COLLEGE OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMNT

FACTORS AFFECTING DAIRY FARMING IN ETHIOPIA: IN CASE OF MUGER TOWN AND SURROUNDING FIVE RURAL KEBELES

BY: YEYIS TECHAN BEYENE

A Thesis Submitted to School of Commerce in Partial Fulfillment of the Requirement for the Award of Master in Project Management.

Advisor: Dr. Worku Mekonnen

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Statement of Declaration

I, Yeyis Techan declare that this thesis entitled " Factors Affecting Dairy Farming in Ethiopia: in case of Muger Town and Surrounding Five Rural Kebele's is outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of the thesis Advisor.

This study has not been submitted for any degree in this University or any other University. It is offered for the partial fulfillment of the degree of Masters of Project Management.

Yeyis Techan

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This is to certify that the thesis entitled, "The factors affecting Dairy Farming in Ethiopia: in case of Muger Town and Surrounding Five rural Kebeles ", submitted for the partial fulfillment of degree of Master of Art in Project Management at Addis Ababa University, College of Commerce is carried out By Yeyis Techan Beyene under my supervision..

_____

Advisor: Worku Mekonnen (PhD)

Addis Ababa University, College of Commerce

School of Graduate Studies

This is to certify that the thesis prepared by Yeyis Techan Beyene, entitled: Factors Affecting Dairy Farming in Ethiopia: in case of Muger Town and Surrounding Five Rural Kebeles and submitted in partial fulfillment of the requirements for the degree of Master of Art in Project Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abstract

The study is conducted to explore factors affecting dairy farming at Muger Town and surrounding Five Rural kebeles (Chancho Birate, Biyo wegidi, Ula Gora, Reji Mekoda and Deku Kersa).The study employed descriptive research design and use both secondary and primary source of data. Primary data were collected from 201 small dairy farmers by using semi structured questionnaires and the collected data were analyzed through descriptive statistic such as percentage, frequency and mean. The study area is dominated by rural dairy farming system when butter is the most tradable dairy product of the area. Farmers are mainly depending on the local cows for their dairy farming activities. The major factors affecting dairy farming of the study area are shortage of feed, inadequate access to land, inadequate access to extension advice, low access to credit, low knowledge of preserving feed, absence of drug, high price of cross breed cows, absence of artificial insemination service, and expected disease resistance of local cows. Hence, introduction of Artificial Insemination in to an area, sowing improved animal feed, increase accessibility of credit and extension advice and make extensive awareness creation to small farmers about dairy farming are important to increase dairy farming of the area.

Acronyms

AI	Artificial Insemination
GDP	Gross Domestic Product
MoFED	Ministry of Finance and Economic Development
IBC	Institute of Biodiversity Conservation
IPMS	Improved Productivity and Market Success
PRA	Participatory Rural Appraisal
RMA	Rapid Market Appraisal
SNNP	South Nation and Nationalities People

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study.

Ethiopia owns the largest livestock population in Africa. The cattle population in the country is estimated to be 53.9 million, out of which cows constitutes about 55.4 percent. About 98.95% of the total cattle are local breeds (CSA, 2011). Livestock raring in Ethiopia largely of small holder farming system with an animal multipurpose use and accounts to approximately 30% of the total agricultural gross domestic product(GDP)and 16%of national foreign currency earning (IBC,2004). Cattle are very important livestock species in the traditional mixed crop livestock production systems of Ethiopia by providing mainly drought power, a small amount of milk, meat usually when they retire and manure.

Ethiopia has a large potential for dairy development in East Africa. The increasing domestic demand for milk and milk product, better market opportunity, diverse livestock genetic resource, existence of diverse agro-ecological suitable for dairy production, better market opportunity, and proximity to international markets indicate the potentials and opportunities for dairy farming in the country(CSA,2011) . However, the country dairy production systems depend largely on local livestock genetic resources mainly on cattle. Cattle have the largest contribution (81.2%) of the total national annual milk output. Productivity of the local livestock genetic resource in general is low, and the direct contribution it makes to the national economy is limited.

The fast growing populations of the country with urbanization and rising of income of the people is leading to a substantial increase in the demand for milk and milk product. To meet the growing demand for milk, milk production has to grow at least at rate of 4% per annual (Assaminew and Eyasu, 2009).Demand for milk also decided by the number of population and with increasing per capital income of the societies in the developing countries(Ketema,1995).

Dairy farming system of the country has divided into urban, per urban and rural dairy production based on its location (Ahmed et al., 2003). From the existing dairy production systems, the traditional dairy production system is the involving from smallholder dairy farms. This milk

production system is dominated with indigenous breeds, account for about 98% of total annual milk production in the country (Yonard, 2009). Over 85% of milk produced by rural households is consumed within the producer households with the proportion marketed being less than 7 %(CSA, 2011). However, the vast majority of milk produced outside urban centers in the country is processed into milk products at household level using backward technologies (Muriui et al., 2001)

There are various factors affecting dairy farming of the country such as socioeconomic, institutional factors, low feed production, incidence of the important livestock diseases and parasitic(Fekadu, 1994).Therefore, studying the factor affecting dairy farming of the study area is appealing since factors affecting dairy farming are different from location to location.

1.2 Statement of the Problem

Ethiopia is a sub-Saharan Africa country in which many population of the country mainly rely on agriculture including their livestock income. The country is believed to have the largest livestock population in Africa. Its livestock performs multiple functions in the house hold economy by providing food, inputs for crop production, and soil fertility management (CSA, 2013).

Dairy farming is among the Agricultural sectors in Ethiopia which contribute to the gross domestic product as well as enabling farmers earn an income from the sale of dairy product in the market. Besides, dairy farming is one of the sectors in the Ethiopia economy believed to improve the income and well being of the rural small farmers. To support Dairy farming and other Agricultural products, the government of country extended Agricultural Extension services to the many of the rural kebeles.

Ethiopia has many potential to perform dairy farming and to enable its small farmers to generate enough income by selling product to the domestic market and to the neighbor countries. In spite of the larger capacity for grow the country has to make milk; there is a constant shortage of the product in most part of the country. This is reflected where only 5% of milk produced in rural areas is marketed as liquid milk (Getachew, 2003). This Occur largely from inadequate production joined with inhibitive cultural undesirable related to consumption and lack of correct processing and marketing (Zegeye, 2003).

There are many factors which constraint dairy farming in the Ethiopia. Researches related to this title have been made by many investigators. The major factors which affect dairy farming were lack of supply of quality food, poor access to input and services, genotype related constraints, poor access to credit and seasonality of demand during fasting time were the major challenge of dairy farming in many part of the country(Sintayehu, et al 2008; Adebabay, 2009 and Azage at el, 2013).

The impact of various dairy research were unsatisfactory and failed to meet their objective due to inability to identify appropriate factor affecting dairy farming which is mainly different depend on various Agro-ecological zones and define improved dairy farming practices(Ahmed et al,.2003). Appropriate information and proper documentation of dairy farming will play a vital role to develop dairy sector of the economy (Rey et al, .1993)

The demand for dairy product is rising in Ethiopia. Prices are being pushed up as demand is met by imported products, particularly powered milk. This is resulted from the growth of the population of country estimated to 110 million people. This creates huge market opportunity for milk and milk products (Azage Tegegne, 2018).

The country produces about 4 billion liters of milk per year and per capital consumption is very low, estimated at about 20 liters, though rising consumption levels in Addis Ababa have brought it to about 40 liters. The food and agricultural Organization recommends that per capital consumption of milk be about 200 liters, meaning 22 billion liters of milk is required. At the current production rate, there is an annual shortage of about 18 billion liters (Azage Tegegne, 2018).

Therefore, dairy production in Ethiopia is anticipated to increase rapidly in response to the fast growing demand for livestock products resulting from increasing human population, especially in urban areas and rising consumer income, provide that appropriate study to be made to identify factors affecting dairy farming sector of the country.

