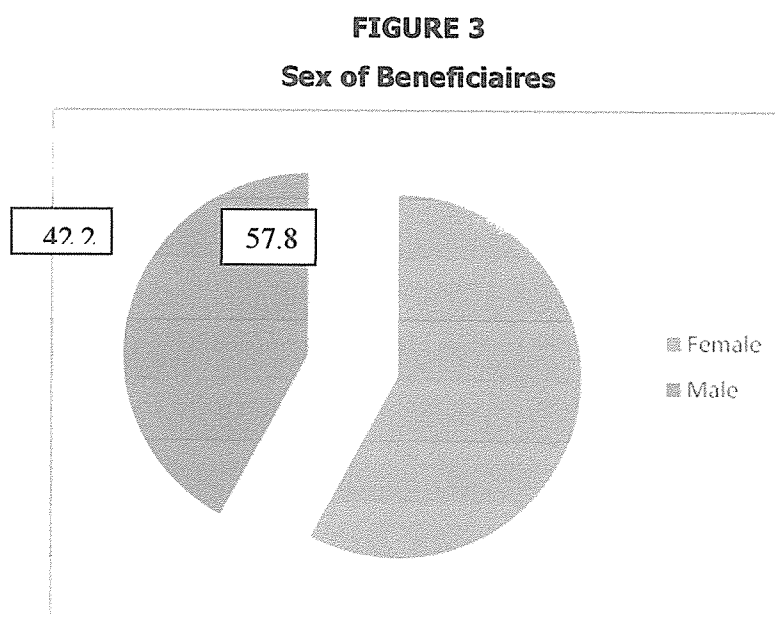
TABLE 2
Age of respondents.

Age brackets (years)	Frequency	Percentage
18-30	0	0.0
31-45	69	76.7
46-60	17	18.8
>60	4	4.5

Table 2. Above depicts that the majority (76.7%) of beneficiaries were in the age range of 31-45 years. It is worth noting that there were no beneficiaries under the age of 30 years and only 18.8% of the beneficiaries were in the age group range of 46-60 years and 4.5% were above 60 years. This implies that the active age group (18-30years) which constitutes the youth was not involved in the project as beneficiaries. There were fewer beneficiaries above 60 years of age.

Sex of beneficiaries

The researcher was also interested in finding out the sex of the beneficiaries as a cross cutting issue and the results are presented in Figure 3 below.



There were slightly more female (57.8%) than male (42.2%) as indicated in figure 3 above.

Since the heifers were given to households, the results in the table above imply that the project targeted women at the households as the major beneficiaries. It also implies that some beneficiaries were women as individuals. This consideration and the priority support of women were confirmed by the project managers. The bigger number of women was also in

line with the official statistical data which indicated the percentage of women in Luweero District to be 50.8% compared to 49.2% of men (Luweero Statistical Abstract Report, 2006).

Land ownership

The researcher also wanted to know the land ownership by the households as an indicator of experience in rearing the animals and doing other agricultural activities for income generation and food production, a precondition for becoming a beneficiary of the COULDHP. The results are shown in figure 4 below.

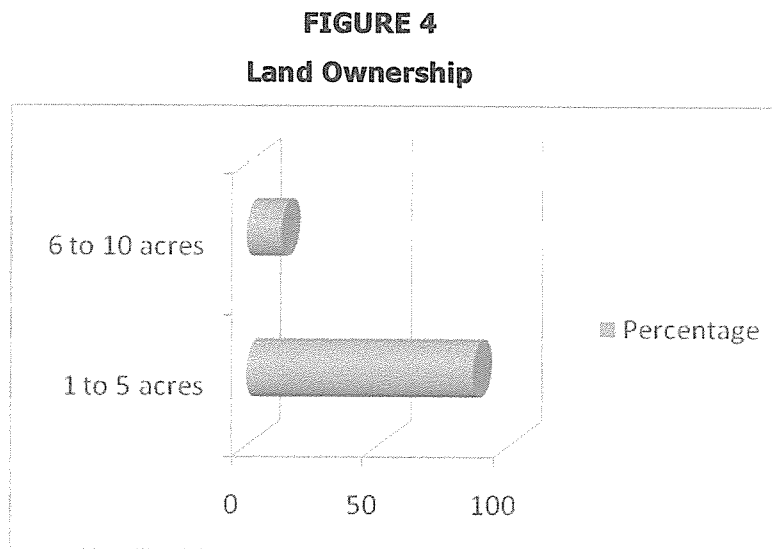


Figure 4 above indicates that more than 80% of the beneficiaries were found to own between 1 to 5 acres of land and less than 20% owned between 6 to 10 acres of land. The findings show that the households in Luweero district owned land and qualified to benefit from the COULDHP.

