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Comparative Study on the Performance of Dairy Cooperative Input and output Marketing In Astbie Womerta, Alamata and Enderta woreda In Tigray Region Ethiopia

By

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In Cooperative Marketing

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DECLARATION

This is to certify that this thesis entitled **"Comparative Analysis on the Performance of Dairy Input and Output Marketing in Atsbie Womberta, Alamata and Enderta Woredas, Tigray Region, Ethiopia"** submitted in Partial fulfillment of the requirements for the award of the degree of M.Sc., In Cooperative Marketing to the school of Graduate Studies, Mekelle University, through the Department of Cooperatives, done by Mrs. Almaz Mesfin Tirfe, Id.No. FDA/PR 0013/99 is an authentic work carried out by her under my guidance. The matter embodied in this project work has not been submitted earlier for award of any Degree or Diploma to the best of my knowledge and belief.

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Ethiopia

ABSTRACT

Cooperative form of business is an instrument of change with the task of making the poor productive. The development of dairy cooperatives in Ethiopia indicates that there is a need to focus interventions more coherently addressing both technological gaps and marketing problems. The present study investigates the difference in performance of cooperatives in the study area and major factors influencing performance.

The objectives of the study were: 1) To compare the performance of selected dairy cooperatives in Enderta, Alamata and Atsbi Womberta woredas of Tigray. 2) To assess the determinants of performance among the dairy cooperatives. 3) To identify the constraints with respect to quality feed and breed and finally to suggest suitable strategies to improve the productivity and marketing capabilities of dairy cooperatives in the selected woredas.

The researcher used Focus Group Discussion, report from government offices as secondary data and enumerator administered interview schedule for data collection. The

study areas Alamata, Enderta and Atsbi were selected because of the existence of dairy cooperatives with good potential and a felt need to study their performance. All cooperatives except one were included in the study and a random sample of 120 respondents was selected based on probability proportionate to size. Data was analyzed using SPSS version 13.0 and statistical tools such as descriptive statistics and regression. Results are presented as frequencies, percentages, chi square and financial ratios.

The large majority of the respondents were married female farmers in the productive age group of 15-35 years with the maximum education attended being primary school.

The impact of independent variables on the satisfaction of members, the main indicator of performance shows that cooperative age; members' training; availability of credit; members' participation and gender had positive impact on the performance of cooperatives and lack of roads had negative influence. The rest of the independent variables showed association but had no statistical significance. The most important constraints regarding feed perceived by members were non availability and high price of feed where as regarding breed they were lack of breed and insemination centers. In conclusion, there is difference in performance among cooperatives brought about by variety of challenges. It is recommended that cooperatives have training and supportive supervision by experts and officials to improve their productivity and managerial capabilities. Due attention should be given to the development of roads and transport system as well as the availability of feed and exotic breed. Finally the researcher recommends broader and in depth research be conducted to discern and properly address the multifaceted problems of dairy cooperatives in woredas of Tigray Region.

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ACRONYMS and ABBREVATIONS

AAPBMDA: Animal and Animal Products and Byproducts Marketing Development Authority Development

ARDU: Assela Agricultural and Rural Development Unit

BoARD: Bureau of Agricultural and Rural Development

BoFED: Bureau of Finance and Economic Development

CADU: Chilalo Agricultural Development Unit

CSA: Central statistics

DDE: Dairy Development Enterprise

EARO: Ethiopian Agricultural Research Organization

EPID: Extension Program Implementation

FAO: Food and Agricultural Organization

FCA: Federal Cooperative Agency

FGD: Focus Group Discussion

FINNIDA: Finish International Development Agency

GDP: Gross Domestic Product

ICA: International Cooperative Alliance

IFPRI: International Food Policy Research Institute

ILRI: International Livestock Research Institution

IPMS: Improving Product and Market Success

KCC: Kenya Cooperative Creameries

KM: Kilometer

LPM: Linear Probability Model

M.A.S.L: Meter above Sea Level

MEDaC: Ministry of Economic Development and Cooperative

MOA: Ministry of Agriculture

NGO: Non-Governmental Organization

PA: Peasant Association

PPS: Probability Proportionate to Size

SDDPP: Selale Dairy Development Pilot Project

SPSS: Statistical Package for Social Science

TCAR: Tigray Livestock Census Analysis Result

TCPO: Tigray Cooperatives promotion Office

TLU: Total Livestock Unit

WADU: Wolaita Agricultural Development Unit

WFP: World Food Program

VIF: Variance Inflation F actor

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CHAPTER - I

INTRODUCTION

1.1. Back ground

The Federal Government of Ethiopia has identified cooperative form of business organizations as an instrument of socio-economic change. Cooperative movement is not only an economic movement; it is also an educational and social movement. The task is not to make the poor wealthy, but to make them productive. The cooperative form of organization confirms to the principles of the following:

- Democracy
- Open and voluntary membership
- Limited interest on capital
- Distribution of surplus in proportion to participation
- Self help
- Mutual help; service
- Member promotion

Ethiopia is now moving towards a more decentralized and market oriented economy. Government recognizes the importance of privatizing business and rehabilitating cooperative. It is promoting business oriented cooperatives based on farmers' needs and founded on principles of voluntary participation, private ownership and democratic decision making. The government has created an enabling environment for the development of modern, farmer owned and farmer-controlled cooperatives.

The cooperative movement, in Ethiopia, is expanding, diversifying and growing at a rapid rate. There are more than 19,147 cooperatives in Ethiopia with total members of 4,617,800 of which 3,748,258 are male and 869,542 female, the total capital of these cooperatives is 1,475,257,047 (Source FCA,2005). The cooperative sector is expected to play a dynamic role in uplifting the economy. It is intended to raise the socio-economic standard and life style of the people, particularly of the deprived sections of Ethiopia the ultimate aim of development being to improve the quality of life and ensure social justice.

Ethiopia holds large potential for dairy development due to its large livestock Population; the favourable climate for improved, and the relatively disease-free environment for livestock. Given the considerable potential for smallholder income and employment generation from high-value dairy products, development of the dairy cooperative in Ethiopia can contribute significantly to poverty alleviation and increased employment opportunity in the country. Like other sectors of the economy, the dairy sector in Ethiopia has passed through three phases these include the imperial regime, characterized by almost a free market economic system and the emergence of modern commercial dairying (1960-1974), the socialist Dergue regime that emphasized central economic system and state farms (1974-1991), and the current phase under the structural adjustment program and market liberalization (1991to present), following the economic and political policy in the country. In the most recent phase, characterized by the transition towards market-oriented economy, the dairy sector appears to be moving towards a takeoff stage. The government has draft policy and proclamation for cooperative establishment and has organized federal commission, Regional and wereda offices and as well department of cooperatives in higher learning institutions. The Tigray regional cooperative promotion office is one

from the other regional offices, which is established with the proclamation No 147/1998, with the main objectives of establishing organizing and promotion of cooperative through out Tigray to improve living standard of cooperative members on the other hand to create strong and competent cooperative by organizing the communities which have similar social and economic problems, by pooling their resources , creating access to modern input, technology and credit services

The development of dairy cooperative in Ethiopia indicates that there is a need to focus interventions more coherently. Development interventions should be aimed at addressing both technological gaps and marketing problems. Integration of crossbred cattle to the sector is crucial for dairy development in the country. This can be achieved either through promotion of large private investment to introduce new technology input supply and out put in the sector such as improved genotypes, feed and processing, or promotion of integration of crossbred cattle into the smallholder sector through improving their access to improved cattle breeds, veterinary service, and credit. Similarly, government should also take the lead in building infrastructure and providing technical service to dairy cooperatives.