The study identify factors affecting dairy farming and also it is crucial to provide necessary information on the operation of dairy farming and contribute in filling the supply gap of dairy product in mugger Town and surrounding its rural kebeles

1.3 Research Questions

The study tries to answer the following research questions

1. What is the effect of dairy farming system on the dairy farming of the study area?

2. How is the dairy product marketing system of the study area taking place?

3. What is the role of Agricultural extension service in the dairy farming of the study area?

4. What are the major constraints of dairy farming of the study area?

1.4. Objective of the study

1.4.1 General Objective

The general objective of the study is to identify factors affecting of dairy farming in Muger town and around five rural kebeles.

1.4.2. Specific objective

To explore the role of Agricultural extension service to develop dairy farming of the study area.

To examine major constraints of dairy farming of the study area

To access dairy product marketing system of the study area

To explore the effect of dairy farming system on the dairy farming of the study area

1.5 Significance of Study

The study is targeted to explore the factors affecting dairy farming of the study area which can help us to understand how problem are minimized to increase the dairy farming sector of the economy. It helps various developmental partners who do participate in rural economy development related with livestock sector. The finding of this study is useful to potential investor to make them entering and investing in the dairy farming. It does also help local government to examine the support they have in the dairy development of the study area.

Besides, this study is helpful to make further studies to this area and other parts of the country.

1.6 Scope and Limitation of Study

The scope of the study is limited to access factor affecting dairy farming at Muger and around surrounding five rural kebeles. The area has believed to have huge demand for dairy product with the existence of three cement factory and various individuals related with cement transportation. Though the researcher has made maximum effort to maximize the quality of the study, it is limited by data to be collected from a few selected model farmers which are believed to be better in dairy farming in the rural kebeles.

CHAPTER TWO

LITRATURE REVIEW

Introduction

This chapter presents the literature review on dairy farming system, marketing system, handling process, demand for dairy product , constraint of dairy farming and the demand that country have for the future production of dairy product and the others. It summarizes the information from the other scholars who have carried out their research in the related field of study. It first presents theoretical review, empirical evidence from various researcher and conceptual framework.

2.1 Theoretical Review

The research has aimed to investigate factors affecting the dairy farming of the country. It is based on the theory of herd management and theory of farm diversification.

2.1.1 Theory of Herd Management

Herd managers know that a dairy herd needs understanding the effects of controllable factors, such as feed in both quantity and quality and disease control measures, and also uncontrollable factors such as the effect of whether on animals, crops and as well as political and market condition. The combination of these constitutes a complex biological and economic system and will have a direct effect on the expected return (Enevoldsem et al., 1995). This return depends directly on milk revenue which constitutes 90% of the total dairy farm revenue (VandeHaar, 2006). According to VandeHaar (2006), dairy farming is a function of three capacities. The first one is capacity of the mammal's glands to produce milk. The second is the capacity to convert feed into milk and the third is the capacity of the farmers to manage and breed the animals.

2.1.2 Theory of Farm Diversification

Diversification is a strategy that taking an organization away from both its existing market and its existing product (Johnson et al., 2008). In terms of farm diversification, this relates to exploitation of income generation opportunities that can support the income of the farm household and in turn the viability of the agricultural business (Boswah and Mcele, 2009). In recent years diversification has become a popular strategy for those farmers who want to survive

and be successful in the changing economic environment in practice, however, a farm diversification are not always successful and it would appear that research is required to both understand the issue better and to improve the rate of success. Therefore, the success of diversification is determined by the measure applied and it is dependent on business objectives.

2.2 Empirical Review on Dairy Farming in Ethiopia

There are few literatures on dairy farming in the country. However, in this paper, the researcher has attempted to review the available findings.

2.2.1 Dairy Farming System in Ethiopia

Livestock are raised in all of the production systems of Ethiopia by pastoralist, Agro Pastoralist and crop farmers (Ahmed et al., 2003). Milk production systems can be broadly categorized in to urban; per urban and rural milk production system (Tsehay, 2001)

2.2.1.1 Rural House Hold Dairy Farming Systems

According to Dereje at el (2005) rural dairy system is part of the subsistence farming system that contribute up to 98%of the total milk produced in Ethiopia and includes Pastoralist, Agro pastoralist and mixed crop livestock producers. The system is not market oriented and most of the milk produced in this system is retained for home consumption. The demand for milk by the family and its neighbors, the potential to produce milk in terms of group, and access to a close market is determinant for the level of extra milk (Getachew, 2003). By using the old system, the extra milk is processed into by-product such as butter, ghee, ayib and sour milk which are usually marketed after the households satisfy their needs through the informal market (Tsehay, 2001)

2.2.1.2 Per-Urban Dairy Farming System

Per urban dairy farming systems have an access to grazing land and practice mixed crop-livestock farming, which produces part of the remaining feed in the form of crop(Azezeet al.,2013) the sector owns improved dairy stock and the main objective is to get additional cash income from milk sale. This farming system is now expanding in the highlands among mixed crop-livestock farmers, such as those found in Selale and Holeta and serves as the major milk supplier to the urban market (Gebrewold et al., 2000).

2.2.1.3 Urban Dairy Farming System

Urban dairy farming system in general is located in cities and towns and focuses on production and sale of fluid milk, with or no land resources mostly for specialized dairy production under stall feeding conditions. Besides, the herd cattle is dominated with improved /cross breed dairy cattle and the production system is market oriented and milk production is for sale. Compared to the other system cows have relatively better access to inputs such as food and services such as artificial insemination(Azage at al.,2013)

2.2.2 Economic Importance of Dairy Farming in Ethiopia

All lives stock currently support and sustain livelihoods for 80% of all rural poor. The ministry of Finance and Economic Development (MOFED) estimated the gross value of ruminant livestock production in 2008/2009 at birr 32.64 Billion. The estimated includes the value of livestock off-take (9.653 Billion) milk and milk product (19.471 Billion) and other product such as milk and milk products contributes 63% to gross value of ruminant livestock production.

Livestock, milk and milk products play an important role in the food security status in both highland and pastoral communities. In pastoralist regions, livestock are owned by a large percentage of the population that woman play large role in decision making regarding the processing and marketing of milk (Tadess Mihiret, Fentahun Mitiku and Tadesse Guadu, 2017)

2.2.3 The Demand for Dairy Product in Ethiopia

The demand for dairy product is rising in Ethiopia. Prices are being pushed up as demand is met by imported products, particularly powered milk. This is resulted from the growth of the population of country estimated to 110 million people. This creates huge market opportunity for milk and milk products (Azage Tegegne, 2018).

The country produces about 4 billion liters of milk per year and per capital consumption is very low, estimated at about 20 liters, though rising consumption levels in Addis Ababa have brought it to about 40 liters. The food and agricultural Organization recommends that per capital consumption of milk be about 200 liters, meaning 22 billion liters of milk is required. At the current production rate, there is an annual shortage of about 18 billion liters (Azage Tegegne, 2018).

Besides, there are factors which can affect the demand for milk and milk products, including consumer preference, consumer income, population size, price of the product and price of the substitute goods. The relationship of demand with price is negative, which means as price increase, the demand for milk will decrease (Getchew and Gashew, 2001). In other ways, dairy products are not consumed during fasting seasons and also on Wednesday and Friday among the followers of Ethiopian Orthodox Church. There are about 200 fasting days per year in the Ethiopian Orthodox Church and most of the milk during this period is processed into ayib and butter for latter sales and consumption (Taungkan Emerson and Jabbar, 2002)

2.2.4 Milk Handling and Processing in Ethiopia

The major factors affecting the validity of dairy products are related to the type and availability of milking utensil as well as frequent of clearing utensils. The majority of urban producer use plastic milk utensils and some rural producers use clay pots and plastic, which few farmers use locally made grasses (Sintayehu at el., 2008). Most urban producers usually clean their milking utensil before and after milking. However, nearly half of rural producers are practice once in two days or once in a day (Alganesh, 2002)

Most farmers clean milk utensils with cold or hot water and smoking with different aromatic plants such as Woira in both urban and pre urban productions system. Cleaning the milk utensils using these methods are believed to improve the quality and taste of milk and milk product and expand the life time of dairy products. In urban and pre urban production system, there are only about 23% of the producers which clean milk utensils using water and detergents. However, mostly at the pre urban farms the water used especially from rivers for cleaning was uncertain quality. Due to this, the cleaning of udder and milking utensil might at danger. But, in rural dairy farming system, traditional home processing method is the dominant processing methods and they process fresh milk into fermented or sour milk, butter and local cheese (Azege et al., 2013)

Related with the country hot climate, unless the milk is cooled, during this condition the raw milk is mess up. In some part of the rural area the cooling systems are not practicable. Besides, there are things like poor handing, pollution; technology applied which has low level in the conservation of milk to expand its shelf life and lack of market which create losses in the post harvest (Getachew, 2003).

