AN ECONOMIC ANALYSIS OF THE LEASING SYSTEM TO DEVELOP DAIRY GOAT PRODUCTION: A CASE STUDY AT GA-MAMPA, MAFEFE RURAL COMMUNITY IN LIMPOPO PROVINCE OF SOUTH AFRICA

BY

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Dissertation

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DECLARATION

I, Makgomo Vivian Mosoma, declare that the dissertation hereby submitted to the University of Limpopo for the degree of Master of Agricultural Management in Agricultural Economics has not previously been submitted by me for a degree at this or any other university; that it is my own work in design and in execution, and that all material contained therein has been duly acknowledged.

Signature _____

Date _____

DEDICATION

This work is dedicated to my late father, Manasseh Maakutume Mosoma, who passed away 17 years ago. I am sorry I did not have him by the time I needed him the most, may his soul rest in peace. My mother, Maakate Lucy Mosoma, my son, Nassie "Ntona", who was born during the course of my studies, my sisters, Evelyn and Kgaogelo, my only brother, Khomotso "Nkutu", and also to Vallie and Fenyi. I would like to say thank you for being my role models and giving me courage. Thank you for giving all you can for this previous achievement.

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Ephesians 5:20

"Always give thanks to God the Father for everything. Give Him thanks in the name of our Lord Jesus Christ."

ABSTRACT

The main objective of the study was to analyze the economic viability and sustainability of the leasing system in the development of dairy goat's keepers group in Ga-Mampa, Mafefe rural community. Mafefe is one of the rural communities where dairy goat keeping is given little or no care by the dairy goat keepers. Through an action research process implemented within the community by the Center for Rural Community Empowerment (CRCE/University of Limpopo: Turfloop Campus), community members became interested in developing dairy goat keeping, which was very dubious to the community members as it was their first time to hear about goats bred for milk production. In Limpopo Province, goats are the most common livestock among communal farmers and yet they do not make a significant contribution to the economy of the place, let alone improve income of the households who keep dairy goats.

The purpose of the study, therefore, was to find ways to transform the current subsistence system of producing indigenous goats by households in Ga-Mampa Mafefe (Capricorn District (CD)) in the Limpopo Province of South Africa into a viable system of producing, processing and marketing both dairy goats and their by-products through formal markets. The study attempts to find out as to how a commodity group manages capital through a leasing system to sustainably insure that its members can access a technical innovation: dairy goat keeping. This study also looks at how leasing contributes to the development of the dairy goat project, the community and the development of individual members of the project.

The Net Present Value (NPV) and Benefit Cost Ratio (BCR) criteria were used to evaluate the economic viability of the leasing system towards the development of dairy goats. The results indicate that the NPV in this study is greater than zero, therefore the project is considered to be economically viable and sustainable, and also the BCR is greater than one indicating that the project is still profitable and hence acceptable. According to the findings from the analytical techniques, production of dairy goats through the leasing system would be profitable to dairy goat keepers.

A sensitivity analysis to changes in benefits and costs of inputs was conducted. This found the above project proposal to be viable, even when benefits are reduced by 20%. The project proposal was still viable when the cost of inputs was inflated by 20%. In both cases, the benefit cost ratio is greater than one. Also the combined effect of reducing the benefit by 20% and inflating cots by 20% would result in positive Net Present Value (NPV). Results from a survey carried out further show the possibility and viability of producing satisfactory levels of milk from dairy goats in Limpopo Province.

TABLE OF CONTENTS

CONTENTS **PAGE**

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS/ACRONYMS

AFRC	Agriculture and Food Research Council
ARC	Agricultural Research Council
BCR	Benefit Cost Ratio
CD	Capricorn District
CRCE	Centre for Rural Community Empowerment
DF	Discount Factor
IAK	Indigenously Acquired knowledge
ILCA	International Livestock Centre for Africa
LDA	Limpopo Department of Agriculture
LDGK	Lafata Dairy Goat keepers
MFI	Microfinance Institution
NPV	Net Present Value
NRC	National Research Council
SAES	School of Agricultural and Environmental Science
UAEL	United Association of Equipment Leasing
UL	University of Limpopo

CHAPTER 1
INTRODUCTION

1.1 Background of the study

Unemployment is one of the serious socio-economic problems facing South African society today. Limpopo Province is one of South Africa's poorest provinces with high unemployment, low income and a strong rural background. The economic situation is exacerbated by lack of opportunities for self employment and productive investment in rural areas (Lasley *et al.,* 1993). The low levels of household income also imply that there are generally low levels of disposable income within the community and thus low levels of business investments. Nonetheless, because of the low potential for crop production in South Africa, animal rearing is a key income generator in most rural areas and provides revenue to buy staple food such as maize, wheat and vegetables, as well as other supplements needed for a balanced diet. Furthermore, the poorest cannot even rear animals and yet manage to farm on their available plots: as a matter of fact, low agricultural production is rather a cause of a low possibility of investing into animal rearing.

The main economic constraint prevailing in rural communities is the lack of viable economic base. Related constraints include lack of capital for economic investment, lack of skills, low levels of education, etc (Lasley *et al.,* 1993). Rural people try to improve their livelihood system and yet they do not generate sufficient income. Despite low levels of family income within the province, efforts have been made by individuals to augment their financial remuneration and particularly to access capital through innovative financial means. An innovation is a process by which people, in a given locality, discover or develop new and better ways of doing things - using the locally available resources and on their own initiative, without pressure or direct support from formal research or development agents (Hall, 2005). Rural people mostly rely on Indigenously Acquired Knowledge (IAK) to manage their domestic animals such as cattle, sheep and goats. IAK refers to the knowledge that grows within a social group, based on learning from experience over generations, but also including what was gained at some time from other sources but has been completely internalized within the local ways of thinking and doing (Reig & Waters-Bayer, 2001).

In rural areas, dairy goats are reared for their milk and associated dairy products as well as for meat. Centre for Rural Community Empowerment (CRCE) tested this financial innovation in Ga-Mampa, Mafefe rural community, to understand how it may address the local environment of lack of capital that prevents farmers to invest in technical innovation as dairy goat keeping.

Innovations, technical and financial efforts aim at ensuring that rural people can derive a benefit in an economically viable way to sustain them. CRCE supported the efforts of the Lafata Dairy Goat Keepers (LDGK) group at Mafefe to link the technical innovation – introduction of dairy goat keeping – to a financial innovation – a leasing system to

acquire the dairy goat. LDGK is the name of the group formed by farmers who keep dairy goats at Ga-Mampa rural community in Mafefe.

The research and development agenda grows out of the ways in which rural people are already trying to improve their livelihood systems. It builds on existing ideas and motivations. CRCE, who tested the financial innovation and its processes, recognizes farmers as pro-active and as creative sources of ideas. At the same time, farmers recognize their potentialities and are encouraged to innovate even more. Van Veldhuizen *et al*., (1997) are of the opinion that combining local and external knowledge, with the aim of increasing capacity within the innovation system, adapts quickly to changing conditions and thus to improving livelihoods.

Leasing, a new tool for microfinance institutions, is one way to finance the introduction of dairy goats into a rural area. Through this approach, a dairy goat keepers group was formed to gradually take over the responsibility of leasing dairy goats to its individual members on the conditions that the lease is repaid in the form of monthly instalments that can be, theoretically, easily obtained through the continuous sale of milk, completed by the eventual sale of the animal's offspring(s). The lease agreement is established between the "animal owner", the lessor, in this study, the dairy goat owners group and the farmer that wants to lease the animal, and the lessee, in this study, the dairy goat keeper. Through leasing, the lessee or client acquires the right to use the animal for a regular fee over time. The client agrees to make payments to the lessor/group over the life of the agreement and then the animal becomes his/her property. If the lessee defaults payments, the animal is returned to the group, or a lease extension can be negotiated, when the original agreement expires.

In Mafefe, the leasing system is managed by the LDGK group who acts as the lessor. The LDGK received training in goat husbandry and forage management by CRCE, and was encouraged to save money in a group revolving fund. The group adapted their own rules to manage the leasing programme. Group members who wish to acquire dairy goats through a leasing agreement start with a down payment when the contract is signed at the delivery of the animal. The LDG keepers group at Ga-Mampa has developed a leasing system that is totally controlled by the beneficiaries. LDGK group is organized as a commodity group without external influence in making decision about their programme. Each member runs its individual dairy goat project. The project was started by the joint effort of CRCE-UL together with the members of the community in Mafefe (with goats and/or those with an interest in business of keeping dairy goats) supporting them to become actively involved in goat improvement programmes.

Leasing is a contractual arrangement in which one party uses an asset owned by another party in exchange for specified periodic payments (Westley, 2003). In this study, leasing is defined as a method of paying for the use of an animal over a specified period of time, and once the period is over; the ownership of the animal is transferred to the lessee (client). This method is a way to obtain equipment through an adapted financial innovation. Leasing mechanisms can become an important tool for microfinance institutions (MFIs). MFI contextually refers to any financial institution, regulated or not,

that offers financial services-credit, savings, advices to micro-enterprises such as small scale farmers. In a leasing arrangement, the MFI (lessor) buys the equipment specified by the client (lessee) and permits the client to use it under a lease contract (UAEL, 1995).

Lease fees are composed of two parts, namely, a depreciation charge and a finance charge. The depreciation charge of each monthly payment compensates the lessor for the portion of the property's value that is lost during the leasing period. The finance charge is interest on the money the lease company has tied up in the property while being used; of which part payment are done monthly. The lessee only pays for what he/she uses in the form of a leasing fee and no extra charges are demanded from the lessee, and if extra profits are made by the lessee, they can be reinvested in to the project. Being involved in a leasing enterprise calls for discipline and prudence in the daily management of the goats and related financial undertakings. Dairy goats are valued at R600 each, and a R200 down payment is due at the time of the collection of the goat by the lessee. The lessee further pays a R50 monthly leasing fee during the eight following months.

The Lafata Dairy Goat Keepers group find the leasing programme rewarding because it facilitates payments and encourages eventual ownership of any leased goat. Some of the benefits of being involved in this type of leasing system include: small amounts for down payment, low monthly payments, and no other extra charges for the set leasing period. In the implementation of this leasing system in Mafefe area of Ga-Mampa, dairy goats are reared, which produce high quality milk and associated dairy goats. By selling milk on a daily basis, the lessee can easily repay his monthly fee.

1.2 Problem Statement and Justification

Small scale farmers in rural communities do not have enough financial means to invest into different agricultural innovations initiated either by the government or other organizations for developmental purposes. In addition, in rural communities, small-scale farmers do not have any access to urban-based microfinance institutions to support their on-going activities. They cannot access credit facilities to finance their different projects because of the unavailability of formal credit institutions in rural environments where they reside and carry out their agricultural activities. When they get some inputs on credit to support their projects, they hardly feel a sense of ownership and hardly repay their due. Because of long and costly procedures to collect due credit by the lenders, lenders tend to avoid to get involved in such schemes. A vicious circle is reinforced: rural communities delay their reimbursement when they obtain a loan due to reasons linked to their remoteness, lenders find it too costly to follow up, but do not lend anymore in rural areas and it becomes more difficult for rural communities to finance capital.