1.2. Statement of the problem

Over the last decade following the political changes in 1991, the dairy sector in Ethiopia has shown considerable progress. Total milk production grew at an estimated rate of 3 percent as compared to 1.8 percent during the period of 1975-1992 (AS IFPRI,Washington, Dc), thus ending the long-time trend of declining per capita milk production in the country. The dairy sector in Ethiopia is expected to continue growing over the next one to two decades given the large potential for dairy

development in the country, the expected growth in income, increased urbanization, and improved policy environment. The shift towards market economy is creating large opportunity for private investment in urban and peri-urban dairying. However, the main source of growth is expected to be the growth in demand for dairy products. If concerted efforts are made for smallholder income and employment generation from high-value dairy products, development of the dairy sector in Ethiopia can contribute significantly to poverty alleviation and nutrition in the country (Staal 2001). The existing excess demand for dairy products in the country is expected to induce rapid growth in the dairy sector. Factors contributing to this excess demand include the rapid population growth (estimated at 3 percent annually), increased urbanization and expected growth in income. With the shift towards market economy and liberalization policies, private entrepreneurs are expected to respond to the increased demand through increased investment in dairying and milk processing. While the response of the private sector to the increased demand for dairy is expected to be significant, the small-scale household farms in the highlands hold most of the potential for dairy development.

The consumption of milk and milk products vary geographically between the highlands and the low lands and level of urbanization. In the lowlands, all segments of the population consume dairy products while in the highlands major consumers include primarily children and some vulnerable groups of women. The demand for milk depends on many factors including consumer preference, consumer's income, population size, price of the product, price of substitutes and other factors. Felleke and Geda (2001) indicated that the demand for milk is inelastic with respect to income and

price. In general, increasing population growth, rising real income and decreasing consumer prices are expected to expand the demand for milk and milk products.

As is common in other African countries (e.g., Kenya and Uganda), dairy products in Ethiopia are channelled to consumers through both formal and informal dairy marketing systems. Until 1991, the formal market of cold chain, pasteurized milk was exclusively dominated by the Dairy Development Enterprise (DDE) (Holloway et al., 2000). Recently, however, private businesses have begun collecting, processing, packing and distributing milk and other dairy products. Still, the proportion of total production being marketed through the formal markets remains small (Muriuki and Thorpe, 2001). Formal milk markets are particularly limited to peri-urban areas. However, unlike the early phases, the formal market appears to be expanding during the last decade with the private sector entering the dairy processing industry.

In recent years, promotional efforts have focused on dairy marketing. Milk marketing cooperatives have been established by the Selale Dairy Development Pilot project (SDDP) with the support of Finnish International Development Association. These groups buy milk from both members and non-members, process it and sell products to traders and local consumers. The units also process milk into cream, skim milk, sour milk, butter and cottage cheese.Productivity of diary farms of small or large scale is limited by two main factors namely supply of quality feed and cattle breed. Enhancing the ability of poor smallholder farmers to reach markets and actively engage in them, poses a pressing development challenge. Difficult market access restricts opportunities for income generation. Remoteness results in reduced farm-gate prices, increased input costs and lower returns to labour and capital. This, in turn, reduces incentives to participate in economic transactions and results in subsistent rather than

market-oriented production systems. Sparsely populated rural areas, remoteness from towns and high transport costs all pose physical barriers impeding market access.

The superior performance of Kenya's dairy sector offers several lessons for Ethiopia, whose dairy sector remains in its infancy. Some of the factors that proved useful in the success of Kenyan dairy farming are presented as follows (Staal 1995).

First, grade cattle provided the major source of increase in productivity in Kenya. Second, the development of effective infrastructure for collection of milk in Kenya has also played a very important role in the development of dairy in the country. Third, the Kenya Cooperative Creameries (KCC) provided a guaranteed market for smallholder's milk. The milk cooperatives should be given enough technical and financial support as they are serving as an important market outlet for smallholder producers.

Dairy cooperatives are expected to play a major role in improving the productivity and marketing capabilities of farmers. Multiple factors determine the success or failure of these factors. Analysis of these factors is imperative in the search for possible solutions. This study will attempt to assess the difference in performance of diary cooperatives and their determinants and eventually ways of mitigating them.

1.3. Research questions

The research will address the following research questions

- What is the difference in performance among dairy cooperatives in Tigray region and why?
    - What are the differences in input supplies?
    - What are the differences in out put marketing?
- What are the reasons for the differences and why?

- How is the leadership formed?
- What is the management style?
- How much does the cooperative and the member's profit?
- Availability of resources (material, technology etc)?
- How good is the transport (roads, vehicles, distance, and price)?
- How good is the market for the products?
- What is the level of knowledge among the members of different co-operatives?
- What are the constraints with respect to feed and genetic improvement?

1.4. Objective of the study

General Objective

- The general objective of the study is to study the performance of Dairy Cooperatives in Atsbi, Alamata and enderta woredas of Tigray region and the factors influencing the performance.

Specific Objectives

- To compare the performance of selected dairy co-operatives in Atsbi, Alamata and Enderta woredas.
- To assess the determinants of performance among the dairy cooperatives.
- To identify the constraints with respect to quality feed and genetic improvement.

- To suggest suitable strategies to improve the productivity and marketing capabilities.

Hypotheses of the study

- Performance of each dairy cooperative significantly differs.
- Participation in dairy cooperative is significantly associated with performance of dairy cooperative marketing.
- Member's satisfaction is significantly associated with performance of dairy cooperative marketing.

1.6. Scope of the study:

This study will be conducted on members of diary cooperatives from three purposively selected woredas in Tigray. However as there is no major socio economic, technological, demographic and cultural difference between the study woredas and the rest of the region, results from this study could be only cautiously applied to the general population of the zone.

1.7. Significance of the study

This study will attempt to identify the differences in performance among dairy cooperatives and the determinants of the difference. Identification of the reasons for difference in performance will be an important input for designing appropriate intervention to boost success; for policy formulation and will be important feed back to the cooperative and to improve their performance. Additional lessons learned from these co-operatives could be applied to the betterment of others in the Tigray region or in the nation.

1.8. Limitation of the study

The study is proposed to be conducted only in three woredas of Tigray region. The socio-economic conditions prevailing in the peripheral regions of Ethiopia are different; the results cannot be generalized to other regions of Ethiopia.. The distribution of cattle are skewed between regions as well as with in zones of Tigray. To this end western zone (1,148,649) has the highest cattle population followed by central zone (809,230) and southern zone (725,144) and eastern zone (354,921). There are geographic and weather differences too in addition to differences in the performance of dairy farmers, thus the study can not be generalized to Tigray region also.

The other limitation of the study was, during data collection the respondents were not forthcoming about wealth and property acquisition. None of the respondents put their wealth in monetary terms or even in kind rather they were stating them in general terms. The general terms included; sending children to school; buying furniture for the house and daily household expenses.

As part of the data problem none of the cooperatives were providing any sort of dairy inputs which made it impossible for the researcher to compare cooperatives in terms of dairy input marketing.