2.2.5. Marketing System for Dairy Product in Ethiopia

Milk and milk product are marketed through both informal and formal marketing system. Within informal marketing system, producers sell to consumers directly or to unlicensed traders or retailers. This kind of activity is predominant in the rural dairy production system when price is mainly set through negotiation between the producer and the buyer. Within the formal marketing system, there are various cooperatives and private milk collecting and processing plants that receive milk from producers and channel to consumers, caterers, supermarket and retailers. This system is well practiced in urban and pre urban dairy system of shashemene, Dilla, although the number of cooperatives is few and its performance is low (Woldemichaeal, 2008).

Within the entrance of private sector in the dairy processing industry during last 20 years, the formal market appears to be expanding in Addis Ababa and Dire Dawa in the East part of the country (Ahmed et al., 2003). There are two different milk marketing methods use by the dairy producers in the rural low land agro pastoral system of Meiso. These are traditional milk association and individuals sellers. Traditional milk producers association are locally known as Faraqa Anani, which include woman in its group who have milking cows or camels (Azege et al.,2013)

Milk marketing group can be defined as a group of smallholder farmers who individually produce at least one liter of saleable milk and are willing to from a group with the objective of collectively processing and marketing milk (Tsehay, 2002). Berhane and Workineh (2003) indicated the importance of involvement of the government of India at every step of the development for expansion of dairy cooperatives in the country for the success of dairy and suggested that kind of pattern of dairy development can be emulated at least around Nazareth, Dire dawa, harar, Bahir Dar, Jima and Asella.

Improved milk marketing is served as an incentive for farmers to produce more. It can motivate farmers to produce more, increase farmer's income generation and living standards and create an employment opportunity in rural areas (Asamniew, 2007). Generally, there is no well developed dairy marketing in system in Ethiopia. This is reflected where only 5% of milk produced in rural areas is marketed as liquid milk (Getachew, 2003). This is due to presence of limited marketing infrastructure such as transport.

2.2.6 Constraint of Dairy Farming in Ethiopia

Among the constraint affecting dairy farming potential of dairy cattle in the most part of Ethiopia were shortages of grazing land, diseases and parasites, inadequate veterinary service, low milk giving of local cattle, inadequate artificial insemination services, and shortage of farm labor. The total dairy farming are affected by the interaction of these constraints (Assaminew and Eyassu, 2009)

The dairy production system is highly constrained by shortage of feed in terms of quality and quantity. In sufficient supply of quality feed is the main things restraining dairy efficiency in the region (Azege et al.,2013). Feed based on hay and green plant are either absent, inadequate quantities, or when exist are low relating to diet quality (Ahmed et al., 2003 and woldemichael.2008). It contributed to the low milk and meat yields, high death of young livestock, the time interval to give birth will longer and low animal weights (Ahmed et al, 2003).

The other constraint of dairy farming is genotype related constraints and reproductive wastages. This is raised from those indigenous cattle breeds are the dominant source of milk and milk product. The amount of cross breed cows is very low and is mainly concentrated in and around major urban and pre urban centers. These cattle breeds are mainly characterized as multipurpose animals and managed in low input production system. These livestock have been naturally selected for adaptive and not for functional traits and they are inherently low milk producers (AzegeT et al., 2003)

Among the total cattle population that the country own, 99% of genetic makeup of our dairy cattle are indigenous cattle that are adapted to feed and water shortages, diseases challenges and harsh climates. The productivity of indigenous cattle believed to be poor even if no practical recording scheme has been used to judge their merit (Ahimed et al.,2003). The main problem of milk production in the country is that indigenous cattle which gives to low milk output. Cross breeding has been practiced with encouraging results. However, a strictly controlled breeding program has not been practiced. Milk production is as low as .5 to 2 liters per day over lactation period of 160 to 200 days (Tesfaye, 1990).

Water is also the important constraint during dry seasons. To deal with the problem, the water harvesting practice is not developed in the areas yet (Azege et al., 2000). Beyond that, the

shortage of water is highly make worsen through lengthened dry seasons and repeated drought. The traditional practice of watering livestock every two days and every three days during the dry and wet season respectively for cattle cannot adequately concentrate on the productivity of milk in the areas (Adane, 2009). Accordingly, the watering rate of occurrence of different types of livestock in various rural kebels have suggested by the seasonal availability and distance of the water sources (Kedija, 2007).

Shortage of land and poor access to services are also among the constraint of dairy farming. According to Azaze Tadesa et al (2003) shortage of land for dairy farming for feed production is major problem in urban and pre urban dairy farming system of Shashemene and Dilla milk shed. Dairy system under this system is under tremendous pressure to expand dairy mainly due to rapid urbanization and population growth. According to Abebe B et al (2014) funding indicated most of the dairy producers; milk production is constrained primary by shortage of land for grazing and cultivation of improved forage crops.

Poor access to services such as extension, animal health, credit and market information negatively affected dairy production, since service delivery in the studied areas is not as effective and not up to the satisfaction of dairy farmers because the service rendered are very limited, untimely and irregular(Azaze T et al., 2013).

The study done by Adebabay (2009) analyzed factor affecting milk production and marketing system in Bure District of the Amara National Regional State. A single visit multiple subject survey was used to collect data on milk production and marketing systems. His finding indicated, main problems of milk production and marketing were lack feed, disease outbreak, lack of improved cattle breeds and distance to marketing points. But, he failed to take the milk nutrition, product marketing, input delivery and service and scaling up the feeding package into consideration in their study.

The study done by Alganesh., et al, (2003), which is conducted on challenges and opportunities of milk production potential in Western Oromia. Sevens town, namely Ambo, Nekemte, Gimbi, Dambi Dollo, Badelle, Mattu and Jima were purposively selected on the basis of their significance in the dairy production of the region. Lack of improved dairy cattle and inadequate

AI service shortage of feeds and its cost, disease challenge and price fluctuation in milk and milk products are some of the bottlenecks that require support from various stake holders.

Study done by Azage at el., (2013) on small holder dairy production and marketing systems in Ethiopia: Improve productivity and market success (IPMS) experience and opportunity for market oriented development. These study areas include various district such as Bure, Fogera and Metema of Amara Region State; the district of Shashemene and Meiso in Oromia Region State; towns of Hawasa , Dilla and Yirgalem of South Nation and nationalities people(SNNP) Regional State. The study areas were selected strategically to represent different Agro-Ecological from the three regional states. The data collection procedures for the studies involved were a combination of methods including review of secondary sources, diagnostic survey, participatory rural appraisal (PRA) focus group discussion, rapid market appraisal (RMA) monitoring and observation. Shortage of land, shortage of forage seed and planting materials, genotype related constraints, poor access to inputs and services, disease and parasites, marketing problem and waste disposal problems were identified.