Period of ownership of project animal (s)

Researcher's interest was to find out the period of ownership of the animals since the time of receiving them. Figure 5 below show the results. The aim was to establish sustainability of the project.

FIGURE 5
Period of Ownership of project animal(s)

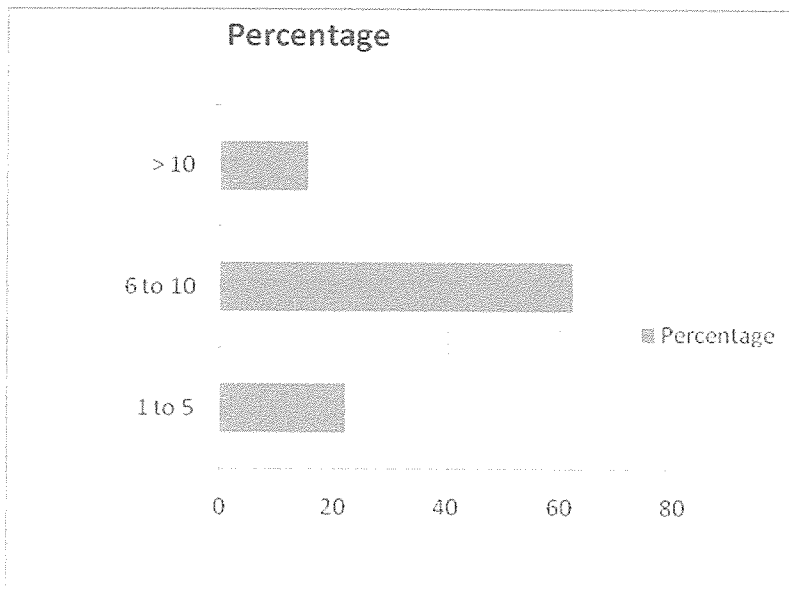


Figure 5 above shows that 62.2% of the households had kept the project animals for a period of 6 to 10 years while 22.2% of the households had kept their animals for 1 to 5 years. Only 15.6% households had kept the animals for more than 10 years. This means that the project had been implemented for more than 10 years.

Cattle ownership by households before the project

Cattle rearing is common in the northern parts of Luweero district, while subsistence agriculture and commercial horticulture farming is undertaken in the southern parts of the district. At the start of the dairy cattle project and in the interest of baseline data of ownership of cattle by the beneficiaries, the researcher investigated the types and number of cattle owned by the households before the project. From the review of documents at the start of the project in 2006, Luweero district had 80, 590 heads of cattle and of these, 3, 280 were exotic dairy and 5, 211 were hybrid dairy cattle as reflected in table 3 below.

TABLE 3

Distribution of Cattle in Luwero District as at 31st December 2006.

Sub County	Exotic Dairy	Hybrid Dairy	Hybrid Boran	Local Cattle	Total no. of Cattle
Butuntumula	350	1050	7100	3500	12000
Luweero	320	1325	0	4415	6060
Katikamu	540	1250	0	5103	6893
Nyimbwa	1070	120	0	566	1756
Makulubita	125	310	20	3154	3609
Bamunanika	160	240	0	3967	4367
Zirobwe	202	273	0	5094	5569
Kalagala	450	519	0	4033	5002
Kikyusa	20	79	170	10065	10334
Kamira	43	45	280	24632	25000
Total	3280	5211	7570	64529	80590
%	4.1	6.5	9.4	80	100

Source: Luwero District Statistical Report 2006.

The above data is evidence of the ownership of dairy cattle by some households in 2006 while the project was starting. The total number of exotic and hybrid dairy cattle similar to those distributed by the COULDHP was 8,491.