Although CRCE initiated this leasing system in 2004, no known studies have so far been carried out to substantiate the economic sustainability of the project to the members of the LDGK group. This study thus focuses on the leasing system to acquire dairy goats designed to benefit the dairy goat keepers group in Mafefe rural community. It also attempts to verify whether the system is sustainable within the group and whether it

contributes to improving the economical status of the rural community status. The study further explores the advantages and disadvantages of leasing as an alternative means to finance equipment purchases by micro-enterprises, and examines best practices in equipment leasing. It is anticipated that, from the findings of this project, the overall community of Ga-Mampa in Mafefe area, and the neighbouring village will be encouraged to invest in keeping dairy goats as an affordable way to both improve their income and increase their capital.

This study attempts to find out how a commodity group can manage a capital through a leasing system to sustainably insure that its members can access a technical innovation: dairy goat keeping. The study also looks at how the leasing programme contributes to the development of the dairy goat project, the community and the development of individual members of the group. This study is important to add to the body of knowledge and contributes significantly to develop sustainable leasing system as a way to complement uneasy credit facilities and also make microfinance available to all community by providing not just business capital but also skills, knowledge and motivation. In the case of a credit, the creditor provides money to the debtor who purchases a good; this good remains the property of the debtor, whether or not she/he repays the loan. In case of default payment, the procedure is quite complex for the creditor to get paid. In the case of a lease, the lessor provides a good that can be purchased in agreement with the lessee, but such remains the lessor's property until the leasing fees are fully paid; in case of default payment, the lessor just takes her/his good back from the lessee without any other external procedure or part.

A leasing contract is used as a simple and flexible financing solution to increase productivity and generate profit. The vision of the project is to be the leading project of dairy goat producers in Limpopo. The mission was to encourage the overall community of Ga-Mampa and the neighbouring village to produce milk from dairy goat keeping. To achieve this, the researcher required information about the farmers' current practices, and knowledge and understanding of the leasing system as a financial innovation to adopt improved technologies for different agricultural activities in rural areas. Moreover, no concrete research has been conducted regarding the economic viability and sustainability of this particular leasing system. Therefore, this study is believed to fill the various gaps mentioned earlier.

1.3 Aim of the Study

The aim of the study is to analyze the economic viability and sustainability of the leasing system towards the development of dairy goat's keepers group in Ga-Mampa, Mafefe rural community.

1.4 Objectives of the Study

i. To determine the economic viability and sustainability of the leasing system by dairy goat keepers in Mafefe.

ii. To explore possibilities for expansion of goat production under the leasing system in Mafefe.

1.5 Hypotheses of the Study

i. Leasing system method by dairy goat's keepers in rural community of Mafefe is economically viable and sustainable.
ii. The financial returns from the leasing system allow the expansion of the dairy goat project in a sustainable way.

1.6 Organization of the Thesis

This study comprises six chapters. Chapter one outlines the introduction and background of the study, justification and objectives of the study. Chapter two contains literature review of the study. Chapter three details the methodology used for the study. It gives the various tools used for the analysis and the results of the analysis. Chapter four gives a summary of dairy goat flock size projections for five years, which is assumed to be the average life of the project. Chapter five gives the results and discussion of the study, and also describes the socio-economic status of the households in the study area. Chapter six discusses summary, conclusions and recommendations.

CHAPTER 2
LITERATURE REVIEW

2.1 Background of Goats Production

Goats have helped people to survive and thrive for many generations. The goat (*Capra hircus*) is thought to have been the first animal to have been domesticated for economic purposes. Goats are kept in many different systems of production in the tropical world. Different ways of feeding, breeding, and using goats have evolved in response to factors such as climate, needs of the owner, economic environment, and level of technology available (Haenlein, 1996). They may be kept in large flocks, and may, or may not, be mixed with sheep and other species. Goats are kept for meat, milk and manure, cash or self consumption, as well as fulfilling various traditional cultural obligations. According to Call (1981), goats are valued for their ability to survive periods of drought better than cattle and sheep. Goats are considered important and are ranked second to other animals. This is so because goats are hardy and can survive difficult periods. Goats are said to be easy to keep in comparison to other livestock species (Sebei *et al.*, 2004).

2.2 Dairy Goats

Dairy goats are much smaller than cows; cost much less to house and feed; and give family-sized amounts of milk daily. The Lafata Dairy Goat Project is used as a way of channelling assistance to the poorest in Mafefe community. It is hoped that the beneficiaries will, for instance, increase their incomes, or milk supply – but, in addition, that their status in society will be improved. Dairy goats are a valuable option in improving the household cash flow of rural people in Ga-Mampa Mafefe village and improve the issue of food security. Apart from cash income, goats could also be a valuable source of milk and meat for rural people (Delgado *et al.*, 1999). Dairy goats are not only a source of high quality protein for the family, but also provide small cash income. They have the potential for improving the diet of the rural population and also of supplementing the producer's income (Roets, 1998). Production generates income (for all the various factors of production) and part of all of this income is then spend to buy the veterinary inputs and supplementary feeds.

2.3 The Importance of Keeping Dairy Goats

The main purpose for keeping dairy goats in the rural areas is to promote community development, food security, poverty reduction and crime prevention (Peacock, 1996). The reasons for keeping dairy goats is because of their low purchase price as compared to dairy cattle; goat produce at an early age; have more young kids than cattle; they also produce manageable amounts of milk for sale or family consumption; they have an ability to survive on low-quality foods or in difficult conditions on relatively small amounts of food; and they are more readily available. Dairy goats are seen as suitable animals to assist families to break the cycle of poverty. They are easy to handle and manage, especially by women and children, and are also able to survive on a wide range of forage. Goats play an important socio-economic role in the rural areas of Limpopo

Province in South Africa. They require low inputs for a moderate level of production, reach maturity early and are profitable to keep (Devendra & Burns, 1980).

2.4 Making More Money (Profit) with Dairy Goats in Rural Areas

The Lafata Dairy Goat Keepers (LDGK) group in Mafefe gets cash from selling dairy goat products (viz., milk and meat), which are easy to sell to the rural community. Rural community also get a better price for goat milk, which is R6.00 per litre of milk, as compared to R16 for cow milk in the village retail shop, and a better price for male goat which costs R600.00, as compared to R800.00 for ordinary traditional goat. The LDGK group get kids every year. The kids can be single, twins or triplets and can be sold when ready. Due to the size of the farms, it is a good way to earn money and feed the family. Goat keeping is important for people who do not have a lot of money (Peacock, 1996). Goats produce very good manure and their droppings are used as manure for organic farming to improve crop yields. Farmers can cover domestic expenses using the income from their sale of milk, meat or manure to the community.

2.5 The Role of Dairy Goats in Promoting Food Security

Food security means access by all people to enough food for a healthy and active life. Goats are deeply embedded in almost every African culture and are true “friends” to the rural poor in particular. They can therefore play a vital role in supporting food security of a household. Goat is often the only asset possessed by a poor household. In times of trouble, such as crop failure or family illness, goats can be sold and food or medicine could be purchased. In 1998, approximately 30% of the South African population was classified as ultra-poor (i.e., those who do not have sufficient food) and of those, approximately 80% were blacks living in rural areas. It is well established that goats can survive and indeed flourish in areas where cattle and sheep struggle to survive. As previously discussed, goats are a viable option in improving the household cash flow of rural people and assisting in resolving the issue of food security (Kooster, 1986).

Farming with goats could contribute to both the upliftment of impoverished rural communities and the improvement of those primary and secondary industries that rely on the goat farming enterprises (ILCA, 1990). In the rural, economically deprived regions, goats are a ready source of cash income, food and social security. It is much easier for small scale farmers, with no land or only small land sizes, to farm with goats than with cattle, because ten goats could be kept instead of one cattle.

2.6 Dairy Goat Management Systems

2.6.1 Feeding strategies and housing

Goats normally rely on browsing and grazing (McDonald *et al.,* 1988). They thrive on selecting the nutritious parts of the plants. A goat does not like to graze on the ground like a sheep or cow. Goats must be fed with clean, fresh and dry fodder such as grasses

and legumes, tree leaves and fresh kitchen remains. Goats always need fresh water to drink at any time. Good feeding will give strength to the animals (NRC, 1981).
The dairy goat gives as much as it is given the right food. There are many feeds the dairy goat likes. Here are some good feeds that can be used according to AFRC, 1993.

- *Sweet potato vines* (useful in feeding kids whose mothers die early in their life)
- *Napier* (it is easy for the goats to eat and digest)
- *Fodder trees and legumes* (these have lots of protein and you need only feed a little at a time - these are, for example, leuceana, calliandra, sesbania and desmodium
- *Maize* (**w**hile maize is grown for farmer's food, there is a lot of fodder that can be used for feeding the goat, which will not stop the farmer getting a good maize yield)

If a goat is not correctly fed, it stops producing milk and therefore the expected income to pay back the lease fee will be tremendously reduced and put the lessee in a difficult financial situation.

Shedding for dairy goats does not have to be elaborated, but it must satisfy the health and comfort of the animals. A good house means healthy goats and will make keeping and feeding goats easier. If kept in a good goat shed, animals face less chance to get sick and their production of milk will rise up. A farmer does not need a lot of money to build a shed, as it can be made of local materials such as wood or planks for the floor, nails and iron sheets or grass for thatching. The goat shed must be kept clean, dry and ventilated all the time. The important thing here is to ensure that the leased animal is not going to die because of poor shedding conditions, which would ruin the contract for both parties.

2.6.2 Health and water

The common diseases that affect goats vary from place to place. The most common problem with goats is internal and external parasites (Peacock, 1996). But drenching is rarely practised in rural areas. In Mafefe, internal parasites, ticks and heart water cause major health problems in dairy goats. In the village, households do not use expensive drugs to keep their goats healthy as most cannot afford them. Most households experience tick problems and use disinfectants, such as Jeyes fluid, engine oil, paraffin and Methylated spirit. However, some households remove ticks by hand, through using thorns or needles. The LDGK group gets assistance from their animal health technicians and follows a vaccination programme. Very few households use conventional methods, most of them use traditional medicines like leaves, crushed roots and stems of local trees such as *Mogalakane* for diarrhea, *Leutlwautlwane* for eye infections and *Sebale* leaves for liver problems. All these traditional medicines are also used to cure human diseases. Most diseases can be controlled through correct feeding, housing or kraal management, vaccination, dosing and dipping. Unfortunately enough, communal dip tanks are unusable due to lack of maintenance and disrupted water supply systems.

Water is vital for life. The evaporation of water is also used by the goats as a cooling method. Water evaporated from the skin, lungs, nostrils, and mouth helps to keep down body temperature. A goat obtains water form three sources, namely: drinking water, water in food, and water released as a by-product of certain metabolic processes (Peacock, 1996).

2.6.3 Milking, processing of by-product and marketing

Although goat meat and milk can produce a wide range of products, most rural households are not knowledgeable about them. Most households with goats do not use goat manure in crops as it carries too many weed seeds. Goats are presently marketed as live animals and no slaughtering is done at official abattoirs. Processing milk and meat is one way to make use of surplus production and this can increase a household's income (Dozet, 1973).

Marketing is a complex activity that starts with a farmer's decision on how to dispose of his/her produce to the activities of the intermediaries. Developing marketing strategies is based on product pricing, distribution and market information. Many factors determine the quantity and the quality of the product. Of great importance could be the prices received at the various levels of the marketing process. At the farm level, the input and output prices will be the determining factors, whereas at the intermediary level determining factors would be market conduct, structure and performance; and at the consumer level determining factors would include product price, income and substitutes (Roets, 1998).