2.2.7. Production Resource

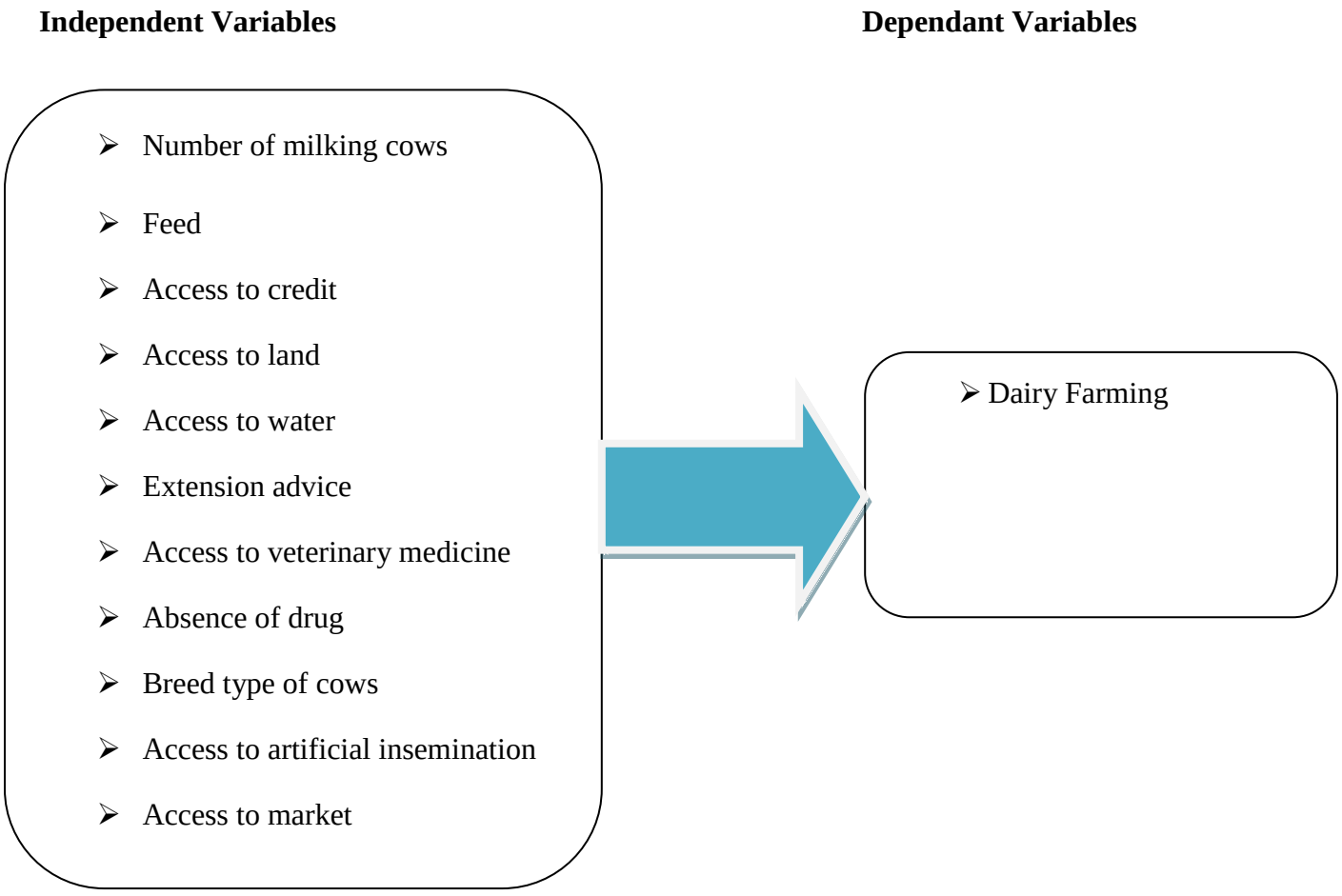
Dairy product production resources are those resource used in converting production input such as milking cows, labor, fodder into output in terms of milk and livestock related. The production of milk uses certain production technology such as cow housing feeding technologies as well as milking and cooling processes. These resources are expensive and out of reach for large and small farmers hindering their capacity to produce. Dairy farm production use similar technology but differ in farm management and environment, economy of scale and farm efficiency (Lien and Haraker, 2010).

Among the feed resource for dairy animals across all the different production systems in the study area include natural pasture, grass lands, crop residuals, non convectional feed resource and crop after math. The contribution of these feed resources however depends up on the agro-ecology, the type of crop produced, and accessibility and production system. Although, information was not complete, dairy producers in the pre urban and rural systems across all the production system ranked grazing natural pasture at their first priority followed by crop residuals. In the rural low land dairy system of Meiso, most farmers about (80%) practice over sowing their farm land with maize or sorgum and then thin out the young plants at knee height

stage locally known as Chinki to feed vulnerable and productive classes of dairy animals(Azage T et al.,2013)

2.3 Conceptual Framework

Conceptual frame work of this study shows that various independent variable affect dairy farming. These independent variables consist of number of milking cows, feed, and access to credit, access to land, access to water, extension advice, absence of drug, breed types of cows, breeding system and access to artificial insemination. The study assumed that independent variables have an influence on the dairy farming. These variables are selected after literature review which depicted that out of many other factor that affect dairy farming, these are the most important and relevant ones to the study. The framework assumes that dairy farming is a net result of the positive and negative effects exerted by all the independent variables on dairy farming.



CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

In this chapter, all necessary procedures that were followed in under taking study were addressed. These were research design, population, data type and source, data collection instrument, sample size, sampling technique and method of data analysis.

3.1. Description of Study Area

The study was undertaken in Adea Berga Woreda, in Muger Town and surrounding of 5 (five) rural kebeles such as Ula Gora, Chancho Birate, Reji Mekoda, Deku Kersa and Biyo Wegid. This study area is located around 86 Km from the city of Addis Ababa. The total population of the study area estimated 1821 house holders who perform dairy farming with cereals production of whom 35% orthodox, 45% protestant and 20% is other religious followers(Adea Berga Bureau of Administration).

Currently, there are three cement factories in the study areas. These are Dangote Cement Bedrock cement, and Chemical Industry Muger Cement Enterprise. These factories have opened job opportunity directly and indirectly for more than 7063 individuasl. This create huge market for dairy product for the small farmers in the town and nearby rural kebeles (Adea berga bureau of Administration).

3.2. Research Design

The research Design that was used is descriptive research design. The purpose of descriptive research design is to describe the state of situation as it is at present. Descriptive researches own the process of collecting data in order to answer concerning the current status of the subject in the study. Descriptive research was used to obtain information on the current factors affecting dairy farming in the study area. This type of design was preferred since it allows the use of descriptive statistic to describe the information or data collected.

3.3. Data Type and Source

The study used both primary and secondary source of data, which were collected through questionnaires that were performed through sending questioners to the selected farmer of Muger Town and to the selected model farmers which are better in dairy farming from five rural kebeles after they were informed the purpose of study and clarification was made about the study. The secondary data were collected from the thesis and from local administration. The questionnaires were collected immediately or after one or two days depend on the distance where the farmers live since questionnaires was distributed. Both qualitative and quantitative data were used in the research to answer research questions. Data collected through open ended questions were analyzed qualitatively while data collected through closed ended questions analyzed quantitatively.

3.4 Target population

The population that is planned to be studied is known as target population. The target populations of this investigation are small dairy farmers selected from all dairy farmers found in Muger Town and surrounding five rural kebeles. The total populations considered in this investigation are about 1821 dairy farmers' households.

3.5 Sample Size Determination

According to the Gupta, (2002) appropriate sample size depends on various factors related to the cost of doing assessment, time it take, and level of accuracy demanded of the matter under investigation. If sample size is very large, it may result in more resource demand when dealing with sample and if the sample size is very small it might be difficult to achieve the objective of the investigation. When we deal with sample, sample error will possible arise because of not studying the whole population. The higher the desired precision or the level of confidence, the larger will be the sample size (Browne, and Star, 1983).

Sample size determination is demanded to make study more viable. In this analysis, researcher proposes (Yemane, 1967) sample size determination formula as the best method of calculating sufficient amount of sample size.

$$n=N/1+N\ (e)^{2}$$

Where N= population n= sample size e= expected error

N= the total population of small holders dairy farming found at mugger Town and around five rural kebels are around 1821. Since the population is more homogenous, expected levels of error is 6.5%

Thus, n= 1821/ $(1+1821(.065)^2)$

1821/8.69

209.55 This is estimated to 210 individual small dairy farmers.

210 Dairy farmers were selected from all kebeles conveniently to the proportion of the population of each kebeles under study. Estimated proportions of sample size for each kebeles are 11.5%. Accordingly;

Table: 3.1.Number of farmers of each kebele

Name of kebele	Number of farmers	Rate	Number of farmers will be selected for investigation.
Chancho Birattie	429	11.5%	49
Biyo Wegidi	312	11.5%	36
Deku Kersa	335	11.5%	39
Reji Mekoda	228	11.5%	26
Ula Gora	425	11.5%	49
Mugger 01	92	11.5%	11

Source: Adea Berga Bereau of Administration for the number of farmers of each kebele.