Types of cattle reared by households before and after the project

The researcher was also interested in finding out the types and number of cattle reared before the project and then compare with the status of cattle rearing at the time of conducting the study. Table 4 below shows the results.

TABLE 4
Types of Cattle Reared.

Type of cattle	Before		After	
	Frequency	Percentage	Frequency	Percentage
Exotic	0	0.0	69	76.7
Hybrid	19	21.1	10	11.1
Local	65	72.2	11	12.2
None	6	6.7	0	0.0

The findings in table 4 above show that; at the start of the project, majority of the households (72.2%) reared local cattle while 22.1% reared hybrid dairy cattle. 6% of the households did not own cattle and none of the households reared exotic dairy cattle.

By the time of study in 2010, majority of the households (76.7%) owned exotic dairy cattle while only 11.1% and 12.2% owned hybrid dairy and local cattle respectively.

This implies that the project transformed the cattle ownership structure and hence rearing system from mainly local cattle ownership and corresponding grazing systems to mainly the exotic and hybrid dairy cattle ownership under the zero grazing system.

Sources of household income:

The researcher sought to discover the various enterprises from which households derived their income at the start of the project and at the time of study in order to discover the contribution of the dairy cattle project to income generation. The results are shown in the table 5 below.

TABLE 5
Sources of Household Income.

Household Income source	Before the project		Current status	
	Frequency	Percentage	Frequency	Percentage
Crop enterprises	44	48.9	36	40.0
Cattle enterprises	27	30.0	39	43.3
Other livestock	12	13.3	8	8.9
Others	7	7.8	7	7.8

The findings indicated in table 5 above show that; At the start of the project, majority of the households (48.9%) derived their income from crop enterprises like coffee, maize and bananas. In addition, 30% of the households derived their income from cattle rearing alone and 13.3% from engaging in other livestock enterprises like local chicken and pig rearing. 7.8% of the households received their income from other sources like salaries, wages and petty trade.

During the time of study in 2010, the findings show an increase in the number of households who earned their income from cattle enterprises, from 30% to 43.3%, a decrease in households who earned income from crop enterprises from 48.9% to 40% and a decrease in households who earned from other livestock, from 13.3% to 8.9%. The number of households who derived income from other sources remained the same (7.8%). This implies that the introduction of the dairy cattle enterprise earned the beneficiary households more income than the crop and other livestock

enterprises and hence the changes in engagement in various income generating enterprises by the households

Household income attributed to the project

The researcher sought to find out household income attributed to dairy cattle rearing by comparing income of beneficiaries of the project before and after the project. The findings in tables 6 and 7 below show the average daily milk sales per household before and after the project and the number of offspring sold from project animal (s) in 5 years of animal ownership respectively.

Milk sales per house holds

The table 6 below shows the average amount of milk sold, in litres per household per day.

TABLE 6
Average Milk sales per Household per day.

Milk sales in litres	Before the project		After the project	
	Frequency	Percentage	Frequency	Percentage
None	12	13.3	0	0.0
1-5	78	86.7	34	37.8
6-10	0	0.0	48	53.3
11-15	0	0.0	8	8.8
>15	0	0.0	0	0.0

The results in table 6 show that; before the project, majority of households (86.7%) sold between 1-5 litres of milk per day and it is worth noting that the rest (13.3%) did not sell any milk.

After the households acquiring animals from the project and rearing them for sometime, 53.3% of the beneficiary households sold between 6-10 litres of milk per day and 37.8 % sold between 1-5 litres of milk per day while 8.9% sold 11-15 litres of milk. It is important to note that there were no households selling more than 15 litres of milk. This therefore, means that majority of households had surplus milk to sell for additional income.

It is also known that, milk production in Uganda is characterized by a 'low input-low output' approach (Otto et.al, 2002). For most households, livestock is not an important source of cash, but a source of food, a store of wealth and a status symbol. Ugandan dairy stakeholders have been looking for and capitalizing on opportunities to diversify on dairy production so as to increase their returns to land and labour (Otto et.al, 2002).