Majority of the cooperatives did not have documentations on their capital and transactions. In addition they had no regular and yearly financial audit report which posed limitation to estimate the financial performance of respective dairy cooperatives

1.9 Chapter Plan

Chapter one deals with the background, statement of the problem, research questions, objectives, hypotheses and scope of the study. The second chapter consists of the review of the literature. Methodology is outlined and described in the third chapter. The fourth chapter deals with the results and discussions. Conclusion and recommendations are given in the fifth chapter.

CHAPTER - II

LITERATURE REVIEW

The literature relevant to the study is organized and presented in this chapter

2.1. Nature of Cooperative

A cooperative is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. (G.K.Sharma,1997).

The definition emphasizes the following characteristics:

- The cooperative is autonomous: that is, it is as independent of government and private firms as possible.
- It is an "association of persons". This means cooperatives are free to define "persons" in any legal way they choose.
- "The persons are united voluntarily". Membership in a cooperative should not be compulsory. Members should be free, with in the purpose and resources of the cooperatives to join or to leave.
- Members of a cooperative meet their common economic, social and cultural needs. This emphasizes that cooperatives are organized by their members, for their members. Member needs may be singular and limited, they may be diverse, they may be social and cultural as well as purely economic, but, what ever the needs, they are the central purpose for which the cooperative exists.

"A cooperative is a jointly owned and democratically controlled enterprise" (G.K.Sharma, 1997).This phrase emphasizes that ownership is distributed among

members on democratic basis. These two characteristics of ownership are particularly important in differentiating cooperatives from other kinds of organizations, such as capital-controlled firms. Each cooperative is also an "enterprise" in the sense that it is an organized entity, normally functioning in the market place; it must strive to serve its members efficiently and effectively.

The Cooperative Sector in Ethiopia

The interdependence and the mutual help among human beings have been the basis of social life, since the beginning of human society individuals have found advantage in working together and helping one another; first in foraging, then hunting, later in agriculture still in manufacture (Krishnaswami, 1992).

Cooperation is an age – old tradition that runs through the history of Ethiopian society. For centuries, the sprit of self – help has been an integral part of farming communities. However, despite the existence of 19,147 various types of cooperatives in Ethiopia, with a membership of 4.076 million, since 1991, Ethiopia has been undergoing major political and economic changes. The authoritarian centrally planned and controlled economy of the previous two decades is being replaced by free market economic development. In line with the government's plan to privatize business, NGOS' funding is helping to restructure these cooperatives to become farmer owned and controlled, democratic and transparent (FCA, 2005).

Traditional Cooperatives in Ethiopia

Ethiopia is known as a country with diversified nationalities, ethnic groups, languages and each has its own unique culture and custom of living in entertaining different social activities. Our mode of living is cooperative in style including; working in group (plowing, harvesting, trashing, house construction etc), habits of eating together (in holidays, festivals), and living together as extended families.

In Ethiopia there are three well known traditional cooperatives or self-help groups such as Edir, Equb, and Debo/Wenfal/Lefenty

Advantages of traditional forms of cooperatives

They are indigenous ways of solving member's problems with no need for external expert's assistance during establishment; formulating by-laws, book keeping and over all management. They are strong and autonomous serving only members and member's faith in their organization and participation is high. Management committees of Edir are loyal and corruption is a rare phenomena.

Limitations of traditional organization

Traditional organizations like Equb are far from the concept of present value of money. They have no continuity for long time and most of them are established for specified period and then dissolved. Mostly they do not have any legal documents and some times may end up in conflict.

Historical Movement of cooperatives in Ethiopia

Formal cooperatives started in Ethiopia during the ruling era of Emperor HaileSelassie.In 1960 the first legislative called "Farm Workers Cooperatives Decree" was declared as Decree No.44/1961. The objective needed to enact this decree was: to accelerate the development of the agricultural economy of the country. The organization of cooperative enterprise was believed to contribute measurably to this end and it was also found necessary that the proper framework be created for the establishment of such cooperative enterprises.

Modern Cooperatives Movement

During the imperial rule, modern cooperatives in the agriculture sector came in to existence, during this time the first cooperative legal action was made and it is known

by Decree number 44/1961. The main reasons for this decree was the increase in number of unemployment, the fast increase of migration from rural area to urban, the increase in number of students who drop out of their education, and finally the disarmament of the military with out proper compensation and pension. Cooperative movement in Ethiopia was started in 1960's with the launching of the comprehensive agricultural development projects such as the Chilalo Agricultural Development unit (CADU) (Zerihun, 1998).

Accordingly, the first cooperatives' proclamation known as proclamation number 241/1964 was put in place. Based on this proclamation, 158 cooperatives were established with 33, 400 members and 9,970, 600 Birr total capital. However, the focus was only on potential areas for agricultural production in order to enhance the production of economically important crops/cash crop for export and as a result, land ownership was basic criterion for membership. In most part of the country few land lords owned the land. So from the very beginning, it failed to meet the demand of the marginalized group of farmers. Commercial farmers were encouraged to become members of the cooperatives (Zerihun, 1998). In 1974, the Military junta overthrew Emperor Haileselassie's Government and established a socialist Government. The socialist Government gave cooperative organization proclamation number 138/1978 in 1978. During this era, tremendous efforts were made to promote cooperatives. However, cooperatives movement used to suffer from loss of credibility in the eyes of their members and the public in general because of the political ideology of the then existing government. Up to 1990 there were 10,524 different types of cooperatives with 4,529,259 members and capital of Birr 465,467,428 throughout the country. From these cooperatives 80% were rural cooperatives. At that time the then existing government gave due attention for the cooperatives (Zerihun, 1998). Even

though the military government issued a proclamation to promote and support cooperatives, its main target was to promote the socialist ideology through out the rural Ethiopia using cooperative as a means of attaining its objectives. The members were forced to form or join in to cooperatives. Dessalegn (1994) revealed that MoA auditors investigated and found that more than 24 million Birr was misappropriated by the management committee and employees of cooperatives. This made members lack tangible benefits and there was no role to play for members and sense of ownership gradually degraded (Dessalegn, 1994).

The existing government has shown its commitment to promote cooperatives since it came in to power in 1991. Initially the Government enacted agricultural cooperative proclamation incorporating the internationally accepted principles. The intension was to reorganize cooperatives, which can work in the free market economy. The government continued its effort to promote various types of cooperatives through out the country and introduced cooperatives proclamation No, 147/1998. Since then different cooperatives have been organized and established (FCA, 2005).

Since the enactment of the new act, liberalizing the cooperative movement from direct government control, the movement has witnessed a number of challenges. Where as some of the challenges offer excellent opportunities for the cooperative movement to develop in to strong commercial enterprises. Among the challenges, stiff competition, hangover of the past or luck of commitment, globalization and government attitude towards subsidy are the major ones. Hence, democratization of the movement, a change of government role from direct control to advisory role, the legal framework, divided earnings can be considered as opportunities for the better performances of cooperatives. The 1998 proclamation has created favorable condition for the

promotion of cooperatives in to higher- level business organization or unions by pooling their resources together.