3.6 Data Collection Instruments and Related Work

The investigator used questionnaire as instrument to collect data about factors affecting dairy farming of the study area. Partially developed, semi structured questionnaires were used to collect data from selected farmers. The questionnaires contain both closed end and open end questions which could help investigator to collect necessary data from respondents. These questionnaires were first being developed in English and then being translated to Afaan Oromo.

After the questionnaires were fully developed and ensured that the questionnaires could help to collect data, the investigator has followed some procedure. The investigator first contacted rural kebele chair Man and their Manager and requested their cooperation to facilitate the situation during questionnaires distribution and collection after they have been told about the research purpose. To reach the farmers who live at various distance, the investigator used the kebeles chair person and kebele's Manager to handle questionnaires distribution and collection jobs after they were trained and understood enough about the subject to teach others the purpose of research, how to fill and collect it timely. For others selected farmers, the investigator handled questionnaires distribution and collection by its own through cooperation with Kebele chair Man and kebele Manager after the investigator contacted the respondents and informed them about the purpose of the research and requested their cooperation to fill it before distributing questionnaire. Besides, the investigator informed his respondents how they fill the questionnaire, confidentiality of their information and inform them to fill questionnaire honestly and return it timely.

3.7 Method of Data Analysis

The quantitative data collected from respondents were analyzed through descriptive statistic technique. This method of data analysis includes the use of percentage and frequencies. Besides, collected data have been analyzed and expressed in table. Those data collected through open ended questions will be analyzed through narrative technique to analyze qualitative data.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

This chapter presents result and discussion of the study area to answer the research question. Data analysis was done through descriptive statistics presented in the form of frequency, percentage and mean. Among of the 210 questionnaires distributed 201 were filled and retuned for research analysis.

4.1. Responders Characteristic

When we have made consideration to the sex characteristic of our respondents, 97% are male while 3% of the respondents are only female. This is resulted from that only house holders are selected for this investigation, which are mainly dominated by male in the country context.

The marital statuses of the selected respondents are estimated that 97% are married while 3% are only widow. This implies that married people are highly involved in dairy farming than other activities.

The majority ages of the respondents are in the age bracket 41-50 years which is about to 47.7%, followed by above 50 years which is about to 38%. Few numbers of respondents are also from age bracket of 30-40 which is about to 14.4% while no respondents from the age bracket of 20-30 years. This result, therefore imply that middle class age and old age people are actively involved in dairy farming.

When we see years in the dairy farming of the respondents, it is understood that the majority 65.17% have more than ten years in dairy farming, those farmers who have 6-10 years is 28.3% when those with 1-5 years is 6.4% only. This indicated that majority of the farmers had been practicing dairy farming for a long time and information they held is adequate enough to address the objectives of the investigation.

Table 4.1 Respondents characteristic

		Frequency	Percent
Age of the respondents	20-30	0	0
	31-40	29	14.4
	41-50	96	47.7
	Above 50	76	38
Total		201	100
Sex of the respondents	Male	195	97
	Female	6	3
Total		201	100
Marital status	Married	195	97
	Divorced		
	Single		
	Widow	6	3
Total		201	100
How long have you been practicing dairy farming	1- 5years	13	6.4
	6- 10years	57	28.3
	>10	131	65.17

Source: Own Survey, 2018

4.2. Dairy Production System

Depend on the location, dairy production system can be classified in to three, urban, per urban and rural dairy production system. In the study area, dairy production system can be classified into two namely, urban dairy production system and rural dairy production system. Urban production system is within Muger Town where the main purpose is to sell raw milk to generate income. This is mainly dominated by cross breed cows. Rural dairy farming system has dominated the rural five kebeles under study area. This farming system mainly depends on the indigenous cattle for their dairy production. Majority of the respondents (94.5) are practicing rural dairy farming activities when small numbers are practicing urban dairy farming among respondents of the study area.

Table: 4.2 Milk Production Systems

		Frequency	Percent
Milk production system	Urban	11	5.5
	Rural	190	94.5
Total		201	100

Source: own survey, 2018

4.2.1 Cattle Size and Breed Type

In the study area the numbers of the cows that the respondents own are mainly between 4-7 cows. About 27.8% of the respondents respond that the basis of their dairy cows are from their family while 51.2% of the respondents respond that the basis for their dairy cows are from purchasing and 20.8% respond that both heritance and purchasing.

In Ethiopia local cattle breeds are the dominant source of milk and milk product (Azege et al, 2013). This resulted that among 34.5 million cattle population of the country has, less than 1% are crossbred dairy cows (Muriuki and Thorpe, 2002). In the study area about 91% of the respondents have own local cows, 5.5% of the respondents have own cross breed, 3.5% of the respondents have own both local and crossbred cows while no respondent has own exotic cows. This implies that many farmers are currently raring and depending on local cows for their dairy farming in the study area.

In relation to the profitability of the different breeds of the cows, all respondents respond that cross breed and exotic cows are more profitable than local cows. This is due to the cross breed and exotic cows have long lactation period and higher amount of milk relative to local breed, accordingly production will increase and it shows that high production will occur if there is high number of crossbred as they are giving high milk per day than local breed. However, the high price of the crossbred and exotic cows, land constraints, low quality and quantity of feed and expected disease resistance of the local cows are among the reasons why many respondents keep local cows.

Table: 4.3. Cattle size and breed type

		Frequency	Percent
Cattle population	1-3 cows	63	31.3
	4 -7 cows	121	60.
	8 and above	17	8.4
Total		201	100
Basis of your ownership	Purchase	103	51.2
	Heritance from family	56	27.2
	Both	42	20.8
Breed type	Local cows	183	91
	Crossbred	11	5.5
	Exotic	0	0
	Other combination	7	3.5
Total		201	100

Source: Own survey, 2018

4.2.2 Animal Breeding System of the Study Area

Though, AI services has been expanding to different parts of the country, its efficiency and effectiveness of AI service is reported to be poor (Adebaby, 2009). Besides, this technology is important to improve the genetic potential of the indigenous animals and prevent transmission of disease, which otherwise would be the case during natural mating (Azage et al, 2013).

In the study area, no respondents have access to AI service and they mainly depend on the Bull for their animals breeding system. This shows that farmers of the study area do not have sufficient alternative for their animal reproduction, which has negative effect on crossbreeding of

the cows and finally affect dairy farming of the study area. This also shows that government does not exert sufficient effort to make AI known to the area and for the development of dairy farming and its improvements in this regard.

Table.4.4 Animal breeding system of the study area

		frequency	Percentage
Means of the animal reproduction of the area	Artificial insemination	0	0
	Bull	201	100
	Both	0	0
Total		201	100

Source: own survey, 2018

4.2.3 Feeding System of the Study Area

Animal feed mainly based on fodder and grass are either not available in sufficient quantities or when available, it has poor nutrition quality. These challenges resulted in low milk and meat yields, high mortality of young stocks, longer partition intervals, and low animals weight (Ahmed et al, 2003). In this regards, feeding is the main determinant in the dairy farming activities. Farmer gets feed for their cows from different sources. About 17% of the respondents get feed for their cows by purchasing from other farmers in the area, 39% of the respondents get their feed for their cows from their own land and through harvesting by their own and about 44% of the respondents get feed for their cows from their own land and through purchasing it.

The major reason why many farmers purchase the feed is that they do not have enough land size for harvesting or access to pasture land.