The beneficiaries of the COULDHP however, sold milk from the cows to support their household income, on top of consuming some for food nutrition

Sale of offspring by beneficiary households

The researcher wanted also to find out about the sale of offspring for additional income by households which had reared the animals for a period of 5 years. Either female or male offspring which had been reared for at least one year were sold. Table 7 below shows the results.

TABLE 7
Sale of Offspring by Beneficiary Households.

Cows sold	Frequency	Percentage
0	24	26.7
1-3	66	73.3
>3	0	0.0

Table 7 above indicates that majority (73.3%) of households sold 1-3 offspring animals for addition income within a period of 5 years of rearing them while 26.7% sold none. It is also worth noting that none of the households sold more than 3 offspring animals.

This indicates that on average, all households sold 2 offspring animals within a period of 5 years

Utilization of income from the dairy enterprise

The researcher investigated the use of income in order to establish the frequency of expenditure on a number of family expenses as shown in Table 8 below.

TABLE 8
Utilization of income from the enterprise by beneficiary households.

Item	Frequency	Percentage
Food items (beans, maize flour)	44	48.9
Medical bill	11	12.2
School requirements	9	10.0
Essential commodities(clothing, utilities	13	14.4
Fuel (paraffin, firewood, charcoal etc.)	5	5.5
Agricultural inputs	4	4.5
Labour	4	4.5

Table 8 above shows that income from the dairy enterprise was used by households to; purchase food items not produced in the household (44%),

paying for medical bills (11%), school requirements 9%), essential commodities (13%), fuel (5%) and labour (8%).

This implies that income from the dairy enterprise was utilized by households to cater for a wide range of household requirements. It is worth noting that majority of households (44%) used income to purchase food items not produced in the household, an indicator of scarcity of major food items at household level in Luweero district. None of the income was re-invested into the project business which comprises sustainability of the project.

Milk production by households

The researcher wanted to find quantity of milk produced by the beneficiary households. Table 9 below shows the quantity of milk produced per household per day.

TABLE 9
Milk Production per Household per day.

Milk production in litres	Frequency	Percentage
1-5	10	11.1
6-10	16	17.8
>10	64	71.1

From table 9 above, majority (71.1%) of the beneficiary households produced more than 10 litres of milk per day and 17.8% of the households produced 6-10 litres of milk while 11.1% of households produced 1-5 litres. The results imply that there was evidence of milk production by all the households.

The national production of milk in Uganda in 2010 was estimated to be 1,377 million litres, representing an increment of 3.0 percent from 2009 to 2010 (UBOS Statistical abstract, 2010). Thus there was evidence on the contribution of the project to the national milk production.

Milk consumption by house holds

The researcher also wanted to conceive the quantity of milk consumed by the households from the project animal and table 10 below shows the results.

TABLE 10
Average milk consumption per household per day.

Milk consumption	Frequency	Percentage
1-3 litres	74	82.2
4-6 litres	16	27.8
>6 litres	0	0.0

According to table 10 above, majority (82.2%) of the households consumed between 1-3 litres of milk per day and 27.8% consumed between 4-6 litres of milk per day. It is worth noting that there were no households consuming more than 6 litres.

This implies that all households were consuming milk in the range of 1-6 litres of milk per day. In Luweero district, an average house hold consists of 6 members (Luweero Statistical Abstract, 2006).

Food production using animal manure

The researcher discovered that households used animal manure to improve fertility of their gardens, resulting into increased crop production. The researcher sought to find out from the respondents on what crops they use the animal manure. The answers are presented in the table below

TABLE 11
Food Production using Animal Manure.

Crops	Frequency	Percentage
Vegetables	67	74.4
Bananas	14	16.6
Coffee	9	10.0
Cassava	0	0.0
Maize	0	0.0
Sweet potatoes	0	0.0

From table 11 above, it can be shown that the food items produced by the households while utilizing manure from their animals include; vegetables (74.4%) and bananas (16.6%). There was no manure used on other crops like cassava, maize, and sweet potatoes.

The plates 1 and 2 below shows cow manure and its use in banana growing.

PLATE 1
Cow manure



PLATE 2

Banana growing using manure.