Table -1 No of cooperatives by Region and capital

Region	No of unions	No of Primaries	Membership			Capital in Mil, Birr
			Male	Female	Total	
Tigray	20	160	86,514	30,159	116,673	5.11
Beneshangul	1	8	21,157	273	2,430	0.13
Addis Ababa	3	165	0	-	8,012	1.74
Oromia	43	1163	462,807	50,854	513,661	37.73
SNNP	13	273	183,163	14,243	197,406	15.35
Amhara	26	483	430,726	45,435	476,161	24.22
Total	106	2252	1,165,367	140,964	1,314,343	84.28

Source: Federal Cooperatives Agency, 2005

2.2. Functions of Cooperatives

Enhancing the ability of poor smallholder farmers to reach markets and

actively engage in them, poses a pressing development challenge. Difficult market access restricts opportunities for income generation. Remoteness results in reduced farm-gate prices increased input costs and lower returns to labour and capital. This, in turn, reduces incentives to participate in economic transactions and results in subsistent rather than market-oriented production systems. Sparsely populated rural areas, remoteness from towns and high transport costs all pose physical barriers impeding market access. Transaction costs such as lack of information about markets, lack of negotiating skills, and lack of collective organization are other impediments to

market access. The question of how to expand the market participation of smallholder diary farmers is a major challenge facing many governments and NGOs in developing countries.

The policy-relevant variables having the greatest impact in fluid milk markets are cow numbers, time to the milk group, and visits by an extension agent (Muriuki and Thorpe, 2001). The number of cows kept affects marketable surplus through total production and marginal costs of production (Holloway, et al., 2000). The action of pooling, especially pooling of milk collection and transportation activities, has the potential to mitigate costs. Sales to the milk group can be increased by reducing the milk delivery time from farm to collection point. This clearly relates to the transaction costs of reallocating family labor to milk delivery. Any policy support to raise smallholder participation in milk marketing would necessarily need to weigh public costs against the expected gains by smallholder households.

Market access poses a key bottleneck to the expansion of smallholder milk production and processing. Co-operatives increase the participation of smallholders in milk markets in the Ethiopian highlands. The cost of milk production in Ethiopia is low but transaction costs are high, preventing dairy export for the moment (Muriuki and Thorpe, 2001).

Co-operatives could serve as basis for development of producer-oriented processing that better integrates smallholder producers with the Ethiopian dairy markets and with the global agro-industry.

2.3.Livestock population in Tigray

Tigray is one of the regions in Ethiopia endowed with large livestock population. According to the Tigray Livestock Census Analysis Result (TCAR) of 2004, the region has 3,040,759 cattle, 935,349 sheep, 1,465,741 goats, 303,412 donkeys, 10,417 mules, 5,111 horses, 13,661 camels, 2,258,897 poultry and 184,517 bee colonies.

The real distributions of cattle are skewed between zones as well as within zones of the region. To this end, western zone has the largest cattle population of 1,148,649 (37.8%) followed by central zone with 809,230(26.6%), southern zone with 725,144(23.8%) and eastern zone with 354,921(11.8%). Mekelle zone has only 2815(0.09%). Similarly, the proportion of male to female ratio is also of skewed nature in distribution. Accordingly, the cattle population in western zone consists of 35% males and 65% females, while that of the central zone encompasses 40% males and 60% females, while the southern and eastern zones show similar proportions of 38 % males and 62% females. Mekelle zone consists 24% males and 76% females.

About 83% of the population is farmers and the main crops are: Teff, wheat, and barely; other agricultural products include: Beans, lentils, onions, and potatoes.

Export items are cotton, sesame and minerals. The cultivable land is 1.5mha, of which one million hectare is being cultivated, while 420,877 hectares of land is terraced.

The selected zones in Tigray region of northern Ethiopia are included in the study (In Eastern Zone Astbie Woumberta, Southern zone Alamata and Enderta woredas).

2.4.Dairy Input supply and output marketing

Dairy production is an important part of the livestock production systems in Ethiopia. Cattle, camel and goats are the main livestock species that supply milk, with cows contributing 81.2% of the total milk output.

Initial efforts in dairy development were based on the introduction of high yielding cattle in the potential highlands. Research efforts were also geared towards substantiating the importance of this system. The use of cross bred and improved stock on smallholder dairy development using a "package approach" by the comprehensive and minimum package programs and projects (CADU, ARDU, WADU and EPID, DRDP and FINNIDA assisted projects) before and during the socialist mode of production had contributed to the improvement in the system (Holloway et al, 2000). However, the prevailing state and cooperative structures dominating the progress did not warrant sustainable development of the sub-sector. The introduction of a mixed economy and liberalization had a positive impact on smallholders and led to the emergence of private dairying in peri-urban and some commercial farms. Market-oriented strategies were introduced for the first time. Most projects included activities for milk collection and processing - ARDU had initiated milk collection and processing but it was not sustainable. DRDP and the Small Scale Milk Processing Project (MOA/FAO/WFP).Organized small scale milk processing in few locations and were strengthened by SDDP to establish 35 units. The emergence of user groups such as the Addis Ababa Dairy producers Cooperative, Adaa Liben Milk Marketing Cooperative and Selale Milk Marketing Union and a number of small scale milk processing groups paved the way to rationalize milk marketing where proper

marketing in terms of milk collection, transportation, processing and distribution are the means to enhance production.

2.4.1. Dairy input supply

Ethiopia holds large potential for dairy development due to its large livestock population, the favourable climate, and the relatively disease-free environment for livestock. Although milk and milk products play important role in the economy, the low productivity of local breeds, shortage of feeds, limited veterinary services and a general shortage and high cost of feed and exotic dairy breeds are some of the major constraints (Redda, T. 2000). Advances in biological technology in livestock have been induced primarily to improve the yield of animal products per unit of breeding stock (Hayami and Ruttan, 1985). Similar to the case of crop production, these advances typically involve one or more of the following elements:

- Improved feeding to provide satisfactory environment for animal growth and feed supplements to stimulate higher productivity
- Disease control
- Better environments for animal growth, particularly shelter; and
- Selection of efficient breeds specifically adapted to respond to those elements in the environment that are subject to man's control.

➢ The two main factors influencing dairy productivity are inadequate supply of quality feed and the low productivity of endogenous cattle productivity.

2.4.1.1.Feed Constraints to Dairy productivity

Feed, usually based on fodder and grass, are either not available in sufficient quantity due to fluctuating weather conditions or when available are of poor nutritional quality.

This constraint results in low milk and meat yields, high mortality of young stock, longer parturition intervals, and low animal weights (McIntire et.al., 1992, p.103). Improved nutrition through adoption of sown forage and better crop residue management can substantially raise livestock productivity. National and international research agencies, including the International Livestock Research Institute (ILRI), have developed several feed production and utilization technologies and strategies to address the problems of inadequate and poor quality of feeds. So far, adoption of these technologies in the Ethiopian highlands have been limited (Zebini, E., A. Gebrewold and B. Shapiro. 1995)

Unlike residue management, hay and silage making or adoption of forage legumes often involve the introduction of a new crop into the farming system.
Therefore, how the new crop fits into the existing system is critical to successful introduction. In the case of forages, this is determined by the degree of crop-livestock interactions, forage and livestock product markets, the extent of market participation of forage growers and resource availability.

2.4.1.2. Lack of grade and cross bred animals

The large cattle population of Ethiopia has relatively limited numbers of exotic dairy cattle and their crosses. Less than 1 percent of the 34.5 million cattle population of Ethiopia are exotic or crossbred dairy cows (Muriuki and Thorpe, 2001). Consequently, milk productivity in Ethiopia is low. The indigenous zebu breed produces about 400-680 kg of milk/cow per lactation period compared to grade animals that have the potential to produce 1,120-2,500 liters over a 279-day Lactation (Muriuki and Thorpe, 2001).