In the study area, farmers are using different types of feed namely: roughage, pasture, hay (Dirqosh), crop residuals and atela. Mainly, respondents use various feed types in combination rather than using one type of feed. This is shown when about 64.3% of the respondents use combination of feeds types namely, pasture, hay and crop residuals, 8.5% of the respondents use combination of feed type of pasture, hay, and roughage and 21.% of the respondents use hay, pasture and atela. The same conclusion was given by (Assaminew and Eyasu, 2009) who found in the area of Bahirdar Zuria and Mecha Woreda that the major sources of feed for cattle in the study area were natural pasture, hay and crop residuals.

Feed shortage is the constraint of dairy farming activities. In the study area, about 71% of the respondents respond that they have faced shortage of feed for their cows. This shortage of the feeds is mainly severed from February to May, which is a dry season of study area. Among the reason of the feed shortage of the study area are seasonality of rain fall, lack of reservation of feeds and cost of feed is so expensive. This finding is similar to the finding of (Sintayehu, at el, 2008)who found in the Shashemene-Dilla inadequate supply of quality feed and low productivity of the indigenous cattle breeds are the major factor limiting dairy productivity.

Table: 4.5 Feeding system

		frequency	Percent
Source of feed	Purchase	34	16.9
	Self	79	39
	Both	88	44
Total		201	100
Feed type	Pasture, Hay and Roughage	17	8.5
	Pasture, hay and crop residuals	129	64
	Hay , Pasture and atela	42	21
	Some other combination	13	6.5
Total		201	100
Feed shortage	Yes	143	71.2
	No	58	28.8
Total		201	100

Source: own survey, 2018

4.3. Dairy Marketing System

Dairy product such as milk, butter and cheese are used as diet in many part of the large Ethiopians. They consume dairy products either as fresh milk or in fermented or soured form (Getachew and Gashaw , 2001) . In the country, it is expected to increase dairy production sector for the coming ten to twenty years due to large potential for dairy development in the country, with expected growth in general income and increase in urbanization (Mohammed et al, 2004).

In many part of the country, many farmers are selling their dairy product to generate income used for various personal activities. In the study area about 57% of the respondents are selling butter only to generate income, 27% of respondents are selling butter and cheese, 8.5% of the respondents are selling the raw milk while 7.5% do not respond may be they produce dairy farming for their family feeding purpose. Farmers generate income by selling butter and cheese is about to 84%. In this study area butter is the most tradable dairy product especially when we compare it with raw milk. In relation to the price of a liters of milk, few farmers are only respond that the price is about 25-30 birr depend on the seasons while other farmers do not know the price since they do not sell the product. Respondents also make milk soured and also consume by them self for the unsold raw milk.

In the study are there is period when the farmers receive low price for their dairy products. This is shown that about 73% of the respondents respond that there is a period when they receive low price for their dairy products while 27% respond that they do not receive low price for their dairy products. Among the respondents who have said that they receive low price for their dairy products, about 76.2% respondents respond that they receive low price during wet season (June to August) while those who receive low price during fasting months are about 23.8% of the respondents.

The decreases of the price of the dairy product of the study area are mainly related with the availability of feeds for their cows which are resulted in increase of the productivity of dairy products of the area under study. In the study area, a few respondents have responded that they receive low price during fasting months. This finding is different from other investigator, when the problem of dairy farming of different parts of the country was price declining during fasting months. This is resulted from that the most tradable dairy product in the study area is butter which more durable compare to others and the religious composition of the area where 45% are

protestant, 35% orthodox and 20% are others like wake feta (Adea Berga Bureau of Administration). None orthodox religious followers consume dairy products across the year.

Table: 4.6 Dairy marketing systems

		Frequency	Percent
Dairy product selling categories	Selling of butter only	114	57
	Raw milk	17	8.5
	Selling of butter and milk	56	27
	None	15	7.5
Total		201	100
Marketing problem	Yes	147	73
	No	54	27
Total		201	100
Months of problem	Fasting months	112	76.2
	Wet months(June To August)	35	23.80
Total		147	100

Source: own survey, 2018

4.4 Extension service

Although most dairy farmers get information on dairy cattle management practices, it was not supported with practical skills and demonstrates due to absence of demonstration sites. This extension services has not satisfied the needs of farmers in terms of providing need based service, handle on training and subject matter coverage, tailed to the different dairy production systems and market orientation (Azage at el 2013). In the study area all respondents (95% among total respondents) from rural kebeles respond that they have Agricultural developmental agents at their kebele. Among the total respondents of the study area only 17.4 % of the farmers reported that they have received extension advice related with their dairy farming activities.

In the study area, about 67.8% of the respondents have received extension service on other farming activities. Among them 54.2% have received extension service on the utilization of fertilizer, 8% of the respondents have received on the bee keeping activities while 5.5% of the respondents have received extension service in various farming activities. When compared two situation, means number of respondents who have received extension advice on dairy farming and those received on the utilization of fertilizer, it imply that dairy farming extension activities are much secondary (low attention are given) to the developments of cereals farming activities of the study area.

Table: 4.7 Extension service

		Frequency	Percent
Do you have agricultural developmental agent at your kebele?	Yes	190	94.5
	No	11	5.47
Total		201	100
Number of the respondent who have received extension advice on dairy farming?	Yes	35	17.4
	No	166	82.5
Total		201	100
Number of respondents who have received extension advice on other farming activities?	Yes	138	67.8
	No	63	31.4
Total		201	100
Received extension advice other than dairy farming.	Bee keeping	16	8
	On usage of fertilizer	109	54.2
	Other activities	11	5.5
Total		136	67.8

Source: Own Survey, 2018

4.5. Access to Input

4.5.1.Access to land

Land is among important inputs for dairy farming activities. In the study area, the majority (78.6 %) of the farmers respond that they do not have enough land for their dairy farming and the other remain (21.4) of the respondents said that they have enough land for their dairy farming. This implies that small farmland size is problem and constraint of the expansion of the dairy farming of the area under study. This finding is similar to the finding (Woldemichael, 2008) who found in the area of shashemene , Hawasa Milk Shed, that shows shortage of land for dairy farming and feed production is the major problem in urban and pre urban dairy farming system.

Limited access to farm land affect dairy farming in many ways. When number of cows increase, the demands for land also increase. As it is discussed in the above section of feeding system, the major source of feed are both purchasing and self and the price of feeds are expensive. Thus, land is important for seeding different cows feed.

Table: 4.8 Access to land

		Frequency	Percent
Access to enough land	Yes	158	78.6
	No	43	21.4
Total		201	100

Source: Own Survey, 2018

4.5.2. Access to water

Water is the most basic elements for dairy production activities. Even if all necessary inputs are available for the milking cows, having sufficient water is important for the dairy farming. In the study area the majority of the respondents 63.7 have accessed to sufficient water for their milking cows while the rest 36.3% do not have accessed to sufficient water. The majority 86.1% have got their water demand from river when 5.5% of the respondents have got their water from pipe water and 8.46% have get their water demand from the pond water. Though, the river water is not pure as expected compared to pipe water for dairy farming, the area under study is rich enough in water resource.

Table: 4.9 Access to sufficient water and source

		Frequency	Percent
Access to water	Yes	128	63.7
	No	73	36.3
Total		201	100
Source of water	Pond water	8.46	8.46
	River water	173	86.1
	Pipe water	11	5.5
Total		201	100

Source: own survey, 2018

4.5.3. Access to veterinary medicine

Animal disease is among main constraint of the dairy farming activities. It affects reproduction of animal, milk production, milk quality and cause mortality and morbidity (Azege et al., 2013). In relation to the accessibility of veterinary services of the study area, about 59.2% of the respondents have accessed to veterinary services while 41.9% do not get these services. Among the respondents who have an access to veterinary services, the majority (89.2%) get the service from government while few of them (10.8%) get a service from private vendors. These show that the government gives attention to improve the dairy farming by making veterinary service available to the study area.

About 41.9% of the respondents do not access to veterinary service when demanded. Among problem listed by respondents are, distance from veterinary health station, absence of drug, none functionality of veterinary laboratories, lack of skilled animal health technician and absence of technician during working time.