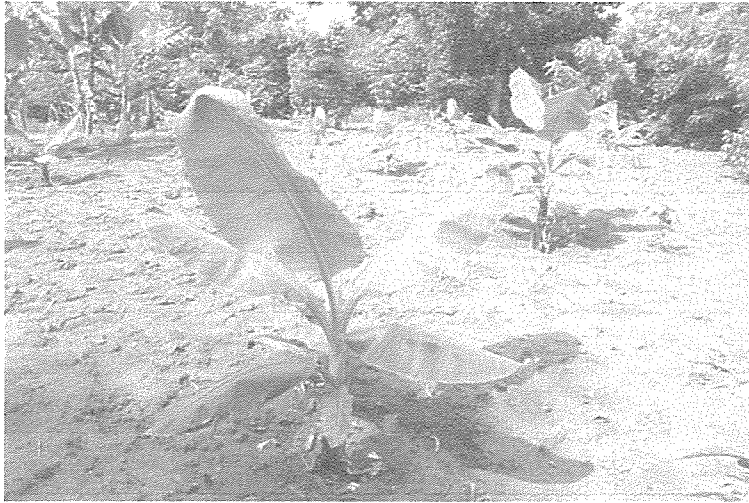


PLATE 3

Zero Grazing Unit.

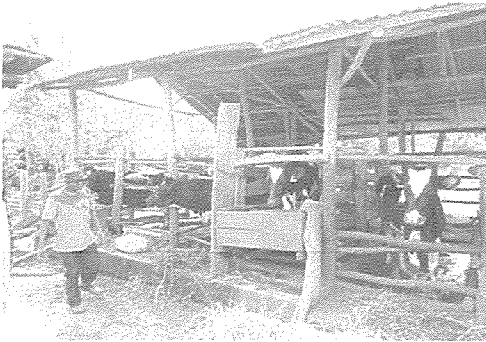


PLATE 4

Vegetable Growing

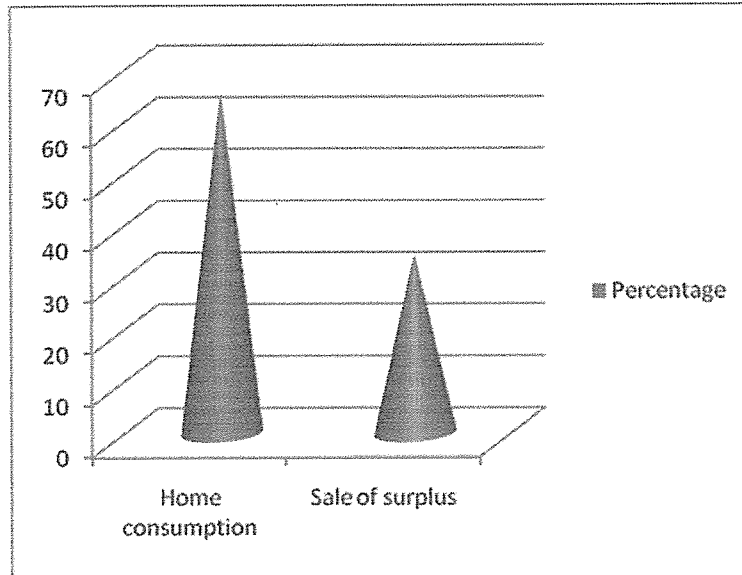


The crops grown near the home were mainly bananas, fruits and vegetables (Plate 2 and 4.above). Crops like sweet potatoes, cassava and maize were grown far from home.

Utilization of food produced by the households

The researcher also sought to find out the utilization of food produced in the household using manure from the animals. The figure 6 below shows the results.

FIGURE 6
Utilization of Food by Households



From figure 6 above, majority (65.6%) of the households utilized food for home consumption and 34.4% for sale of surplus food produced.

CHAPTER FIVE

FINDINGS, CONCLUSIONS, RECOMMENDATIONS

Introduction

Based on the information generated which is presented in form of tables, charts and photographs in chapter four, the researcher analyzed the findings, made conclusions and finally recommendations concerning the stated objectives of the study on income and food production enhancement by Church of Uganda Luweero Diocese heifer Project during the period 1997-2010.