In Capricorn District of Limpopo, there has not been any headway as far as goat marketing is concerned. Almost all goats are marketed as live animals with little value being attached to other by-products. Lack of information, appropriate infrastructure as abattoirs, roads and marketing points were cited by rural community as some of the constraints to develop markets. Peacock (1996) indicated that currently goats are traded informally, i.e., out-of-hand sales, the buyers in the village buy directly from the farming households whereby no commission gets charged.

The main buyers of goats in the region are believed to be the rural households. The live goat market is characterized by peak demand periods during the Easter, December and the winter months (June-July) when most of the initiation ceremonies take place. It was seen that dairy goats are not marketed through any formal market channel in Limpopo Province. Goat meat is not found in any butchery or in the shelves of any supermarkets. Goats are sold informally between the households within the village, and once in a while people from nearby villages purchase them for slaughtering during festivals and ceremonies.

2.7 Leasing: A New Option for Microfinance Institutions

2.7.1 Introduction

Leasing is a dynamic type of business financing that is well suited to the microfinance industry. Financing leasing is a well-known source of financing for investments in equipment and machinery. Many Microfinance Institutions (MFIs) are adding this new product to their financial services menu and using it to raise funds to finance capital equipment purchases. Leasing can be structured as a transaction that also reaps profits for the leasing company. MFIs can reduce transaction costs by accurately projecting cash flow during the lease period, with the assumption that micro-enterprises will meet lease payments (Jansson, 2003).

2.7.2 Microfinance services

Microfinance is the supply of basic financial services to poor and low-income households and their micro-enterprises. Providing financial services for small-scale enterprises is a powerful tool for poverty reduction, enabling poorer households to build assets, increase incomes and reduce their vulnerability to economic stress Microfinance helps rural people to plan and manage consumption and investments, cope with risks and improve their living conditions, health and education by smoothing household cash flow and increasing disposable family income. To help reduce poverty effectively in the long term, microfinance services must be sustainable and have a wide outreach, and provide services and products that address and suit the needs of poor people and their enterprises (Dynan *et al.,* 2006).

2.7.3 The concepts of financial innovation

Financial innovation refers both to technological advances which facilitate access to information, trading and means of payment, and to the emergence of new financial instruments and services, new forms of organizations and more developed and complete financial markets (Schriender & Heidhius, 1995). To be successful, financial innovation must either reduce costs and risks or provide an improved service that meets the particular needs of financial system participants. Financial innovation enhances sustainability of institutions and outreach to the poor (UAEL, 1995).

The innovation system is a set of institutions that jointly and individually contribute to the development and diffusion of technologies and provide the framework with which governments form and implement policies to influence the innovation process. Innovation is not only the production of knowledge, but also making this knowledge available, and enabling its effective use so that it creates wealth and social well-being by adding value to existing knowledge, resources and skills. As such, it is a system of interconnected institutions to create, store and transfer knowledge and skills, which define new technologies of economic benefits.

2.7.4 A short history of leasing

Leasing is not a new concept; it follows the basic premise that business profits arise from equipment use, not equipment ownership. Thousands of businesses that have innovative ideas but are short on cash are using leasing as a simple and flexible financing solution to increase productivity and generate profits (UAEL, 1995). Leasing is a method of paying for the use of a good or animal over a specified period of time. Once the period is over, the ownership of the good or animal is transferred to the lessee. With a lease, the leasing company gains asset ownership, takes depreciation benefits, and may pass the benefits along to the client through lower rental payments.

A lease requires a small or no down payment and finances only the equipment's value. The value is expected to be depleted over the lease term. The client usually has an option to buy the equipment for its remaining value at lease end. In a leasing arrangement, one party uses an asset owned by another party in exchange for specified periodic payments. The lessee uses the asset and pays a rental to the lessor, who owns it (Bass & Henderson, 2000).

According to Meyer (1998), agriculture has the potential to contribute significantly to economic development and transformation through stimulation of income and employment. The expansion of rural incomes through dairy goat production creates for inputs, consumer goods and services. This method of leasing to enhance the development of dairy goat can be sustainable, as it is socially and culturally accepted, as well as economically and financially sound.

2.7.5 Financial leases

A lease that is used to effectively finance the purchase of assets is commonly referred to as a "financial" (or "financing" or "finance") lease. The distinguishing characteristics of financial leases are that (1) the duration of the lease generally coincides with the functional or economic life of the property, (2) the lease may not be cancelled, and (3) the lessee is responsible for maintaining the property. Frequently, a financial lease will be structured so that the lessee's only practical choice at the end of the lease is to purchase the asset. Perhaps the lease gives the lessor the right to compel the lessee to purchase the asset or provides the lessee the option to purchase the property for nominal price (Gallardo, 1997).

2.7.6 The basic principles of a lease agreement

According to UAEL (1995), a lease is a contractual arrangement by which the owner of property (the "lessor") allows another person (the "lessee") to use the property for a stated period of time in exchange of cash payments or other compensation. Leases are arrangements for longer terms (a year or more). Through leasing, the client acquires the right to use the equipment for a fee over time. The client agrees to make payments to the leasing group or company over the life of the agreement and can purchase the equipment, return it to the lessor, or negotiate a lease extension, when the original agreement expires.

The leasing company remains the equipment owner. The client acquires the right of temporary possession and use. The client must pay the lease payments when the lease is signed and the client obtains possession of the equipment; subsequent payments are usually made at periodic intervals. Often the lease cannot be cancelled, and if cancelled, a substantial penalty may be imposed. When the lease period ends, the client has the option to purchase the equipment, renew the lease, or return the equipment to the lessor (Gallardo, 1997).

2.7.7 A leasing contract

The introduction of the leasing system to LDG project in Mafefe was based on the fact that interested farmers will accept to be bound by an agreement to pay a monthly instalment to the group which oversees the operation of the project. A leasing contract is one way to finance the introduction of dairy goats (Havers, 1999). About 18 members who want a dairy goat has signed the leasing contract and registered as members of the Lafata Dairy Goat Keeper's project. After registration and acceptance of the membership, the membership will be documented in the Lafata Dairy Goat files. Group members, who wish to acquire dairy goats through a leasing agreement, start with small amounts for down payment when the contract is signed at the delivery of the animal. The important things in this leasing system are to encourage the dairy goat keepers to milk the animals so as to have a regular income to pay the lease and to encourage the group to disseminate animals to other members.

2.7.8 Repayment, terms and conditions with leasing

The term of an equipment lease should be set by taking advantage of shorter-term operations. The advantages of a shorter term are that it reduces the risk of default, and lessens the MFI's losses in case of default. The lease term should be set below the equipment's useful life to avoid the danger that the client will default because the asset has become heavily depreciated or obsolete and thus is of little further value (Amir *et al.*, 1989). In situation where a dairy goat keeper is setting up its own lease programme, careful consideration should be given to the conditions under which a dairy goat will be given.

The terms should be discussed with the new members who wish to keep the dairy goats and agreed by them. The dairy goat group in the Mafefe area made an agreement with the new members that, failure to make lease payments in time should be penalized by transferring the goats to the other new member who is interested in keeping goats and be able to make a payments in a timely manner. If lease terms are too difficult, producers will not accept them, but if they do, may not be able to meet the repayment schedule and may become indebted. If the lease terms are too easy, people will be discouraged from taking the responsibility of the lease seriously.

Lease payments can be separated into two types based on when the cash payment occurs, which is either at the beginning or the end of a period. Lease payments are usually made at the beginning of a period before the lessee takes control of the leased asset. The repayment of this lease is done by deducting the payable amount from the proceeds from sales (selling of milk and goats), and what farmer receives is the gross income. The lease taken is from R50 per month (in cash). Repayment schedule should be discussed with the leaser (a new member) of a dairy goat in detail, and a grace period repayment rates agreed. It should be clear what circumstances (drought or disease, for instance) repayments may be delayed and for what periods (Amir *et al.,* 1989).

Repayments may be allowed in cash or in small regular instalments (monthly instalments). Some farmers may find it difficult to repay in large lump while some find it easier after selling the dairy goat's products (Havers, 1999). Dairy goat keepers group in Mafefe village find the method of leasing so easier to them because they repay in small amounts (low monthly payment and with no other charges), perhaps with money obtained from some petty trading activities (e.g., selling of milk to the rural community members, selling of male goats for meat and selling the female goat).

2.7.9 Bye-laws of the project leasing system

Leasing requires a stable macroeconomic environment with a clear legal and regulatory framework. Financial leases are an alternative to loans for equipment acquisition. In a financial lease, the micro entrepreneur (or other lessee) specifies to the MFI (or other lessor) the desired equipment and the dealer from whom the equipment should be purchased. The MFI purchases this equipment, which the lessee uses (Jansson, 2003). Financial leases are non-cancellable; that is, the lease cannot be cancelled without the consent of the MFI or other lessor. If financial leases were cancellable, the full-payout feature could be defeated by clients who simply return the equipment early and stop making payments (Clark, 1990).

Leasing as a contractual arrangement must be lawful. Each member of dairy goat keepers group must understand the meaning and consequences of a contract. All members entering into a contract must be willing to do so, and they must agree on their contractual obligations to each other. They must be fully aware of their contractual obligations and they must agree that performance of what is said in the contract will take place. A contract must include the date of signing, the actions required, how these will be reinforced and what remedies will be applied if one member fails to meet the obligations and commitments they have agreed on.

2.7.10 Default payment by LDGK group

The Lafata Dairy Goat Keepers group made an arrangement with the new members that failure to make a lease payments in a timely, should be penalized by transferring the goats to the other member who is interested in keeping dairy goats and be able to make payments in a timely.

2.7.11 Management of the revolving fund

Management of this lease is done by deducting the payable amount from the proceeds from sale (selling of milk and goats) and what farmer receives is the gross income. A member does not possess right to sell dairy goat without consultancy and approval from the management committee. A member must pay a deposit of R200.00 before receiving a goat of which is a price of local goat. The member will pay a total of R600.00 in leasing until the overall amount is paid. The lease taken is from R50 per month in cash. The collection of the lease allows the group to feed a revolving season, which allows the group to purchase new animals that are meant to be leased to new members. Different veterinary medicines and inputs were also purchased and they are managed by the group as a revolving fund for the group. Once the lease is paid off, the farmer is expected to sell a female kid to the group who can pay in cash thanks to the revolving fund.

2.8 Conclusion

Leasing contract can be an attractive financial tool for MFIs. In a lease contract, transaction costs are per-unit costs. These include writing the contract, specifying the security agreement, identifying the asset, negotiating the lease terms, and covering legal fees. Dairy Goat Keepers group can enhance the development of dairy goat keeping through leasing in Ga-Mampa Mafefe area, and furthermore, dairy goat keeping thanks to its various roles can be a financial valid option. If financial innovation improves the efficiency of the financial system, then it should also have a considerable effect on the functioning of the economy in general. The development of innovative means of payments reduces transaction costs, thereby facilitating trading and the exchange of goods and services, which in the end should lead to a better allocation of resources.

For most farmers, leasing is problem-free, money saving, and enjoyable experience. Because of the benefits they tend to derive due to their participation in such systems, they without doubt regularly support leasing group. This category of farmers understand how leasing works, and have happily enjoyed their lessee status since 2004 when the LDGK group was initiated by the CRCE. Unfortunately, they have not been successful in sharing their knowledge with other farmers who lack understanding of the system.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology followed during the study. It starts by describing the study area where the financial innovation (leasing system) has been introduced, followed by the history of the LDGK project, the method used in data collection, and the method used in data analysis.