Genetic improvement has been recognized in the design and implementation of the development projects in the country during the last four decades.

With the exception of SDDP, production and distribution of crossbreed heifers, provision and distribution of dairy stocks, provision and strengthening of services were major components of the development projects implemented between 1967 and 1998. Data on the existing cooperatives in Ethiopia is given in table 2.

2.4.2. Marketing

Marketing involves all activities involved in the production, flow of goods and services from point of production to consumers. Marketing includes all activities of exchange conducted by producers and middlemen in commerce for the purpose of satisfying consumer demand.

Marketing is defined as the set of human activities directed at facilitating and consummating exchanges. All business activities facilitating the exchange are included in marketing (Philip kotler, 2003).

Dairy Marketing Systems in Ethiopia

As is common in other African countries (e.g., Kenya and Uganda), dairy

Products in Ethiopia are channelled to consumers through both formal and informal dairy marketing systems. Until 1991, the formal market of cold chain, pasteurized milk was exclusively dominated by the DDE which supplied 12 percent of the total fresh milk in the Addis Ababa area (Holloway et al. 2000). Recently, however, private businesses have begun collecting, processing, packing and distributing milk and other dairy products. Still, the proportion of total production being marketed through the formal markets remains small (Muriuki and Thorpe 2001). Formal milk markets are

particularly limited to peri-urban areas and to Addis Ababa. However, unlike the early phases, the formal market appears to be expanding during the last decade with the private sector entering the dairy processing industry in Addis Ababa and Dire Dawa in the eastern part of the country.

2.4.2.1.Cooperative Marketing

Cooperative Marketing is an extension of the principles of cooperation in the field of marketing. It is a process of marketing through a cooperative association formed voluntarily by its members to perform one or more marketing functions in respect of their product.

2.4.2.2.Dairy output Marketing

The large cattle population of Ethiopia has relatively limited numbers of exotic dairy cattle and their crosses. Less than 1% of the 34.5million cattle population of Ethiopia are exotic or crossbred dairy cows (Muriuki and Thorpe, 2001). The cattle provide the families with consumable and saleable output products. The milk output produced in smallholder farms in Ethiopia is either sold and/or consumed as fresh, fermented milk and output products such as butter, butter milk, ghee and cheese (O'Connor, 1994; O'Mahony, 1988). The main source of milk in Ethiopia is the cow, and cow's milk constitutes 83.4% of the total annual milk output (FAO, 1993). Sour milk is the most common product, and milk is usually soured before any further processing is done. Though there are a few milk- processing plants in Ethiopia, much of the milk produced by rural smallholders is processed on farm using traditional technologies. The traditional technologies of processing are generally considered to be time consuming and inefficient in terms of milk fat recovery as butter per unit of milk.

Consequently, milk productivity in Ethiopia is low. The indigenous zebu breed produces about 400-680 kg of milk/cow per lactation period compared to grade animals that have the potential to produce 1,120-2,500 liters over 279-day lactation. Enhancing the ability of poor small holder farmers to reach markets and actively engage in them poses a pressing development challenge, as difficult market access restricts opportunities for income generation. Remoteness results in reduced farm-gate prices increased input costs and lower returns to labour and capital. This, in turn, reduces incentives to participate in economic transactions and results in subsistent rather than market-oriented production systems. Sparsely populated rural areas, remoteness from towns and high transport costs all pose physical barriers impeding market access. Transaction costs such as lack of information about markets, lack of negotiating skills, and lack of collective organization are other impediments to market access. The question of how to expand the market participation of smallholder livestock producers is a major challenge facing many governments and NGOs in developing countries. The action of pooling, especially pooling of milk collection and transportation activities one way which could potentially be used to mitigate costs.

2.4.3. Empirical Studies

Performance of cooperatives has always been a topic of considerable interest in agricultural economics, primarily because of the significance of the cooperative form of organization in both developed and developing countries. Traditionally, cooperatives have been encouraged as a vehicle for economic development, because the cooperative form of organization, in addition to being equitable, enables small producers to capture economies of size and increases their marketing power. Governments in both developed and developing countries actively promote and assist

cooperatives. Justification of continued public support of the cooperative form of organization requires evaluation and monitoring of cooperative performance.

Hence, smallholders in Ethiopia Should be assisted to acquire grade cattle to increase productivity. Second, the development of effective infrastructure for collection of milk in Kenya has also played a very important role in the development of dairy in the country. This was made possible because the Kenya Cooperative Creameries (KCC) provided a guaranteed market for smallholder's milk. However, Ethiopia's DDE, the major public enterprise engaged in collection and processing of milk from smallholders and private farms in Ethiopia, is operating below full capacity and it has not played a comparably significant role as market outlet or buyer of last resort. Hence, the enterprise needs to increase its efficiency and increase its collection network. The milk coops should also be given enough technical and financial support as they are serving as an important market outlet for smallholder producers. Currently, only a few milk processing industries operate, and only in the capital and regional towns. The emergence of these private agro industries has given the smallholders and peri-urban producers an alternative market to the DDE Hence, the private sector should be promoted to engage in dairy processing and marketing as it gives opportunity for smallholders to market their milk. The input market should also be liberalized and the private sector should be promoted to actively participate in the market. More importantly, the dairy sector success in Kenya was driven by increases in demand. Yet this has not happened in the case of Ethiopia. Therefore, stimulating consumption of milk and milk products in the major cities and townships through increasing awareness is important for sustainable development of the sector. Milk production and marketing systems are similar in Kenya and Ethiopia (Muriuki and Thorpe 2001) and smallholders dominate dairy production in both countries. Both

countries have parallel formal and informal marketing systems where the proportion of milk production marketed in the formal market constitute a very small portion of the total milk produced (Muriuki and Thorpe 2001). In Kenya, the proportion of marketed milk sold in the formal market is 15 percent compared to only 5 percent in Uganda and a negligible share in Ethiopia (Muriuki and Thorpe 2001).With agro industrial development of the dairy sector in Ethiopia through private investment, the Proportion of marketed milk sold in the formal market is expected to increase. Despite the agro ecological similarities between Kenya and Ethiopia, the Kenyan highlands have higher and more evenly distributed rainfall and hence higher potential for feed and forage production. In Ethiopia, on-farm feed and forage production as well as industrial concentrates needs to be emphasized.

Since the major part of the demand for dairy in Ethiopia is mainly for processed Milk (butter and cheese), smallholder, labor-intensive processing technologies should be encouraged. Such technologies, hand-driven churners, are available and are used by women in rural areas for butter production. In the future and as income grows, demand for processed dairy products such as ice-cream and yogurt are expected to grow.