FINDINGS

Majority (76.7%) of beneficiaries were in the age range of 31-45 and this range constitutes a responsible and mature class of people who own land and are well settled in their homes. Therefore, the households could ably manage the dairy enterprise and profitably utilize the benefits from the enterprise like milk and animal manure to improve their income and food security. There was no youth under the age of 30 who benefitted from the project reason being that youth did not have access to and control over land which is a critical factor in ownership of a dairy enterprise. Most of the youth are dependent on their parents and have a low attitude towards agriculture employment.

The project benefited both females and males which was a good strategy, because if both gender are targeted, the success in implementation of the project is assured. Both the husband and wife in the household own the project, therefore their involvement is of paramount importance to the success of the project.

The project had been implemented in Luweero and Nakaseke districts for a period of more than 10 years and majority (60%) of the beneficiaries still owned their animals. The households had properly managed their animals

well and "passed on gift" heifers to other beneficiary households. It is a requirement of every project beneficiary household to donate the first female offspring (heifer) to another household and this keeps the project expanding over the years (HPI, 2009). The process is called "passing on the gift". Many of the animals had later after produced other heifers or bullocks for the beneficiary to boost the numbers of stock.

The study found out however that 40% of households did not keep their animals because they had either sold them off or had died. In most selloff cases, the animals had been sold because of old age and after producing a number of off springs which increased household stock. As a result of the selloff, the households increased their income. There were, however some cases where the animals died due to disease and failure to treat them on time. This was because of lack of nearby veterinary extension services. The researcher was unable to establish the actual percentage of animals which died due to lack of treatment or other causes. This was because, apart from actual loss of the animal due to disease, others were just sold off for cash to meet other demanding needs. Overall, about 40% did not have their animals.

Overall, the project was able to achieve its objective of improving incomes of the households. Majority (71.1%) of households had surplus milk to sell for additional income. The project supplied quality dairy heifers which could produce more milk than the local cattle. In addition, households sold 1-3 offspring animals (73.3%) for additional income.

Income from the dairy enterprise was utilized by households to cater for a wide range of household requirements which included; purchase of food items not produced in the household (44%), paying medical bills (11%), school requirements 9%), purchase of essential commodities (13%), fuel (5%) and labour (8%). It is worth noting that 44% of the households used

the income to purchase food items not produced in the households such as salt, sugar and cooking oil.

The project was also able to achieve its objective of improving food production of the households. Majority (71.1%) of the beneficiary households produced more than 10 litres of milk per day and therefore had enough milk to consume. In addition, households produced vegetables (74.4%) and bananas (16.6%) while utilizing manure from their animals. Nevertheless, there was no manure used on other crops like cassava, maize, and sweet potatoes. Majority (65.6%) of the household's utilized food for home consumption and 34.4% for sale of surplus food produced.

It also was observed that the dairy animals were kept under zero grazing units which were constructed near the homesteads. The crops grown near the home which were seen were bananas, fruits and vegetables while crops like sweet potatoes, cassava and maize were grown far off the home. Manure was applied to only the crops grown around the home because manure is bulky as observed.

CONCLUSIONS

Based on the above findings, the researcher makes the following conclusions:

1. Church of Uganda Luweero Diocese Heifer project achieved its major objective of improving income and food production for beneficiary households, although about 40% of beneficiaries lost their animals due to lack of veterinary services to treat them.
2. Project beneficiaries used the income from the project on house hold consumption expenses but did not plough back any income for expansion and sustainability of the project.
3. For the beneficiaries whose animals remained for a period of 5-10 years and produced offspring, the benefits for the households included not only

additional income from the sales of milk and offspring but also the use of animal manure to increase fertility of their gardens and hence increasing vegetables and banana yields and therefore contributing to food security prospects at household level.

RECOMMENDATIONS

1. To ensure project growth and sustainability at household level, project managers are recommended to train and sensitize the beneficiaries to plough back some of the profits from the sale of milk and off springs into project expansion like buying more dairy cows.
2. To ensure that the animals do not die from preventable causes, the beneficiaries are recommended to seek for veterinary services from both private and government extension staff at districts and sub-counties for sustainability of the project.
3. Project implementers are recommended to emphasise the use of the cow manure on all crops as a means of increasing food availability for better nutrition status for all household members.
4. There is need to study youth involvement in the design, implementation and management of livestock related projects in order to improve their participation in development activities.
5. A further study to learn how CBOs manage and effectively utilise resources reimbursed to them by Development Partners.