3.2 Description of the study area

The study was conducted in Mafefe, Ga-Mampa village. Mafefe is located 120 km South East of Polokwane (Capricorn District) in the Limpopo Province of South Africa. Mafefe area was chosen as the study area because it has been a pilot site for CRCE where technical and financial innovations have been introduced over the past years: introducing dairy goat keeping through a leasing programme. There are a large number of small-scale farmers producing agricultural products in Mafefe. There is high demand of dairy goat products such as milk, meat and skin. The majority of people in the surrounding areas buy goats for traditional rituals.

3.3 The history of the Lafata Dairy Goat keeper's project (LDG)

The project was established in November 2004 by 18 members (women & men) involved in dairy goat keeping. The LDGK was formed by the residents of Ga-Mampa community after several successful workshops (by CRCE-UL) introduced dairy goat keeping to the community. CRCE proposed to introduce dairy goats that were not present in the area prior to this project, through a leasing system. Dairy goats were purchased outside Ga-Mampa and leased to the farmers selected by agreed criteria including their economic status and their willingness to invest in a new activity. These farmers were selected through a participatory process. The first five (5) members received five pregnant dairy goats, and a down payment is done in cash at delivery of the goat. A leasing agreement is signed detailing a calendar of payment (in cash). When the farmer has a female goat kid for sale, the LDGK group is given the priority to purchase but it must do it in cash: the kid is not given back to the group, it is sold. The group has recruited another 12 families to join their project and thus bringing the total to 30 members all keeping dairy goats.

The Lafata dairy goat members contribute a certain amount from the sales of milk and kids to the project account for sustainability. Monthly payment of the leasing fee from payment of shares to be member of the group: the first payment is to constitute the revolving fund to purchase new animals and provide leasing opportunities to new members, the second one is to increase the share capital of the group to develop all kind of other activities as inputs and veterinary medicines retail. Milk production ranges from 1 to 2 litres per goat per day, resulting in sufficient milk for home consumption as well for sale within the community (for income). The members of Lafata have started to see the benefits of the project after selling the offspring of their goats for R600 each.

3.4 Method used in data collection

The method used in the collection of the data was thirty (30) household interviews. Households were interviewed using a structured questionnaire. A structured questionnaire was developed based on the knowledge of farmers and their farming operations in their areas. Questionnaires were used to collect information from a household that keeps dairy goats in one form or another and were sampled using purposive sampling techniques. Group interview method was also used to find out the various roles the LDG keepers group can play.

Primary data from the Lafata Dairy Goat Keepers groups in Ga-Mampa village were used in this study and were collected using different methods of data collection such as observations, the interviews as well as the structured questionnaire. Secondary data were also used from other sources like the Internet, books, journals and previous research to guide the study.

3.5 Methods used in Data Analysis

Analytical methods
Analytical techniques used to analyse data are descriptive statistics and the cost benefit analysis.

3.5.1 Descriptive statistics

The purpose of using this analysis is to determine and compare on a project basis means and standard deviations of the following variables: household income, sources of income, household size, age, education level of the household head, etc. Other variables, like gender of household head, were analyzed using frequency distributions. Under normal circumstances, descriptive statistics are used to describe the basic features of the information used in a particular study and this information include recording, analysis and interpretation of the present nature, composition, or processes of phenomena (Bob, 2000). It focuses on prevailing conditions, on how a group behaves or functions in the present. Descriptive statistics are concerned with describing or summarizing a sample quantitatively (Huysamen, 1981).

3.6.2 Cost benefit analysis

Cost-benefit analysis attempts to put all relevant costs and benefits on a common temporal footing (Ascott, 2006). A discount rate is chosen, which is then used to compute all relevant future costs and benefits in present-value terms.

This study used Benefit-Cost Ratio (BCR) and the Net Present Value (NPV) criteria to evaluate the economic viability of dairy goat leasing system. According to Curry &Weiss

(1993), each criterion has its advantages and disadvantages and some of these advantages and disadvantages are described in the later sections.

The standard models for determining the profitability of the production of the dairy goats can, therefore, be written as follows:

(i) The Benefit Cost Ratio

$$BCR = \ddot{Y}_{t=0}^{n} \frac{B_t / (1+i)^t}{C_t / (1+i)^t}$$

(ii) The Net Present Value

$$NPV = \ddot{Y}_{t=0}^{n} \frac{B_t - C_t}{(1+i)^t}$$

Where by

B_t is the total benefits in year t

C_t is the total costs in year t

i is the rate of discount

n is the number of years from the base years, for each year of the project period

The two project criteria defined above will give more or less the same project decision. A project is considered to be financially viable when the NPV is positive and the benefit/cost ratio (BCR) is one and above (Gittinger, 1982).

The decision criterion using the BCR and NPV can be expressed formally as follows:

If BCR>1, and NPV>0; one can safely accept the project as a profitable project, while if BCR<1, and NPV<0; one can reject the project as a non-profitable project. However, if BCR=1, and NPV=0; the project will have no net effect whether it is accepted or rejected. Therefore, the norm is simply to be indifferent in the decision whether to accept or reject the project.

3.6 The Two Project Criteria

3.7.1 The Benefit Costs Ratio

The Benefit Cost Ratio (BCR) attempts to summarize the overall benefits and costs in monetary terms of a given project. It is a ratio of the benefits of a project, expressed in monetary terms, relative to its costs, also expressed in monetary terms, relative to its benefits (Baum, 1980). The benefit cost ratio technique is the first project analyses technique to be used widely. The BCR is very useful in this study to analyze the costs

incurred and expected incomes in raising dairy goats in Mafefe area. BCR analyses involve comparing the benefits of a project with the costs of the project in a ratio.

In BCR, we usually look for a ratio of discounted benefits to costs of higher than one otherwise the project does not even pay for itself at the discount rate chosen. The higher the ratio of benefits to costs, the better the project (meaning the project will be economically more viable). The BCR can be high for large or small project. Benefit-cost analysis deals with the benefits and costs regardless of who receives or pays, respectively (Ascott, 2006). This implies that we can never know that any project, even one with benefits greater than costs, will improve social welfare.

3.7.2 The Net Present Value

The Net Present Value (NPV) of a project is defined as the sum of the present values of the annual cash flows minus the initial investment. The annual cash flows are the net benefits (revenues-costs) generated from the investment during its lifetime. NPV is a standard method for the financial appraisal of long and short term projects. It indicates the extent to which a project can repay all resources committed to it at the given discount rate and still generate an additional surplus (Belete *et al.*, 1999).

The importance of NPV in this project was to determine the most optimum conditions for sustaining a leasing system to introduce a technical innovation as dairy goat keeping in a rural community characterized by small-scale farmers. It measures how the surplus will expand by choosing a particular project rather than the alternative projects available. The NPV measure has the obvious advantage that it gives an indication of the absolute amount by which the economy or project owners will be better off if the project is accepted through leasing system.

The dairy goat keepers group should invest in a project only if the NPV is greater than zero. If the NPV is less than zero, the project will not provide enough financial benefits to justify the investment, since there are alternative investments that will earn at least the rate of return of the investment. The dairy goat group usually employs a concept called NPV indexes to prioritize projects having the highest value. The higher the NPV index, the greater the investment opportunity will be. This study uses the two project criteria, the net present value (NPV) and the benefit cost ratio (BCR) as analytical tool to determine whether or not the group dairy goats' project is profitable and economically sustainable.

CHAPTER 4
LAFATA DAIRY GOAT FLOCK STRUCTURE

4.1 Introduction

This chapter discusses the dairy goat flock size composition and production for 5 years, which is assumed to be economic life of the project. It has to be however, understood that the economic life of the project could be more than 5 years once the management practices in dairy goat keeping is refined and the optimal management practice is achieved. The feed requirements and the cost incurred on these feed is computed on yearly basis. The chapter further summarizes the revenues and the operating costs of the dairy goat project and shows the calculated Net Present Value of the project and summary of the discounted cash flow analysis of the dairy goat project. Data used in this analysis were collected from the LDGK group in Mafefe, during the exploratory survey.

4.2 Dairy goat composition and production

Milk goats are small in number of units kept. The small size is directly associated with other important relatively low nutrient requirements for maintenance. Small size is associated with small yields of milk per lactating female. These small number of units kept are often well suited to the daily needs of substance families with limited ability to preserve surplus food products. Small size generally makes goats easier to handle, especially by women and children.

Table 1 below shows the dairy goat composition and production for the period of five years. The result is that, initially, in 2004, farmers were provided with five pregnant dairy goats and eight kids were born in the same year. The dairy goats increased by numbers from the year 2005 to 2008, and the kids also increased during the year 2005 to 2007, while there is a decrease in kids during 2008 due to poor management.

Constraints imposed on dairy goat production by diseases, parasites and predators are substantial and highly visible. Most farmers wished to increase their goat herds, but heart water disease was listed as being a problematic in production for dairy goats. The result shows that there were high mortality rate of kids because of poor management (no strategies for feeding and health management). Many households used goats in traditional ceremonies and some have realised that goats as a source of income. There is a limited amount of trade in goats, which are sold in the event of the family needing some cash. However, the Lafata group were benefiting from the sales of dairy goats and dairy goat milk around Mafefe community and neighbouring village, while some part of milk are for home consumption.

Dairy goats are a valuable option in improving the household cash flow of rural people in Ga-Mampa, Mafefe village and also resolve the issue of food security. Dairy goats are a source of high quality protein for the family, but also provide small cash income. It has the potential for improving the diet of the rural population and also supplementing the

producer's income. Dairy goats are seen as suitable animals to assist families to break the cycle of poverty. Most dairy goats in Mafefe are milked for family use. Small yields of goat milk are consumed by the household and the surplus sold to generate cash income (Martin, 1982).

Table 1: Dairy goat's composition and production

Year	**2004**	**2005**	**2006**	**2007**	**2008**
Dairy goats (No)					
Female goats[1)]	5	10	12	22	27
Male goats[1)]	3	5	7	7	6
Kids born[2)]	5	5	3	5	8
TOTAL	**13**	**20**	**25**	**34**	**41**
Purchases (No) [3)]					
Female goats	-	2	-	4	2
Male goats	-	2	3	2	2
Deaths (No)[4)]					
Female goats	-	-	2	2	-
Male goats	-	-	2	-	-
Male Kids	2	3	3	2	2
Female kids	1	-	-	3	-
TOTAL	**3**	**3**	**7**	**7**	**2**
Sales (No)[5)]					
Female goats	-	-	2	-	-
Male goats	-	3	2	4	3
Male kids	-	4	3	3	-
Milk production (Lts)[6)]					
Dairy goat in Litres	150	220	350	400	250
Milk sold	100	150	250	300	150
Home consumption	50	70	100	100	100
Veterinary services					
Per dairy goat/year (in R)	-	**200**	**200**	**200**	**200**

Source : Computed from survey data

Note:

1) Number of dairy goats is small in size from the beginning of the year
2) Number of kids born over 5 years of the project
3) Female and male goats purchases over 5 years of project.

4) Death rates to dairy goats; high death rates are relatively in kids.
5) Total number of goats sold to the local community and the neighbouring village; high percentage in the sale of male goats.
6) Total amount of milk produced per dairy goat/day in litres; amount of milk sold to the local community and some amount of milk for home consumption.