The Ethiopian highlands cover 490,000 sq. km or around 40% of the country's total area and almost half of the total African highland areas (Gryseels and Anderson, 1983). There are about 48% of ruminant livestock population out of 23.7 million that live in the highlands of sub-Saharan Africa (Azage et al., 1993). It is also indicated that human population and livestock pressure in the Ethiopian highlands is high, which is estimated to be 120 people and 130 TLU per km2, respectively. This is mainly due to a great reliance on cattle and equines for soil tillage and transport, respectively. The value of livestock meat, milk, hides and skins, eggs and wool,

currently account for 28% of agricultural GDP, and contributes 12-16% of the total Gross Domestic Product of the country (MEDaC 1998; AAPBMDA 1999). The sector also accounts for 12-15% of total export earnings, the second in order of importance (MEDaC 1998; FAO 1999).Livestock's share of agricultural GDP increases to about 35% when the value of non–monetary transactions, such as animal traction, transport and manure are included and the sector also employs about one third of the country's rural population (EARO, 2000).In Ethiopia, between 1974 and 1998, human population increased by 78% while cattle population increased by 31%, and small ruminant population decreased by 5.6%. Annual growth rate for human population was 2.5% while that for cattle and small ruminants was 1.1 and –0.2%, respectively. During the same period meat, milk and skins and hides Productions have increased by 23.8%, 42.7% and 5.7%, respectively (FAO, 1999).Share of urban population has continued to increase and this is expected to generate increased demand for dairy products. With increasing urbanization, increased demand for milk and other dairy products can only be met from the existing production through organized and formal marketing system and by further increasing production. According to Gashaw and Getachew (2001), per capita milk consumption from domestic source for the country for the year 2000 was 15.3 kg from cows alone and 19.0 kg when the other milk providing species are considered. Intensified dairying is the most regular generator of income for small-scale farmers. Dairy development has been shown to substantially raise milk production and household income in developing countries where development efforts are market-oriented and demand driven (Walshe et al., 1991). Evidence from Ethiopian highlands showed that estimated per capita food availability was 67.5% higher in households with crossbred cows than those with local cattle (Shapiro, 1994). The number of cows kept affects marketable surplus through both

total production and the marginal costs of production. An increase in total milk by the household decreases the marginal utility of milk consumption and, thus, should increase marketable surplus. In the case where additional cows lower marginal costs of production, this also increases marketable surplus because the household is assumed to equate marginal costs of production and milk price net of transaction costs (Holloway et al., 2000).

2.4.4 Conceptual Framework

The independent variables in the conceptual frame work were selected after extensive literature review which depicted that out of many other factors that affect dairy input and out put marketing these were the most important and relevant ones. The frame work assumes that performance is a net result of the positive and negative effects exerted by all the explanatory variables on the dependent variable.

$\mathbf{X_1}$=Age

$\mathbf{x_2}$=Gender

$\mathbf{x_3}$=Educational status

$\mathbf{x_4}$=Marital status

$\mathbf{x_5}$=Occupation

$\mathbf{x_6}$=Family size

$\mathbf{x_7}$=Members duration

$\mathbf{x_8}$=Availability of credit

x9=Training undergone in relation to dairy

$\mathbf{x_{10}}$=Market access

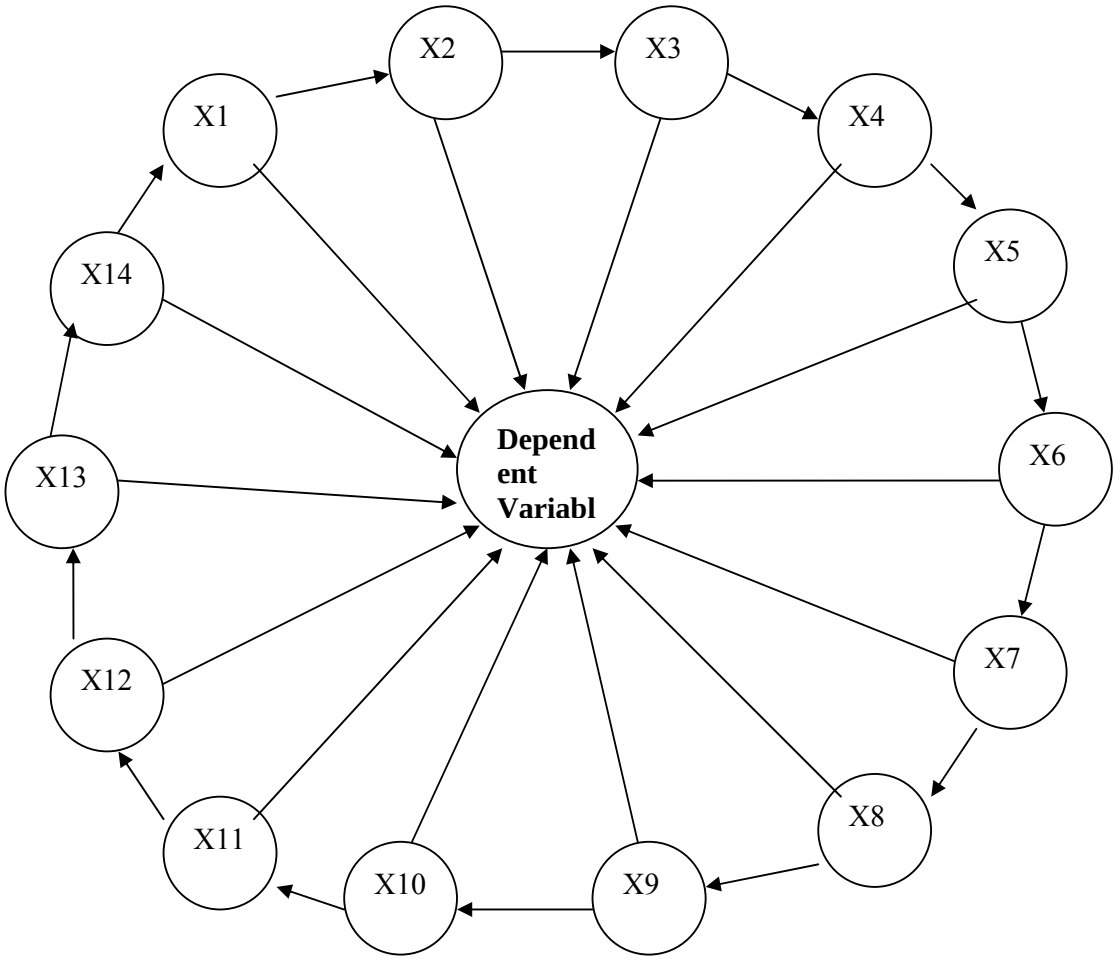
$\mathbf{x_{11=}}$=Leadership effectiveness

$\mathbf{x_{12}}$=Availability of infrastructure

$\mathbf{x_{13}}$=members participation in the cooperative

$\mathbf{x_{14=}}$ cooperative age

Fig-1 Conceptual Frame work



CHAPTER – III

MATERIALS AND METHODS

The methodology used in the study is presented in this chapter.