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APPENDICES
APPENDIX I
RESEARCH INSTRUMENT

QUESTIONNAIRE ON THE STUDY ON INCOME AND FOOD PRODUCTION ENHANCEMENT BY LUWERO DIOECES HEIFER PROJECT.

Dear respondent, I'm **Namubiru Sarah** pursuing a Masters Degree in Project Planning and Management at **Kampala International University**. I'm conducting a study to establish the impact of COU Luweero Diocese Heifer Project intervention on the food security and income status of families who benefited during implementation of the period of 14 years between 1997 and 2010 in Luweero and Nakaseke Districts. Since the inception of the project beneficiary families have been trained in integrated dairy farming, given dairy heifer and related resources or inputs and also operated the passing on the gift system. The study is geared towards finding out the project performance in improving household food security and income of beneficiary households.

Please, kindly respond to the questions in this questionnaire with a free mind since the information you give will be treated with utmost confidentiality. Be assured that your name shall not appear anywhere in the study without your permission.

A. RESPONDENT BIO-DATA:

District:

Sub County:

Parish:

Sex of respondent: Female ☐ Male ☐

Age of respondent: 18-30 years ☐ 31-45 years ☐ 46-60 years ☐

Years in the project:.....

B. INCOME SECURITY AND RESOURCES:**i) Land ownership:**

- A) 1-5 acres B) 6-10 acres C) 10-20 acres D)
>20 acres

ii) Other resources:

Livestock Resources (Numbers)	Before the project			Current status		
	Local	Cross	Exotic	Local	Cross	Exotic
Cattle						
Goats						
Sheep						
Chicken						
Pigs						
Others (specify)						

iii) Farm structures:

Type of structure and number	Before the project			Current status		
	Perm anent	Semi-	Temp- orary	Perman ent	Semi-	Temp orary
Residential						
Kitchen						
Cow shed						
Poultry house						
Pig sty						
Granary						
Boys quarters						
Store						
Latrine						
Others (specify)						

iv) Sources of household income:

Income source	Before the project			Current status		
	Daily	Monthly	Annual	Daily	Monthly	Annual
Crop enterprises						
Livestock enterprises						
Petty jobs						
Others (specify)						

V) Income from project animal (s):

Item	Before the project		Current status	
	Aver. Daily prod.	Aver daily income	Aver. Daily prod.	Aver daily income
Milk				
Offspring	Number sold before project in 5 yrs	Income received before project from off spring in 5yrs	Number sold after project in 5 yrs	Income received from off spring after project.
offspring				

VI) Family utilization of income: To what use does your family put the income?

Expense item	Tick (✓)	Remarks
Food items (meat, bread, eggs etc.)		
Medical bills		
School requirements		
Essential commodities		
Fuel (paraffin, firewood, charcoal etc.)		
Agricultural inputs		
Labour		
Others (specify)		

B) FOOD SECURITY

i) Crop production and utilization of foodstuff

Type of crop	Acreage before the project				Current status			Utilization	
	<1 acre	1-2 acres	>2 acres	Yield per acre	< 1 acre	1-2 acres	>2 acres	Home Consumption	For Sale
Bananas									
Pulses									
Cereals									
Vegetables									
Tubers									
Others									

ii) Milk production and utilization

What was the increase in milk production in your family? 1-5lts ☐

6-10lts ☐ >10lts ☐

How was the milk utilized? Consumption ☐ Selling ☐ Both
Others ☐

Milk utilization in litres per day: Consumption.....; Sellings.....;
Others.....

- C)** Mention the benefits you have got from participating in the COU
Luweero Diocese Heifer Project: a) Income improvement
b) Nutritional benefits c) Social benefits

- D)** In case of designing similar projects in the area what are the key
issues you would recommend to be addressed by the designers for
successful implementation.

a).....
b).....
c).....
d).....