4.3 Feed requirements and costs of feed

Dairy goats are more selective feeders (browsers) than cattle, tending to select the better quality portions of plants. While both cattle and sheep are grazers, goats are browsers and utilize a broader range of plant species than either sheep or cattle (Demment & Van Soest, 1982). Goats survive drought better than cattle. Table 2 below shows the feed requirements for dairy goats and the costs incurred on these feeds based on the feed purchased, pellets and Lucerne. The results indicate that during the beginning of the project in year 2004, dairy goat feeds (such as Lucerne and pellets) were provided for free to all dairy goat keepers. Therefore, farmers started to buy feeds in 2005. The amount of feed purchased increased from 2005 to 2006 but reducing in 2008.

Table 2: Feed requirements and costs of feed

Years	**2004**	**2005**	**2006**	**2007**	**2008**
Feed requirements					
Feed purchased (R)[1)]	-	500	600	800	600
Costs of feed					
Cost on pellets (R)[2)]	-	800	800	800	800
Cost on Lucerne (R)[3)]	-	300	400	500	500
Total feed cost (R)	**-**	**1100**	**1200**	**1300**	**1300**

Source : Computed from survey data

Note:

1) A dairy goat is given 500g of pellets and 2kg of Lucerne per day
2) 500g of pellets costs R3.00
3) 2kg of Lucerne costs R10.00

4.4 Revenues and Operating Costs

Capital requirements for dairy goats consist of the stock. Other important components for which substantial funding would be feed supplements and veterinary requirements. Costs related to the construction of buildings to house the animals are minimal. Farmers said that they keep goats for ceremonial purposes and sell to the local communities. They also indicated that goats do not bring meaningful income to households due to unavailable markets in Mafefe area. Currently, milk is sold informally between the households within the village at a price of between R5.00 and R6.00 per litre. Customers who buy the milk from the supermarket pay between R12.00 and R15.00 per litre.

Goats may not be making a significant contribution to income of households because they are not being produced with formal market orientation. This simply implies that currently goats are not contributing to the economy of the Limpopo Province. It is most likely that the price of goat will always remain less than that of cattle; at a price of R600.00 per goat (±R8/kg) as compared to R3000.00 per cattle (±R20/kg).
Table 3 shows the revenues and operating costs of the dairy goat project in five years period. The results indicate the revenues from the total sale of goats, kids and raw milk during the years between 2005 and 2008 which is of highly profitable on approximately R133/month Gross Margin. The result shows that in the beginning of the Lafata Dairy Goat project in year 2004 there was no revenues (because no dairy goats or milk or kids were sold).

Table 3: Project revenues and operating costs

Years	**2004**	**2005**	**2006**	**2007**	**2008**
Revenues (R)[1)]					
Sale of male kids	-	1600	1200	1200	400
Sale of female goats	-	-	1200	-	-
Sale of male goats	-	1800	1200	2400	1800
Subtotal	-	**3400**	**3600**	**3600**	**2200**
Sale of milk (R)					
Raw milk sale[2)]	-	900	1500	2000	900
TOTAL	**-**	**4300**	**5100**	**5600**	**3100**
Operating costs (R)					
Feed costs	-	1100	1200	1300	1300
Veterinary services[3)]	200	200	200	200	200
Total	**200**	**1300**	**1400**	**1500**	**1500**

Source : Computed from survey data

Note:
1) Male kid sold at R400.00; Male goat at R600.00; Female goat at R600.00.
2) Raw milk sold at R6.00 per litre.
3) Veterinary services at R200.00 per dairy goat per year.

4.5 Net Present Value

South Africa's governor of the Reserve Bank (Mr Tito Mboweni) has indicated that South Africa has entered into a period of tight money or inflation that has pushed bank loan rates up by 10% points, from 12% to 22% in 2004. Market had anticipated a cut of that size, which took the Bank's repo rate of 10% and marked the biggest adjustment to SA's interest rates since 2003. In these circumstances, a discount rate of 10 % was used in the analysis to compute all relevant future costs and benefits in present-value terms. The aim of Microfinance Institutions (MFI's) funding strategy is to make the MFI as profitable as possible while maintaining acceptable levels of interest rate.

Table 4 below gives the discounted cash flow analysis for the project. The results indicated that the NPV and BCR were R8869.21 and 3.08 respectively with a discount rate of 10%. The result show that the discounted benefits to costs in BCR is higher than one. Higher discount rates tend to lower the profitability. The higher the ratio of benefits to costs, the better the project indicating that the project will be economically viable.

The BCR is very useful tool to analyze the costs incurred and expected incomes in raising dairy goats among LDGK group. The result indicates the highest NPV, which means that dairy goat keepers group should invest in the project. The NPV and BCR were all financially sound for the dairy goat project in Mafefe. The Lafata Dairy Goat Project in Mafefe is profitable and economically viable in dairy goat production through leasing system.

Table 4: Calculation of Net Present Value ('000 RANDS)

Year	**Total flow of costs**	**Total flow of benefit**	**Discount factor (10%)**	**Present value of cost**	**Present value of benefits**
2004	200	0	0.909	181.8	0
2005	1300	4300	0.826	1 073.80	3 551.80
2006	1400	5100	0.751	1 051.40	3 830.10
2007	1500	5600	0.683	1 024.50	3 824.80
2008	1500	3100	0.621	931.50	1 925.51
Total				**4 263.00**	**13 132.21**
Net present value (NPV)				**+8 869.21**	
Benefit cost ratio (B/C)				**+3.08**	

Source : Computed from Table 1-4

4.6 Sensitivity Analysis

The purpose of the sensitivity test is to determine the effects that marginal changes in certain variables would have on the project. It is necessary to run sensitivity analysis in such projects to determine the effects of uncertainties. It was concluded that the variables that are most likely to be subjected to change are the price of goat milk, the goats themselves and cost of the inputs. Consequently, we have considered the following three situations:

(a) Benefits reduced by 20%;

(b) Costs inflated by 20% and;

(c) Combined effects where benefits are reduced by 20% and costs inflated by 20%.

4.6.1 Benefits reduced by 20%

The project would be sensitive to the reduction of benefits that is likely to result from changes in prices as production increases, assuming all other things remain constant. As can be seen from Table 5, a reduction of benefits by 20% could cause the Net Present Value (NPV) to fall from R8869.21 to R6242.77, and the Benefit Cost Ratio (BCR) from 3.08 to 2.46. The project is therefore fairly sensitive to changes in prices of goats and goat milk but still profitable.

4.6.2 Costs inflated by 20%

A similar assessment was made by assuming that the costs are inflated during the life of the project. As shown in Table 5, a 20% increase in costs result in a drop of the NPV from R8869.21 to r8016.61 and BCR from 3.08 to 2.57. This perhaps indicates that the project is less sensitive to the increase in costs than to a reduction in benefits. Since BCR is at 3.08, it is simple logic that the same increment applied to cost (C) or benefit (B) would have a bigger impact on (B) since (B) is more important.

4.6.3 Combined effects

The combined effects include reduction of benefits by 20% and an increase of cost by 20%. Table 5 shows that the effects of the two variables combined will result in a positive NPV (5390.17) and a B/C ratio of more than one (2.05). In general, the project is considered to be viable, but it may be necessary to revise for either underestimation of costs or overestimation of prices of products or other uncertainties.

Table 5: Summary of Discounted Cash Flow Analysis of the Dairy Goat Project

Measure	**Normal conditions**	**Benefits reduced by 20%**	**Costs inflated by 20%**	**Combined Effect-costs inflated by 20% and benefits reduced by 20%**
Present value of costs	4263.00	4263.00	5115.60	5115.60
Present value of benefits	13132.21	10505.77	13132.21	10505.77
Net Present Value (NPV)	8869.21	6242.77	8016.61	5390.17
Benefit Cost Ratio (BCR)	3.08	2.46	2.57	2.05

Source : Computed from Table 1-4

CHAPTER 5
RESULTS AND DISCUSSION

5.1 Introduction

This chapter discusses the results of the study. Discussion of the result starts with the socio-economic characteristics of farmers among the Lafata Dairy Goat Keepers group regarding the age, gender distribution within LDGK group, and educational background of the members of the LDGK group. It also discusses the income upon which the farmers are dependent and the cost incurred by farmers in relation to production. Results were in tabular form and charts and each of them discussed and interpreted.

5.2 Socio-Economic Characteristics of the Lafata Dairy Goat Keepers Group

Socio-economic characteristics of the group were analyzed based on the following characteristics: age of household head and gender of the households keeping dairy goats; their level of education; their income sources; and household head income per month.

5.2.1 Age of the households head

Figure 1 shows age of the household head keeping dairy goats. The results indicated that 66.6% of the respondents were at the age range of 39 to 60 years, while 19.9% of the respondents were of the old aged group 64-70 years of age. The lowest percentages (13.2%) of the respondents were youth at the age group of 33 to 35 years of age. The result shows that the youngest farmer in the group is of 33 years of age, while the oldest is 70 years old. This perhaps indicates that those who have a high potential of keeping dairy goats in the rural area are the people from the age of 39 years and older.

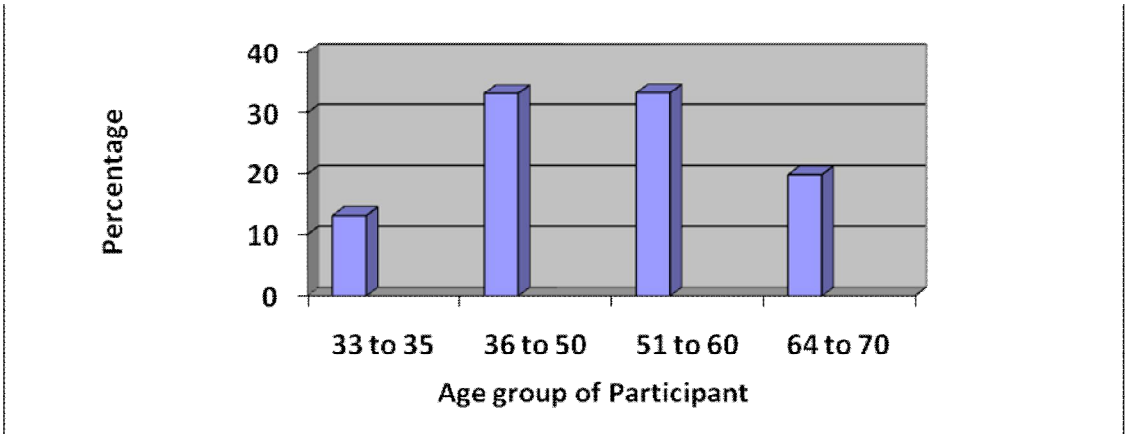

Figure 1: Age groups of owners of dairy goats in Mafefe

5.2.2 Gender distribution within Lafata Dairy Goat Keepers Group

Table 6 below shows the gender of household head of the Lafata Dairy Goat Keepers group. The results indicated that 63.3% of the respondents are female while 36.7% of the respondents are male. This implies that female-headed households have a high potential of keeping dairy goats in Mafefe area than men. This supports the idea that small-scale farming is dominated by women, as elaborated by Matata et al., (2001) wherein they indicated that most small-scale farmers in Africa are women who farm to support their families.

Table 6: Gender Distribution in the Project

SEX	**FREQUENCY**	**PERCENTAGE**
Female	19	63.3
Male	11	36.7
TOTAL	**30**	**100**

5.2.3 Education level of the respondents

Educational level also plays an important role in commercialization, especially when it comes to training, adoption and use of acquired knowledge (Roets, 1998). Education is a fundamental factor that can enable farmers to easily communicate and understand farming business and be able to interpret market information (Senyolo, 2007). As such education acquired through schooling could potentially enhance farm efficiency through acquisition of knowledge relevant to agriculture, or through enhancing household capacity to learn from farming experiences.