Table: 4.10 Access to veterinary medicine

		Frequencies	Percent
Access to veterinary services	Yes	119	59.2
	No	82	40.8
Total		201	100
Veterinary service provider	Government	106	89.1
	Private	13	10.9
Total		119	100

Source: own survey, 2018

4.5.4. Access to credit

Access to credit is the among access to financial resource used to invest on dairy farming and to expand dairy farm operation, which is essential to the commercialization of small holder dairy farming (Ageze, et al., 2013). In the study area, only 26.8 respondents think that they will get credit while the majority (73.2) respondents believe that they do not get credit for their dairy farming activities. This is resulted from that the financial institutions demand more formal approach and request collateral to secure their loan which is mainly not available with the rural farmers.

Among the respondents who think that they get credit service, about 42.5% have already accessed to credit service from different organization. Only one individual farmer has got credit service from local bank while many borrowers have got credit service from Oromia Saving and Credit Association.

Table: 4.11 Access to credit

		Frequency	Percent
. Do you think you will get credit service for your dairy farming?	Yes	54	26.8
	No	147	73.2
Total		201	100
Accessed to the credit service	Yes	23	42.5
	No	31	57.5
Total		54	100

Source: own survey, 2018

4.6. Continuity and Availability of Adequate Income in Dairy Farming

The majority (95.5) of the dairy farmers of the study area are willing to continue in the dairy farming activities for different purposes while only 4.5% of the respondents are not willing to continue in dairy farming activities. Among the reasons why majority of the respondents are willing to continue in dairy farming are: dairy farming are way of life and career pass for many farmers, continuously increment price of dairy product, introduction of crossbred cows to the area, population growth and change of the living standard of the societies. The other reason is that the dairy farming is profitable sector. This is resulted from that the demand for dairy products are expected to increase, the profitability of the dairy farm sector will also be expected to increase. In the study area, livestock are reared for their multipurpose use. Among them are for selling to generate income and to get youngsters livestock which may be used for plough.

In relation to the income soundness of the respondents of the study area, the majority (75.6%) do not have enough income to perform their dairy farming activities while 24.4% of the respondents have enough income to perform dairy farming. This imply that farmers need various support such as facilitating credit availability and extension advice for the improvement of their dairy farming such as owning cross breed cows.

Table: 4.12.Continuity and Availability of Adequate Income in Dairy Farming

		Frequency	Percent
Continuity with dairy farming	Yes	192	95.5
	No	9	4.5
Total		201	100
Availability of enough income for dairy farming	Yes	152	75.6
	No	49	24.4
Total		201	100

Source: own survey, 2018

4.7. Major Problem of Dairy Farming of the Study Area

There are various constraints of dairy farming of the study area. The major identified are lack of access to enough land, shortage of feed, high cost of feed, problem of reservation of feeds, absence of AI (artificial insemination), high price of cross bred cows, inadequate access to extension advice, lack of credit accessibility, expected disease resistance of local cows and when available with small amount and problem of drug absence with veterinary service. Besides, dairy farming has been affected by the prevailing rural dairy farming system in which local cows are the main source of dairy product and the system that the farmers are mainly rely on traditional source for their feeding their cows.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The dairy farming of the study area is not developed to the expected level. Rural dairy farming system has dominated the dairy farming system of the area under study. Farmers are rearing local cows for the production of dairy products. High price of the cross breed and exotic cows, land constraint, absence of AI, low quality and quantity of feed and expected disease resistance of the local cows are among factors that make farmers to keep local cows. Dairy products are found to be a good source of income to the farmers of the study area. Among the dairy products, butter is the most tradable dairy product of the area. In this study area, there are problem of getting extension advice in dairy farming. Majority of farmers have received extension advice on the utilization of fertilizers. This implies that dairy farming activities are much secondary to the cereal farming activities of the study area.

Generally, the study has identified various factors that are affecting dairy farming of the study area. The major factors are including shortage of feed, inadequate land, inadequate extension advice, low access to credit, low knowledge of preserving feed, absence of drug, high price of cross breed cows, and absence of AI and expected disease resistance of local cows.

5.2. Recommendation

Depending on the result of the study, the following recommendations are forwarded.

- Detail awareness creation should be necessarily given on the benefits of the cross breed and exotic cows against local cows.
- To decrease feed shortage mainly during dry season, sowing improved animal feed through irrigation and improving feed storage system.
- Extension advice on dairy farming should be given through aligned it with cereals farming.
- Facilitating credit services to the small farmers which can enable them to purchase cross breed cows.
- Extensive awareness creation should be given to the farmers on the importance of dairy farming to generate enough income and to make dairy farming their major activities rather than secondary to the cereal farming.
- To improve small farmer's confidence on veterinary service, deploying right technician and avail various drugs to place should be necessary to make farmers take risk of purchasing exotic and cross breed cows.

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Appendixes

Addis Ababa University

College of Commerce

Department of Project Management

Master of project Management

Questionnaire

This questionnaire is designed to collect data to establish the factor affecting dairy farming in Ethiopia in case of Muger Town and surrounding five rural kebeles. The data shall be used for academic purpose only and it will be treated with confidentiality it deserves. Your participation in facilitating this study will be highly appreciated.

Kindly encircle to the correct answer or supply the required information where needed, please specify and elaborate it.

Thank you for your cooperation

I. Respondents Characteristic

1. Sex of Respondents

A) Male B) Female

2. Age of the Respondents

A) 20-30 B) 31-40 C) 41- 50 D) above 50

3. Marital status

A) Married B) single C) widow D) Divorced

4. How long have you been practicing dairy farming?

A) 1-5 years B) 6- 10 years C) above 10 years

II Milk production system

1. What is your dairy farming system? ----------

2. How many milking cows population do you have?

A) 1-3 cows B) 4- 7 cows C) 8 and above cows

3. The basis of your dairy cows

A) Purchased B) inherited from family C) Both

4. What is breed type of your cows?

A) Local B) Cross Breed C) Exotic D) specify the various combination----------

5. Which breed type you think that profitable?

A) Local B) Cross Breed C) Exotic

6. If your answer for question number 5 is Cross Breed or Exotic, why you keep local cows for your dairy farming? Mention it----------

7. What method do you use for animal reproduction (Breeding system)?

A. Artificial insemination B) Bull C) Both

8. If you use Artificial Insemination, explain from where you get it?

9. How many liters of milk you get from a dairy cow per day? Specify it----------

10. What is your feed type of milking cows?

A) Roughage B) pasture C Hay D) crop residual D) specify the combination above--------

11. Source of feed your cows

A) Self B) Purchased C) Both

12 Do you have a problem of feed shortage for your milking cows? A) Yes B) No

13. If the answer for question number 10 is yes, which months----------

14. What are the main reasons for the shortage of feed in the area?----------
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III extension service

15. Do you have Agricultural Developmental Agent at your kebele?

A) Yes B) No

16. Did you receive extension advice on how to improve your dairy farming from the agricultural developmental Agent of your kebele? A) Yes B) No

17. Did you receive extension advice on various farming activities other than dairy farming?

A) Yes B) No

18. If question number 17 is yes, on which your farming activities that you have received extension advice from developmental agents) Mention it----------
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III. Dairy product Marketing system

19. When did you start selling dairy product?

20. Which dairy product you sell to get income?

A) Raw Milk B) Butter C) cheese D) other combination if any

21.If your answer for question number 20 is raw milk what is the price of one liter of milk?-------
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22 Is there any period that you receive low price for your dairy product?