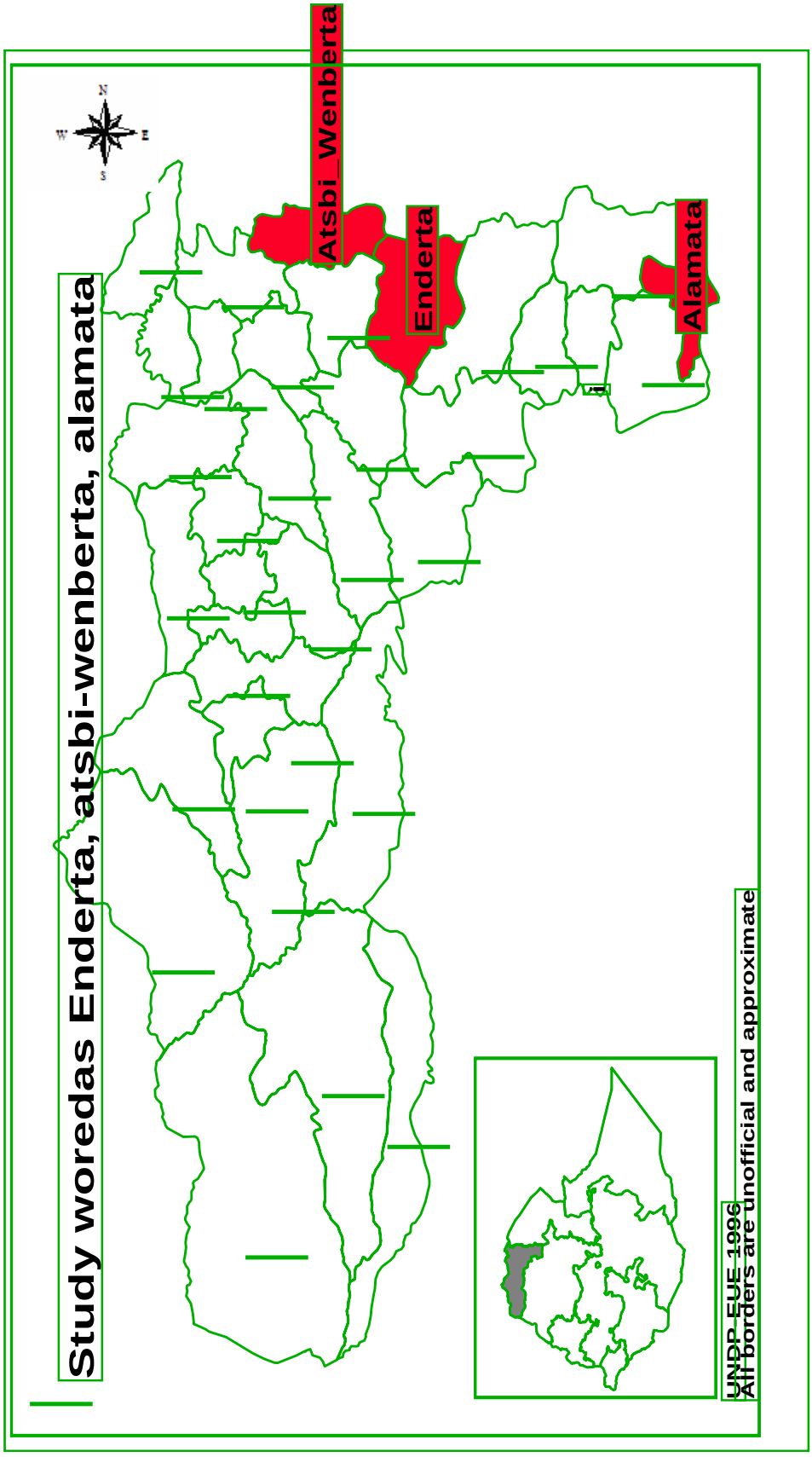
3.1 . Description of the study area

Tigray is located in the north of the country; situated at 12^0 15'N and 14^0 57'N latitudes36^0 27' E and 39^0 59' E longitude; the region covers an approximate surface area of 53 638 square km. Altitude varies from about 500 meters in the northeast to almost 4000 meters above sea level(m.a.s.l.) in the southwest. In the east of Tigray, there is an escarpment that drops from 2000 m.a.s.l steeply to 500 m.a.s.l. As one moves west of the escarpment the area is largely made of mountainous plateaus. The altitude of this area ranges from 1500–3000 m.a.s.l, which again drops in elevation, as one moves further west, to about 500 m.a.s.l. Tigray Shares common borders with Eritrea on the North and Sudan on the west and with regions of Amhara and Afar on the south and east respectively

The Climate varies from “kola” (semi arid) 49%, "Woina dega" (warm temperate) 39%, and "Dega" (temperate) 12%.The average annual rainfall is between 450-980 mm (CSA, 2005).

The total population is estimated at 4,334,996, consisting of 2,136,000 men and 2,198,996 women. 81.2% (3,519,000) live in the rural areas while the remaining 816,000 are urban dwellers with an estimated density of 86.56 people /Km2.

Fig – 2 Map of Tigray and the study woredas



Description of the selected woredas

Astbie Woumberta- is located in north east of Tigray Regional State capital of Mekelle about 65km far from Mekelle and total population of 116,632 (As of May 2007), Total area of the district is 885.3 km^2 (CSA, 2006).It is divided in to 16 administrative "tabias" (PAs) and two towns administrative. How ever the survey conducted by undp, 1998 for socio-economic study for the land use indicated that in the total area of Eastern zone 437,118.2 hectares, 58.04% is cultivated, 9.3% for grazing land, 17.66% for forest and bush land, and the rest 14.96% classified as miscellaneous land (BoFED, 1998).

The mean annual temperature ranges from 15 to 19^0c. The climate of the zone is classified in to three agroclimatical resources: High land representing 73.4 %, Midland 12.6% and low land 14%. The altitude of the area ranges from 1500-3200m.a.s.l. (BoARD, 2004). The average annual rainfall of eastern zone ranges from 400-800mm (BoARD, 2004). The distance between the dairy farm members to market on average is 2km (BoARD, 2004).

Alamata - woreda is located 600 km north of Addis Ababa and about 180 km south of the Tigray Regional capital state Mekelle. It is the south most woreda of the Tigray Region and borders with Amhara region from the south and west and Afar region from the east. The total Population of the woreda is estimated 141,554 (AS, May 2007). Altitude in the area ranges from 1178 to 3148 m and 75% of the woreda is low land (1500 m.a.s.l. or below) and only 25% is found in intermediate highlands (between 1500 and 3148 m.a.s.l.). Farmers in the woreda extensively cultivate cereals and vegetable; and raise mainly sheep and cattle.

Enderta - is located in South East zone of Tigray, total population estimated 129,876 Male 64,125(49.3%) and Female 65,751(50.7) May 2007.Number of family heads 28,432, Male 18,879 and Female 9,553 (May, 2007). Enderta bounded in the north by Kelteie Awelaielo woreda, in the east by the Afar wereda Abeala, in the south wereda Sehartie Samere and Hentalo wajerat and in the west side by Degua Tenben.The total area of the woreda is 93,048 km^2 and Altitude in the area ranges from 1400m to 1800m.

3.2 Sampling Technique

From the Tigray region of Ethiopia, the woredas Atsbi, Alamata and Enderta were purposely selected because of the existence of cooperatives with good potential in those woredas and thus a felt need for studying their performance by the cooperatives agency of Tigray region. All dairy cooperatives within the three woredas were included except one cooperative in Alamata Woreda for logistical and difficult accessibility reasons.

Table-2 Selected Dairy cooperatives and respondents in the sample:

S.n	Woreda	Total no of Dairy coop	Dairy cooperatives selected	Members	Sample size
1.	Alamata	2	Alamata (Desta)	111	56
2.	Atsbie-Womberta	2	Hadenet	12	6
			Semeret	11	6
3.	Enderta	4	Romanat (Zelalem)	35	17
			Debrie (Kisanet)	30	15
			Shebeta (Fereweini)	20	10
			Dedeba (Weriele)	21	10
4.	Total	8	7	240	120

Source: Primary data collected through field survey (Jan, 2008)

From the total 240 members of the seven dairy cooperatives in the three woredas a simple random sample of 120 respondents was selected based on probability proportionate to size (PPS). During the survey four people were not present on repeated visits and were excluded from the study.