Table 7 below shows the level of education of the household head among the Lafata Dairy Goat Keepers group. The results show that 60% of the respondents had secondary school education. Farmers with a secondary level of education adopted and were still using most of the technologies that were introduced to them 4 years earlier. About (20%) of the respondents had primary school education, while 20% of the respondents had no formal education (never attended schooling). Household heads with no formal education and those with primary level of education were fused into one category of basic education.

Table 7: Education level of the respondents

Education level	**Frequency**	**Percentage of household**
No schooling	6	20
Primary	6	20
Secondary	18	60
TOTAL	**30**	**100**

5.2.4 Distribution of income sources among LDGK group

Agriculture is the main economic activity in most rural areas, and the ability and willingness of a household to adopt technology impacts on its total household production, as well as the household's participation in output market. On the other hand, the amount of income that a household generates from agricultural activities may also influence the household's decision to either adopt certain technologies or not (Senyolo, 2007).

Figure 2 shows the different sources of income and their distribution among the LDGK group. The results showed that 86.7% of households in Mafefe are economically active in farming indicating that many households depend on agriculture for a living. About 62% of the households depend on Child Grant fund, while 40% are old aged pensioners. This implies that households with regular income (i.e., household receiving pension or any other regular income sources such as salaries) may be able to buy animal feeds and drugs and hence tend to keep dairy goats.

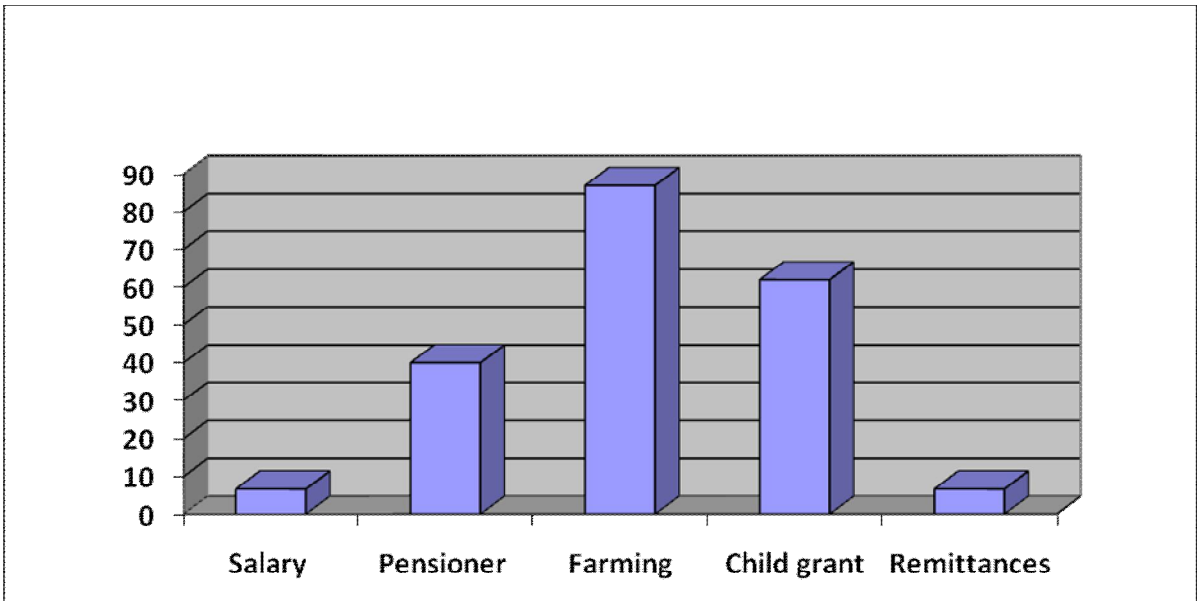

Figure 2: Distribution of income sources among Mafefe village

5.2.5 Household head income per month

Table 8 shows the monthly income of households among the Lafata Dairy Goat Keepers group in Mafefe. The results showed that 67% of the households was perceived to be in the low income group (with a monthly income level less than R1000), 23% of the households to be in the middle income group (with a monthly income level between R1000-R3000) and 10% of the households to be in the high income group (with a monthly income level above R3000). The households with regular source of income are in cases whereby household members are employed and are in possession of physical assets like big house, car, television and good furniture, which were perceived as forming part of the high income group. The households with at least part of income assured and possession of physical assets like medium house, television and furniture were perceived as middle income group, while the households with RDP houses, no regular source of income (i.e., not receiving pension or other regular income sources) were perceived as low income group (Anteneh *et al.*, 2004).

Table 8: Monthly income of household head keeping dairy goats

INCOME	FREQUENCY	PERCENTAGE
R0-R1000	20	67
R1001-R3000	7	23
R3001-R5000	3	10
TOTAL	**30**	**100**

5.2.6 Types of livestock kept other than goats

Figure 3 shows the types of livestock that the households kept apart from goats. The results indicate that, among households with agricultural sources for livelihood, 100% of the households have dairy goats. This is so because goats are hardy and can survive difficult periods. Goats are said to be easy to keep in comparison to other livestock species and have good market demand (Call, 1981). Most goats are kept for household consumption and any extra production is sold within the village. The Table indicate that 63% of the households kept chickens, because chickens are easy to maintain, and sell to other communities, and also for home consumption. Thirty percent (30%) of households have donkeys because they used them as a mode of transport (for the collection of woods, fodder and water) and also for assisting with the ploughing of the land. About 23% of households among the LDGK group considered cattle as a preferred livestock species because they are saleable and one gets more from a unit sale. Cattle also produce meat and milk for home consumption and selling.

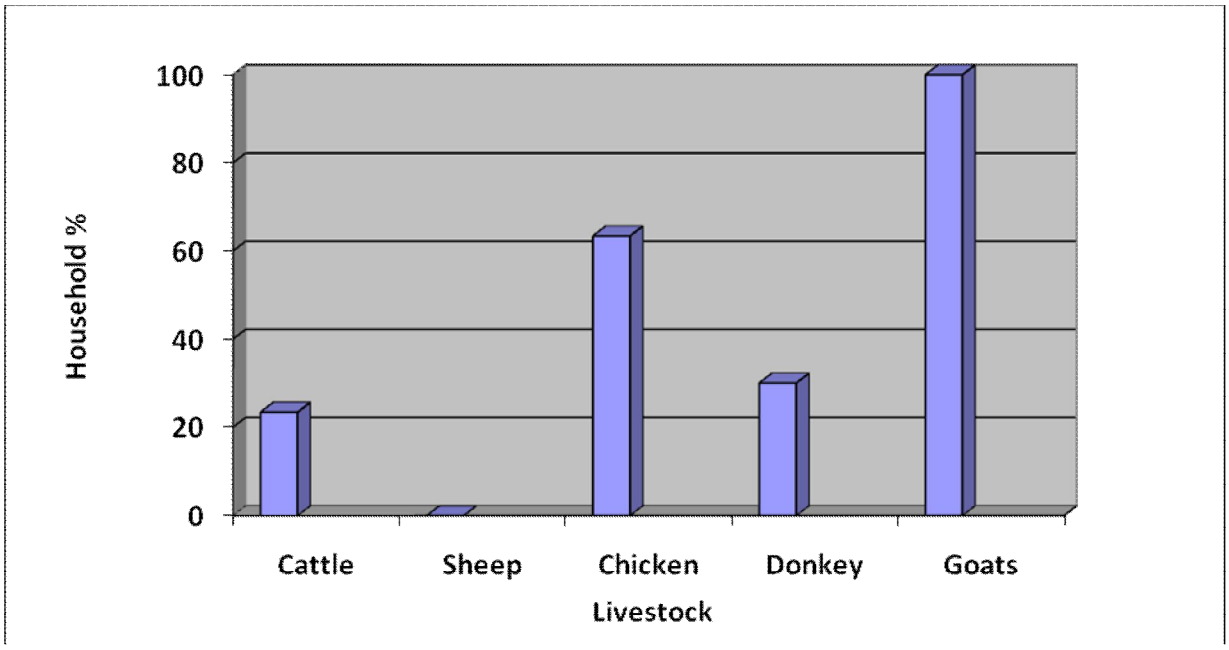

Figure 3: Types of livestock kept by households

5.3 Management Practices of Dairy Goat Keeping

5.3.1 Sources of feeding

Households fed their dairy goats with field crops and fodder feeds, home grown feeds and purchased feed. Figure 4 below shows the different sources of feeds (such as home grown, field crops residues and fodder) for dairy goats. The results showed that all the households (100%) fed their dairy goats with field crops residues and fodder feeds. Almost all the households (96%) fed their goats with home grown feeds, while about 40% of the households purchased feed for the goats. Dairy goats among the LDGK project were kept under zero grazing whereby farmers had to keep their goats in their houses and supply them with feed. Farmers looked for any local grasses, trees; cabbage leaves and crop residues, which were liked by local goats.

It is indicated that the majority of households among LDGK group fed their goats correctly and, as such, their goats will keep on producing milk. Therefore, the expected income to pay back the lease fee will be available and the lessee will not face a difficult financial situation.

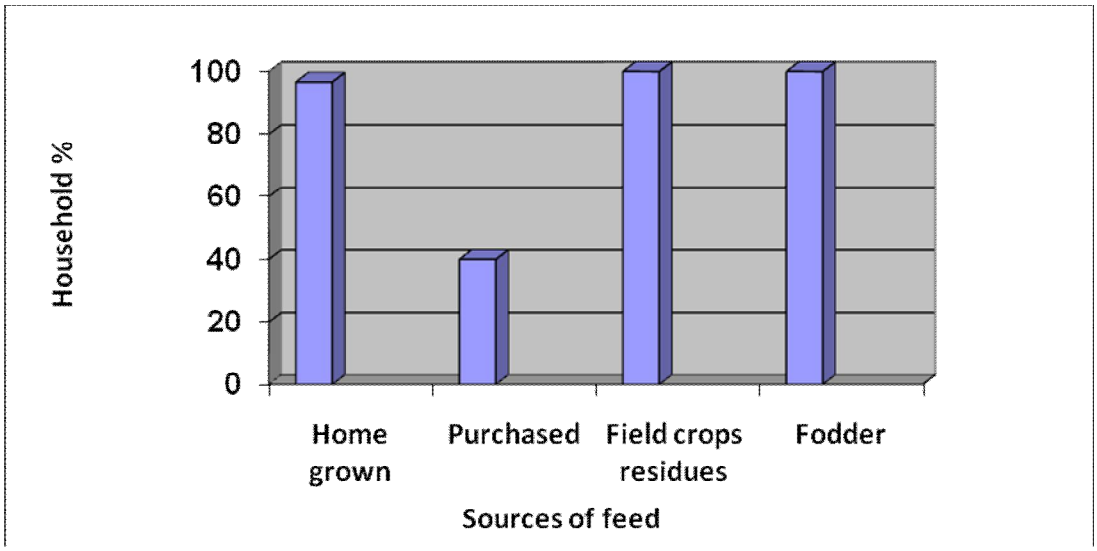

Figure 4: Sources of feed for dairy goats

5.3.2 Member responsible for fetching feed for goats

Figure 5 shows the member in the household responsible for fetching feeds for the dairy goats. The results indicated that slightly more than half of the LDGK members (53.3%) of women/wives are responsible for taking care of feeding dairy goats, followed by 30% of man/husband in the households.