THANK YOU FOR YOUR TIME

APPENDIX II

INTERVIEW GUIDE

Introduction

This is to introduce Ms Namubiru Sarah a student of Project Planning and Management at Kampala International University. The student is carrying out a research on income and food production enhancement by Luweero Diocese Heifer Project status of beneficiaries between 1997 and 2010 in the district of Luwero and Nakaseke.

Kindly accord her all the assistance to enable her collect the right data.

Bio-data identification:

- 1-District name : Luwero ☐ Nakaseke ☐
- 2- Sub County: Luwero ☐ Bamunanika ☐ Kasangombe ☐ Kikamulo ☐
Katikamu
- 3 How many beneficiaries of the project are in your location?.....
- 4-For how long has the project been in the area?.....
- 5 What are the benefits individuals have got from the project since its inception?
Please mention as many as you know.
- 6- What are the issues to be considered in case of inception of similar projects?
- 7 Are there any setbacks faced by the project?

APPENDIX III

RESEARCHER'S CURRICULUM VITAE

Personal data

Name	: Namubiru Sarah
Date of birth	: 10 th , April 1964
Mobile contact	: 0772-862279
Fathers' name	: Kizito Pius (deceased)
Mothers' name	: Bazitta Asinansi
Place of birth	: Kawoomya LC1
	: Bukeeka parish
	: Kangulumira Sub County
	: Kayunga district
Present location	: Luumu zone
	: Luwero Central Ward
	: Luwero District
Tribe	: Ganda
Nationality	: Ugandan
Employer	: Luwero District Local Government
Profession	: Agriculturalist
Post held	: Senior Agricultural Officer

EDUCATION BACKGROUND

YEAR	INSTITUTION	AWARD
2006	Makerere University Kampala	BSC- Agriculture Extension Education
1996	Bukalasa Agricultural College	Diploma in Agriculture
1986	Bukalasa Agricultural College	Certificate in Agriculture
1984	Tororo Girls Sec. School	Uganda Advanced Cert. of Education.
1981	Wanyange Girls' S. School	Uganda Ordinary Cert. of Education

WORKING EXPERIENCE

Year	Institution	Post held
2006-to date	Luwero Dist. Local Government	Senior Agricultural Officer
2002-2005	Makerere university Kampala	In Service training
1996-2002	Katikamu Sub County	Assistant Agricultural Officer
1994-1996	Bukalasa Agricultural College	In Service training
1992-1994	Luwero Sub County	Agriculture Assistant
1987-1991	Naluvule Children Centre	Assistant Farm Manager

REFRESHER COURSES ATTENDED

DATE	COURSE
2010	Climate Change Impacts and Adaptation
2008	Awareness Handling and Operation of Pedestrian Tractors
2006	Early Warning for Food Security and Disaster Management
2003	Food and Nutrition Training for Extension Staff
2002	Coffee Wilt Disease Management
1998	Gender Baseline Survey Techniques
1997	Environmental Protection
1996	Coffee improvement and Management practices
1995	Resource Identification and Mobilization
1994	Animal Draught Power Utilization

COMPETENCIES POSSESSED

- Ability to work diligently with minimum supervision.
- The love to work in the rural setting.

MEMBERSHIP

- Luwero District NAADS Core Team
- Luwero District orphans and Vulnerable Supervisory Committee
- Luwero District Food Security Committee
- Luwero District Disaster Preparedness Committee

APPENDIX IV
SAMPLE SIZE SELECTION CHART

Recommended sample sizes for two different precision levels

Source: Isaac and Michael, 1981; Smith, MF, 1983

Population size	Sample Size		Population size	Sample Size	
	+5%	10%		5%	10%
10	10		275	163	74
15	14		300	172	76
20	19		325	180	77
25	24		350	187	78
30	28		375	194	80
35	32		400	201	81
40	36		425	207	82
45	40		450	212	82
50	44		475	218	83
55	48		500	222	83
60	52		1000	286	91
65	56		2000	333	95
70	59		3000	353	97
75	63		4000	364	98
80	66		5000	370	98
85	70		6000	375	98
90	73		7000	378	99
95	76		8000	381	99
100	81	51	9000	383	99
125	96	56	10000	385	99
150	110	61	15000	390	99
175	122	64	20000	392	100
200	134	67	25000	394	100
225	144	70	50000	397	100
250	154	72	100000	398	100



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