A) Yes B) No

23. If the question number 19 is yes, which months?

A) Fasting Month B) other months specify ----------

24. Do you sell raw milk? A) YES B) No

25. If the question number 24 is no, what do you do for unsold milk?

A) Self Consumption B) covert to by product C) specify other----------

IV. Access to service and inputs

26. Do you believe that you have got sufficient water for the milking cows? A) Yes B) NO

27. Select from where you get drinking water for your milking cows.

A) Pipe Water B) pond water C) river water

28. Do you think that the land farm size you have is enough for dairy farming? A) Yes B) No

29. Do you have access veterinary services when demanded? A) Yes B) NO

30. If your answer for the question number 26 is yes, from where do you get service?

A) Government B) Private

31 If your answer for the question number 28 is no, what is the problem? Mention it----------
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32. Do you think you will get credit service for your dairy farming? A) Yes B) No

33. If the answer for the question number 32 is yes, did you have access to credit? A) Yes B) NO

34. If the answer for question number 33 yes, from where did you get the credit?

A) Bank B) Oromia saving and Credit association C) relatives

35 Do you have enough income to perform dairy farming? A) Yes B) NO

36. Are you willing to continue in dairy farming? A) Yes B) NO

37. If the answer for question number 36 is yes, what are the opportunities to continue in dairy production in the future?----------
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38. what are the main problems do you have faced in your dairy farming operation?----------
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39. What do you recommend in order to provide a solution for current challenges?

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Mummee Manaajimentii Projeektii

Manaajimentii Projeektiitin Digrii 2^{ffaa}

Gaaffannoo

Gaafiin kun kan qophaa'e rakkoolee omisha aannanii fi bu'aa annaanii irrati mudataan addaa baasuufidha. Ragaalen haala kanaan guramaanis kan fayyadaan dhima baruu fi barsiisuu qofaafii akkasumaas icciitiin kan qabamaan ta'aa. Qorannaa kanaaf hirmaaanan isiin gootan gahee guddaa qaba.

Deebii keenyaa kan jettaan irrati maruun ykn haala gaafii irrati hunda'uun addaa baasuun halaan nuf ibsaa.

Hirmannaa keessaniif Galannii Keenya guddaadha.

I. Haala Hirmaatotaa

1.Saala Hirmaataa

A)Dhiira B) Dhalaa

2. Umrii Hirmaataa

A) Wag 20-30 B) Wag 31-40 w C) Wag 41-50 D) Wag 50 olii

3.Haala Gaaila Hirmaata

A) Kan Fuudhee/Heruumtee B) Kan Hin Fuunee/hinheerumnee C) Kan Hiikee/ hiiktee D) Kan jalaa du'ee/ duutee

4. Omisha Anaanii fi Bu'aa Isaa erga Eegaltanii Hagamii?

A) Waggaa 1-5 B) Waggaa 6-10 C) Waggaa 10 ol

II. Maloota Omishaa Annanii

1.Maloota Annan Ittiin Horsiisan Hima ykn Annan maaliif omishtuu? Nuuf Ibsaa----------

2) Loon Annanii Meeqa Qabdu?

A) loon 1-3 B) loon 4-7 C) loon 8 fi isaa ol

3.Maddii loon keessani maalii?

A) Bittaa B) Dhaala C) Lamaanuu

4.Sanyiin Loon Keessanii Kamii?

A) Kan Biyya Keessaa B) Diqaalaa Lamaanii C) Kan Biyya Alaa

5. Sanyii Isaa Kamtuu Bu'aa Guddaa Argaamsiisaa?

A) Kan Biyyaa Keessaa B) Diqaalaa Lamaanii C) Kan Biyya Alaa

6. Gaafii 5^{ffaa} deebiin kee diqaalaa lamaanii ykn kan biyya alaa yoo ta'ee, sanyii looni biyyaa keessaa qofaa horsiisuu maaf filataan?----------
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7. Horiin akaa walhoraaniif maalii isiin fayyadamtaan kamii?

A) Mala Namtolchee B) Qotiyoo Gansiisuu c) lamaanuu

8) Malaa Namtolchee fayyadamtaan yoo ta'ee eessaa akka argatan ibsaa?

9) Aannan litrii hagamii loon tokko irraa guyyyaati argatuu?—nuuf ibsaa litriidhan----------
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10.Loon annaniif nyaatni isin fayyadmataan isa kamii?

A) Nyaata qopha'aa B) lafaa Margaa C) Oka'aa D) Haftee Midhaanii E) kan wal faana fayyadamtaan kan biro nuuf ibsaa?----------
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11.Nyaata loonii eessaa argatuu?

A) Kan ofii B) Bita'aa C) Lamaanuu

12.Hanqinni nyaata looni isiin qunamaa?

A) eeyee B) Mitii

13.Deebiin gaafii 11^{ffaa}eeyyee yoo ta'ee jia kaam isiin Mudataa? Nuuf Ibsaa----------
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14.Naannawaa keessaniti sababiin guguddoon hanqinnii nyaata loonii mudatuuf maalii?----------
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15.Ganda keessan Keessaa hojjetan Dirree Misoomaa ni jiraa?

A) eeyyee B) Mitii

16.Hojjetaa diree misoomaa irraa gorsa ittiin omisha aannanii fi bu'aa isaa gudiftan fudhatii beektuu?

A) Eeyyee B) Mitii

17. Omishaa aannanii fi bu'aa isaa alati haala omisha qonnaa kam biro ittin gudiiftan irrati gorsa fudhattani?

A) Eeyyee B) Mitii

18.Deebiin gaafii 17ffaaeeyyee yoo ta'ee omisha qonnaa gosaa kam irraati gorsa fudhatan?Tarreessi----------

19.Annanii fi bu'aa annaanii yoom gurguruu eegaltan?

20.Bu'aa Aannani kam gurgurtanii galii argatuu?

A) Aannan qofa B) Dhadhaa C) ayibii D) Kan wal faana gurgurtaan yoo jiraate ibsa---------
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21.Deebiin gaafii 20ffaaaannan yoo ta'ee gatiin aannanii litriin meeqaa?----------
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22. yeroo isiin aannanii fi bu'aa isaa gatii gadii bu'aan gurgurtan jiraa?

A)Eeyyee B) Mitii

23.Deebiin kee gaaffii 21ffaaeeyyee yoo ta'ee ji'aa kamii irraa?

A) Ji'aa tsoomaa B) Ji'aa kam biraa yoo ta'ee adda baasii barreessi----------
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24.Aannan ho'aa ni gurgurtuu?

A) Eeyyee B)Mitii

25. Gaafii 23ffaadeebiin kee mitii yoo ta'ee isaa manati hafee maalif olchituu?

A) nyaata manaaf B) Garaa bu'aa Biraati Jijjiirun C) kan biraaf olchituu tanaan addaan baasii.

26.Loon aannaniif bishaan gahaa nan argadhaa jettee yaadaa?

A) Eeyyee B) Mitii

27.Loon aannanif bishaan eessaa akka argataan filii?

A) Bishaan Bombaa B) Bishaan Bollaa C) Bishaan Lagaa

28.Hangii lafa qabdanii loon aannanii horsiisuuf gahadha?

A) Eeyyee B) Mitii

29.Yeroo barbachisutii ogeessaa fayyaa looni ni argaatuu?

A) Eeyyee B)Mitii

30.Gaafii 29ffaa deebiin kee eeyyee yoo ta'ee tajaajilaa fayya loonii eessaa argattan?

A) Motummaa B) kan Dhunfaa

31.Gaaffin 29ffaa deebiin kee mitii yoo ta'ee rakkoolee jiran maal fadhaa? Tarressaa----------
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32.Omishaa aannaniif fi bu'aa isaaf tajaajilii liiqii mijataan jiraa?

A) Eeyyee B) Mitii

33.Gaafii 32ffaa deebiin kee eeyyee yoo ta'ee tajaajila liqaa argatanii beektuu?

A) Eeyyee B) Mitii

34.Gaafii 33ffaa deebiin kee eeyyee yoo ta'e tajaajila liqaa eessaa argataan?

A) Baankii B) waldaa Liqii fi Qusannoo Oromiyaa C) firaairra

35.Horsiisa loon aananiif galii gahaa qabduu?

A) Eeyyee B) Mitii

36. loon aananii horsiisuu itii fuftaa?

A) Eeyye B) Mitii

37. Gaafii 35ffaa deebiin kee eeyyee yoo ta'ee horsiisaa loon aannanif charraaleen gara fuulduratti argattaan maalii?----------
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38.loon aananii horsiisuu keessati rakkoleen guguddon isiin mudataan ibsaa?

39.Rakkoolee Mudataan kanaaf furmaatni isiin keessan maali?----------
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