The case of South Africa, regarding the role of women in various aspects of ownership, is typical in many other African countries having similar background. In most African countries, culture dictates that women are subordinates to men and hence are socially marginalized (Manjeli *et al.,* 1996). Goats are owned by women yet they do not have a room for decision making on how to utilize their animals, e.g., they are not allowed to sell goats in the absence of husbands who are migrant labours, even though they are the ones who own them.

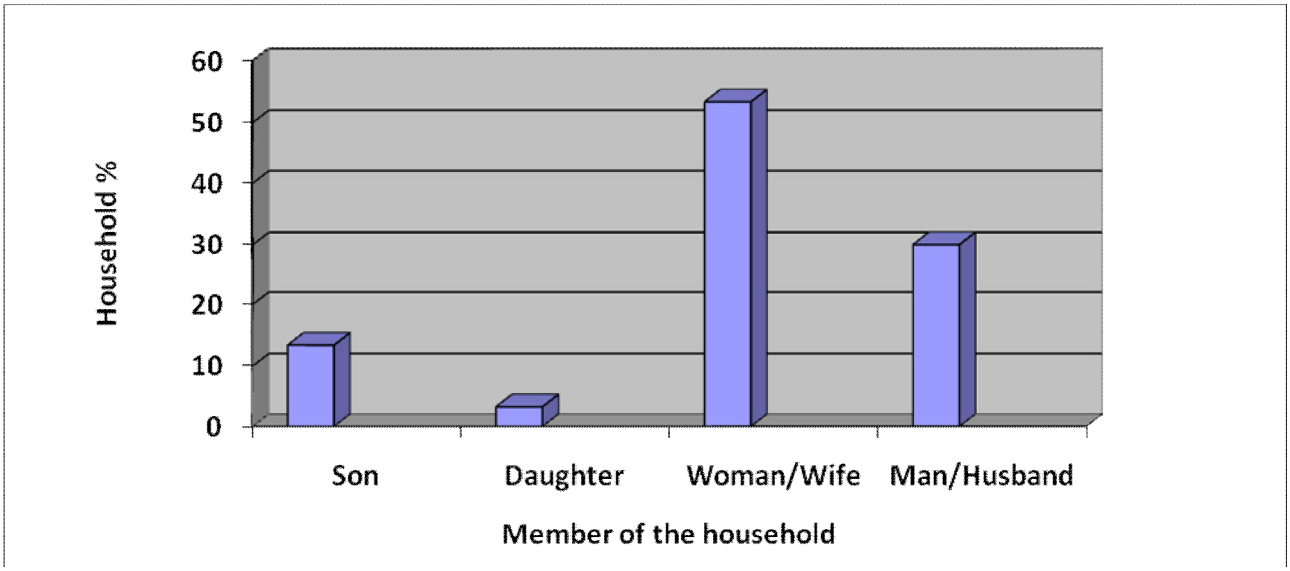

Figure 5: Member responsible for fetching feed for dairy goats

5.3.3 Feeding strategy of dairy goats

Table 9 below shows feeding strategy of dairy goats on a daily basis. The results indicated that 53.3% of the households among LDGK group fed its dairy goats twice per day, usually once in the morning and once in the afternoon. About 33.3% of the households fed its dairy goats once per day, especially during the mid-day, and slightly more than ten percent 13.3% of the households fed its dairy goats more than twice per day. This implies that the majority of farmers feed its dairy goats twice per day for the goats to be strong enough. Good feeding will give strength to the animals.

Table 9: Feeding times of dairy goats per day

Feeding	**Frequency**	**Percentage**
Once per day	10	33.3
Twice per day	16	53.3
More than twice per day	4	13.3
TOTAL	**30**	**100**

5.3.4 Availability of feed needed for the dairy goats

Figure 6 shows the availability of feed needed for the dairy goats. Goats must be fed with lots of different feeds such as grasses and legumes, tree leaves and fresh kitchen remains. About 60% of the households among the Lafata Dairy Goat Keepers group indicates that the feed for dairy goats are readily available at the same time every day, while 37% of the households keeping dairy goats mentioned that the feeds for goats are sometimes available but not every day. Only 3% of the households indicates that the feed for the goats are not available at all, meaning their goats do not produce enough because of poor feeding strategy.

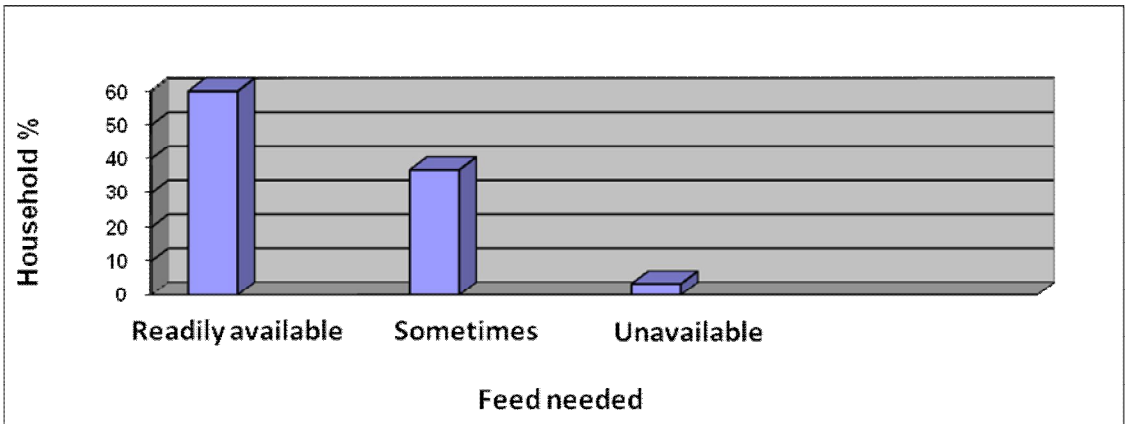

Figure 6: Availability of feed needed for dairy goats

5.3.5 Marketing of goats and it's by -products

Marketing is a complex activity that starts with a farmer's decision on how to dispose of his produce to the activities of the intermediaries (ARC, 1998). In Mafefe village, there has not been any headway as far as goat marketing is concerned. Almost all dairy goats are marketed as live animals with little value being attached to other by-products. Lack of information, appropriate infrastructure as abattoirs, roads and marketing points were cited by the households as some of the problems.

5.3.6 Output market for goats

Figure 7 shows the output market of the dairy goats and its by-products. The results indicated that 86.7% of the households among the LDGK group sell its goats and its by-products to the local people in the same village, while 43.3% of the households sell its goats and by-products to the people from neighbouring village. The result is that goats are traded informally, that is, out of hand sales. As such, buyers buy directly from the farming households whereby no commission is charged.

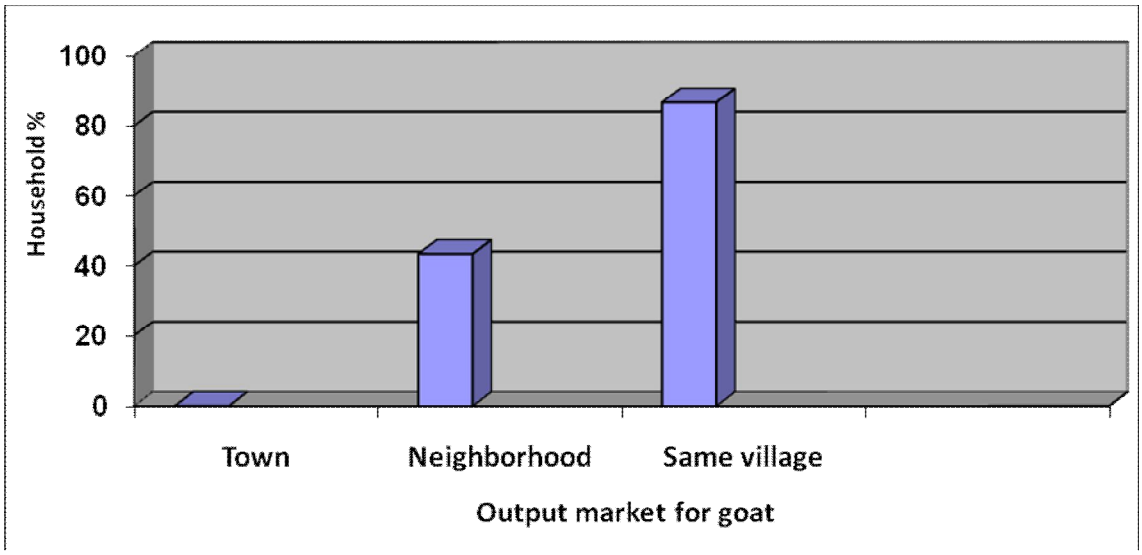

Figure 7: Output market for goats

5.3.7 Cost of milk per litre

Table 10 shows prices of dairy goat milk in litres. The results indicate that the households among the Lafata Dairy Goat Keepers group sell goat milk at a price of R5.00 to the same village and to their neighbouring village. About 27% of the households sell goat milk with a price of R6.00 per litre. This implies that the highest percentage of the Lafata Dairy Goat Keepers group sell their goats milk at affordable price.

Table 10: Cost of milk per litre

Price of milk per litre	Frequency	Percentage
R5.00	8	27
R6.00	22	73

5.4 Cost Benefit Analysis

The economic analysis from Table 4 indicates the positive Net Present Value (NPV) and the Benefit Cost Ratio (BCR) of the project. The results indicated that the NPV and BCR were R8869.21 and 3.08, respectively, at a discount rate of 10%. In these circumstances, a discount rate of 10% was used in the analysis to compute all relevant future costs and benefits in present-value terms. The NPV was found to be greater than zero (NPV>0), meaning the investment would add more value to the dairy goat and this simply confirms that the project should be accepted as a profitable project. The BCR was found to be greater than one (BCR>1), indicating that the discounted benefits exceed the discounted

costs (indicates a positive outcome). If the NPV is greater than the cost, the project will be profitable (assuming, of course, that the estimated cash flow is reasonably close to reality). Since the NPV is greater than zero, it would be better to invest in the project than to do nothing, and the investor should invest in this project if there is no alternative with a higher NPV. The higher the NPV of the project, the higher the Benefit Cost Ratio of the project will be.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RECOMMENDATION

6.1 Introduction

This chapter focused on the summary of the results of the study, the conclusions of the findings, and finally, the recommendations made from this study to the farmers on the best ways to improve the agricultural sector in smallholder areas. The chapter discusses the extent to which research questions and hypotheses posed at the beginning of the study have been addressed by the analysis.

6.2 Summary

The aim of the study was to analyze the economic viability and sustainability of the leasing system to the development of dairy goat keepers group in Mafefe. The first objective was to determine the economic viability and sustainability of the leasing system by dairy goat keepers in Mafefe. The second objective was to explore possibilities for the expansion of goat production under the leasing system in Mafefe. This means, objectives of the households keeping goats should be considered when coming up with interventions. Another reason was that households perceive goats as animals that no one could rear for sale and get a meaningful return out of it. This also explains why goat meat is not found in the South African butcheries, which may further explain why goats are not contributing to the economy of the Limpopo Province.

The marketing of goats through formal market in Mafefe area of Capricorn District in particular, is still very dismal as compared to the total number of goats in the province (ARC, 1998). The potential production and off-take of goats in the provincial flock is apparently promising, but there has not been a very good demand of goats and their by-products on the market. The development of marketing strategies is based on product pricing distribution and market information. Lack of information, appropriate infrastructure as abattoirs, roads and marketing points were cited by households in Mafefe as some of the problems. The people in this area have reared goats for many decades and goats form a natural part of the agricultural economy of the area, even under traditional practices. They are trying to improve their livelihood system and yet they do not generate sufficient income.

Descriptive statistics were employed in this study to differentiate the socioeconomic factors of the LDGK group and analysis, based on the following characteristics: age and gender of the households keeping dairy goats, their level of education, their income sources, and household head income per month. The statistics indicated that women have a high potential for keeping dairy goats in the rural area than men. The LDGK group was composed of a mixture of youth, adults and pensioners. It is also indicated that about 86% of the households is economically active in farming. The study found that the

highest percentages of the households were educated up to secondary school education level.

6.3 Conclusions

Limited access to microfinance services is a constraint to the development of small-scale enterprises in Limpopo Province. The nature of their activity and the fact that they are generally located in areas of remote access make it particularly challenging and costly for microfinance services successfully. Several key factors and government interventions that can facilitate the outreach of microfinance institutions to small-scale enterprises are, namely: establishing a policy framework conducive to microfinance, securing appropriate land tenure and property rights, providing business development services and market infrastructure in support of production and marketing, and enhancing the capacity of microfinance institutions to effectively service such enterprises. Financial options newly available for small-scale enterprises through the leasing system, have the potential to better integrate rural producers into dairy goat production. They could be expanded in terms of resources and complemented with technical assistance and simplified access mechanisms.

It is clear in this study that leasing offers viable bottom-line benefits to both parties - lessor and client - and, with supportive legal and regulatory environment, provides MFIs with an attractive product finance fixed assets. For the lessor, leasing represents an attractive product. Through leasing, microenterprises can allocate scarce financial resources to new capital investments in an expeditious process that will directly contribute to revenue production. Leasing provides MFIs with new opportunities to reach borrowers and expand into existing markets. Leasing has the potential to develop into an effective financing technique that MFIs can use to reach those enterprises with financial needs that otherwise cannot be satisfied by traditional microfinance approaches.

The economic analysis shows that the production of dairy goats through the leasing system can be viable proposition and that the system could play a significant role in creating jobs and improving the financial well-being of small-scale farmers. It can be concluded that the project has social and economic merits, which would include empowering rural communities through job creation and empowerment, in milk goat production, and increased liquidity of rural communities to improve capital to spend on nutrition, education and other household expenditures.

In this study, the NPV and the BCR criteria were used to evaluate the economic viability of dairy goat leasing system. As can be seen in Table 4, the NPV of the project was found to be greater than zero (NPV>0), meaning the investment would add more value to the dairy goat and this simply confirms that the project should be accepted as a profitable project. The BCR was found to be greater than one (BCR>1), indicating that the discounted benefits exceed the discounted costs (thus indicating a positive outcome), then the project will be accepted as a profitable project. If the NPV is greater than the cost, then the project will be profitable. The dairy goat project, through the leasing system, was

found to be economically and financially viable and the two hypotheses formulated in Chapter one were accepted.

The sensitivity analysis shows that milk production with dairy goats, in smallholder farming system in Limpopo Province of South Africa, can be a viable proposition, even when production costs increase by 20% or when the benefits are reduced by 20%. The evidence from this study is strongly supportive of the idea of promoting this dairy goat production through the leasing system in Mafefe area of Limpopo Province, where employment opportunities are very limited and household incomes generally low, and income from-based activities is, in most cases, less than 20% of the household income. An important added advantage is that this leasing system method to develop dairy goat would be a new cultural practice being introduced to the Mafefe rural community.

In general, the study concludes that the farmers are efficient in producing dairy goats through leasing. The introduction of dairy goat keeping to the rural people, through innovations, technical and financial considerations, aims at ensuring that rural people know how to develop new technology that could benefit them in a sustainable and economical viable way. The production of dairy goats through leasing can help reduce extreme poverty and hunger among smallholder farmers and to fight unemployment and create sustainable job opportunities in the rural areas. The Lafata Dairy Goat keepers (LDGK) group indicated that they need bigger support to boost them to attain a better agricultural production. As a group, Lafata farmers experienced that good relationship is a key factor to success in group work.

6.4 Recommendations

Governments should ensure that adequate financial policies, land tenure and infrastructure are in place to help dairy goat based small-scale enterprises to access sound and reliable microfinance services. Social intermediation should support awareness building for small-scale enterprise on microfinance services; the dissemination of information on microfinance institutions; the development of basic literacy, numeracy and skills training; and the establishment of self-help groups to participate in microfinance markets. When supporting the expansion of microfinance services to small-scale enterprises, governments and donors should never overlook the importance of accompanying microfinance facilitation with the necessary business and social backing.

Investments in basic telecommunications, roads and education can also contribute significantly to the success of microfinance in rural areas, both by increasing the prospective economic return of small-scale enterprises and by reducing transaction costs for microfinance institutions. Partnerships and networks can improve the development and delivery of innovation that directly affect the livelihoods of resource-poor and vulnerable households if structured appropriately. The challenges of today's complex society are such that individual agencies and programmes cannot succeed in delivering results on their own. Therefore, a collaborative effort that reaches across agencies, government, the public, non-profit and private sectors is needed to achieve results.

The government should assist households with the development of an appropriate marketing infrastructure for their produce so that these households will be able to produce competitive products. Dairy goat keepers group indicates that goats are traded informally, i.e., out of hand sales, buyers in the village buy directly from the farming households whereby no commissions are charged. They should also develop financial tools adapted to rural community clientele: leasing is one of them as already established that loans are not adapted (default payment and high transaction costs for both parties).

The study concentrates on what needs to be done for the dairy goat keepers through leasing in the Capricorn District to start producing goats with the idea of selling them for profit through formal market. The Lafata Dairy Goat Farmers, once provided with the necessary information, are keen to improve the production of their goats. However, they wish to maintain a certain part or number of their stock for traditional purposes, which they may sell to other villagers during traditional ceremonies. Formal institutions need to be created or existing institutions need to be upgraded so as to better equip households with the potential to commercialize goats with appropriate knowledge and skills for marketing and quality control. Research needs to shift its focus to areas where the greatest return for farmers can be achieved. This includes product-related research, product development and market analysis.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

QUESTIONNAIRE RELATED TO DAIRY GOAT KEEPERS GROUP

AN ECONOMIC ANALYSIS OF THE LEASING SYSTEM TO DEVELOP DAIRY GOATS PRODUCTION: A CASE STUDY AT GA-MAMPA, MAFEFE VILLAGE OF LIMPOPO, SOUTH AFRICA.

DEPARTMENT OF AGRICULTURAL ECONOMICS

UNIVERSITY OF LIMPOPO

TURFLOOP CAMPUS

NAME OF ENUMERATOR ……..

DATE OF INTERVIEW ……..

NAME OF VILLAGE ……..

NAME OF SUB-SECTION ...……...

SECTION 1

SOCIO-ECONOMIC QUESTIONS

NAME OF PARTICIPANT ……

AGE OF PARTICIPANT ……

GENDER

FEMALE		MALE	

B. PERSONAL INFORMATION

1. HOUSEHOLD ROSTER

A. Members of household (Number of people living with you)	**B. Sex** 1.Female 2. Male	**C. Age**	**D. Marital Status** 1. Single 2. Widowed 3. Married 4. Divorced	**E. Educational Level** 1. No schooling 2. Primary 3. Secondary 4. Tertiary
1. 2. 3. 4. 5. 6. 7. 8. 9.				

2. SOURCES OF INCOME

A. Salary	B. Pension	C. Farming	D. Child grants	D. Remittances	E. Other

3. What is the income of household head per month?

<500	500-1000	1000-1500	1500-2000	2000-3000	3000-5000

SECTION B

PRODUCTION INFORMATION

1. How many dairy goats do you have or keep?

1. < 5	2. <10	3. < 15	4. <20	5. Other, specify

2. Who fetches the food for the dairy goats?

1. Man/ husband	2. Woman/wife	3. Daughter	4. Son	5. Other (specify)

3. How much food do you use for the goats per day/week/ month? Estimate.

   ..... (In kg)

4. How often do you feed your goats per day?

1. Once a day	2. Twice a day	3. More than once a day

5. Is the household able to get all the feed needed for the dairy goats?

1. Mostly yes	2. Sometimes	3. Mostly no

6. Do you expect the quantity of food to increase during the next year (for production, mating etc?)

1.Yes		2.No	

7. Do you have a goat house?

1. Yes		2. No	

8. Do you clean your goat's house?

1. Yes		2. No	

9. How often do you clean your goats' house per week?

1. Daily	2. Once	3. Twice	4. Other, Specify

10. What materials did you use to build the goat kraal? ……

……

11. Where did you get your materials? ……...

12. How much was the costs of the materials? .....

13. When does the goat use the kraal? .....

A. During the day	B. At night	C. Day and night

14. How much water do you use for the dairy goats (in litres)? Specify

1. Day	2. Week	3. Month

15. What other types of livestock do you keep?

A. Cattle	B. Sheep	C. Chicken	D. Donkey	E. Other

16. Where do you buy/sell your dairy goats?

A. Town	B. Neighbourhood	C. Same village	D. Others

17. Do you sell/buy dairy goat milk to/from neighbours?

1.Yes		2.No	

18. If Yes,

A. Do you sell/buy dairy goat milk to/ from your neighbours? (Indicate sell/buy)	B. How much do you charge / have to pay per litres?(In R)	C. How much milk do you sell/buy per day/week/month (In litres)	D. What were your total revenues/ expenditures per month from sales to/from neighbours? (In R)

SECTION 2

LEASING SYSTEM TO DEVELOP DAIRY GOAT

1. Are you happy with the way the group assists farmers on matters concerning leasing dairy goats in this village?

1. Yes		2. No		3. Don't know	

2. If No, what are the reason(s)? .....

……

3. Do other people know about a leasing system?

1. Yes		2. No		3. Don't know	

4. Do you belong to any farmers' organization?

1. Yes		2. No	

5. Is it easy to buy or lease a dairy goat?

1. Yes		2. No	

6. If lease, why?

A. Low monthly instalment	B. No extra charges	C. Other, specify

7. Are you comfortable with the procedure of leasing?

1. Yes		2. No	

8. Is this practice of leasing system more common among certain members of the community?

1. Yes		2. No		3. Don't know	

9. How do people perceive this method of leasing system?

A. Positive	B. Negative	C. Indifferent

10. Who do you approach for finances to lease a dairy goat?

A. Bank	B. Money lender in the village	C. LDG keepers groups	D. Other, specify

11. How is the interest rate?

A. Expensive	B. Affordable	C. No interest rate

12. How many goats do you think you can handle at one time?

A. <5	B. 5-10	C. 10-15	D.15-20	E. Other, specify

13. Has keeping dairy goats become profitable to you?

1. Yes		2. No	

14. What is (are) your reason(s) for keeping dairy goats?

A. Kept for sales	B. Home consumption	C. Cultural ceremonies	D. Milking

15. What are the sources of feed for dairy goats?

A. Home grown	B. Purchased	C. Fields crop residues	D. Fodder feeds

16. If purchased, how much do you spend per month? .....

17. During the past two years, have your goats increased in number?

1. Yes		2. No	

18. If No, what is (are) the reason(s)?

A. Poor nutrition	B. Diseases	C. Poor husbandry practices	D. Others