Three leaders from each cooperative and two from the Woreda officials (total of 35) were included in focus group discussion on issues pertinent to the performance of the cooperatives.

Even though there are four cooperatives in Enderta woreda, survey at later stages revealed that two dairy cooperatives viz Shebta (Fereweini) and Dedeba (Weriele) dairy cooperatives have enrolled members, but they have not started the dairy marketing activities till the date of conduct of interviews with the members.

3.3 Data collection procedures and sources

Secondary data - The researcher collected report from government authorities (national, regional, woreda, and tabia offices) regarding:

- The age of cooperatives
- Membership fee
- Membership by sex and age
- Type of input is available
- Dividend paid to members
- Audited financial report
- Other relevant information related with the research objectives.

Cross sectional survey using enumerator administered interview schedule to collect primary data from 116 respondents in the seven cooperatives was conducted using a pre-tested interview schedule. The interview schedule was translated in to local language Tigrina before final use.

Focus Group Discussion

Focus group discussions (FGD) were conducted to get information regarding output market access, input supply, constraints and other issues. The investigator facilitated all the FGDs in Tigrigna. Short hand notes and tape recorder were used to document the content of the discussions. At the end of the discussion the tape record was transcribed; cross checked with the shorthand notes and translated in to English. The FGDs were conducted at suitable times and places chosen by the participants

3.4 Method of data analysis

The methods of analyses used in the study are described below

- Based on the collected qualitative and quantitative data on the performance of dairy cooperatives.
- SPSS (Statistical Package for Social Sciences) was used for data analysis.
- Percentages, frequency and mean, were used to describe results.
- Ratio Analysis
- Probit and Tobit model

3.4.1 Ratio Analysis

Ratio analysis is a widely used tool for financial analysis. It is defined as the systematic use of ratio to interpret the financial statements of a business so that the strength and weaknesses of a dairy cooperative's financial condition can be determined. The term ratio refers to the numerical or quantitative relation ship between two items (Variables).

Cautions for Doing Ratio Analysis

Before discussing specific ratios, we should consider the following cautions (Lawrence J.Litmun)

- A single ratio does not generally provide sufficient information form which to judge the over all performance and status of the firm. Only when a group of ratios is used can reasonably judgment be made.
- The financial statements being compared should be dated at the same point in time during the year. If they are not, the effects of seasonality may produce wrong conclusions.
- It is preferable to use audited financial statements for ratio analysis. If the statements have not been audited, there may be no reason to believe that the data contained reflect the dairy cooperative true financial condition.

The basic sources of financial data are income statement, the balance sheet and the statement of cash flows.

Income statement

- Income statement is a summary of the profitability of the dairy cooperative over a period of time. It presents revenues generated during a certain period,

the expenses incurred during that period, and the dairy cooperatives net earnings or profits.

Balance sheet

- Balance sheet describes the financial condition of cooperatives at a particular time. The balance sheet is a list of the cooperative's assets and liabilities at that moment. The difference in assets and liabilities is the net value of the cooperative, also called equity.

3.4.1.1 Liquidity ratio – These are the ratios which measure the position of dairy cooperatives, these ratios are calculated to comment up on the paying capacity of the dairy cooperative or ability to meet its obligation.

Liquidity means

- The firm has adequate cash to pay for its bills
- The firm has sufficient cash to make unexpected large purchases, above all
- The firm has cash reserve to meet emergencies, at all times

The various liquidity ratios are **current ratio, liquid ratio and absolute liquid ratio**, the most common used liquidity ratio is current ratio because we can detect easily the financial status of the business and computed by dividing current asset by current liabilities as follows.

$$\textbf{Current ratio} = \frac{\textbf{Current asset}}{\textbf{Current liability}} \qquad \text{----------Eq (1)}$$

3.4.1.2 Financial leverage ratio – Shows the proportion of debt and equity in financing of the dairy cooperative. These ratios measure the contribution of financing by owners as compared to financing by outsiders. There are different

types of financial leverage ratio; **debt ratio** is the most commonly used as follows,

$$\textbf{Debt ratio} = \frac{\textbf{Total debt}}{\textbf{Total asset}} \qquad \text{---------- Eq (2)}$$

3.4.1.3 Profitability ratio –These ratios measure the results of overall performance of the dairy cooperative. These are the ratios required that the finance of the dairy cooperative accordingly used so as to yield the highest return. Profitability ratio is return on total asset among others; this is computed by dividing net income by total assets as follows,

$$\textbf{Return on total asset} = \frac{\textbf{Net income}}{\textbf{Total asset}} \qquad \text{----------Eq (3)}$$

3.4.2. Econometric Model Specification for performance of Dairy input and out put marketing

Models, that include a yes or no type dependent variable, are called dichotomous or dummy variable regression models in which determinants of an event happening or not happening are identified. These include the linear probability function, linear discriminant function, logistic distribution function (logit), and normal distribution function (probit). These functions are used to approximate the mathematical relationship between explanatory variables and dependent dummy variable, which is always, assigned qualitative values (Gujarati, 1988; Maddala, 1992)

In our study we need to explain the relationship of member's satisfaction in their dairy cooperative to use as marketing means or channel including the level and strength of member's satisfaction guide.

Discrete regression models are models in which the dependent variable assumes discrete values. The simplest of these models is that, where the dependent variable "Y" is binary i.e only two values denoted by 0 and 1(Amemiya, 1985; Gugarati, 1988 and Maddala, 1997). According to Amemiya (1985); Gugarati (1988) and Maddala (1997), the three most commenly used approaches to estimating such models are the Linear Probability Model (LPM), the logit model and the probit model. The Linear Probability Model is used to denote a regression model in which the dependent variable "Y " is a dichotomous variable taking the value 1 or 0. LPM has been used in econometric applications especially during and before the 1960s.

How ever, as indicated by Maddala (1977), Amemiya (1985) and Gujarati (1988) the linear probability model has an obvious deficiency in that estimated probability values can lie outside the normal 0-1 ranges. The fundamental problem with the LPM is that it is not logically a very attractive model because it assumes that the marginal or incremental effects of explanatory variables remain constant, that is pi = E (y=1/x) increases linearly with X (Maddala, 1997 and gujaratie, 1988).

The limitation of the linear probability model suggests that there is a need to have an appropriate model in which the relationship between the probability that an event will occur and the explanatory variables is non linear (Gujarati, 1988; Maddala, 1997).The authors suggested that the sigmoid or S-shaped curve, which very much resembles the Cumulative Distribution Function (CDF) of random variables, is used to model regressions where the response variable is dichotomous, taking 0-1 values. The Cumulative Distrubutions Functions (CDFs), which are commonly chosen to

represent the 0-1 response models, are the Logit (logistic CDF) model and the probit (normal CDF) Model.

Logit and Probit models are the convinent functional forms for models with binary endogenous variables (Johnston and dinardo, 1997). These two models are commonly used in studies involving qualitative choices. To explain the behavior of dichotomous dependent variable we have to use a suitably chosen Cumulative Distribution Function (CDF). The Logit model uses the cumulative logistic function. But this is not the only CDF that one can use. In most applications the normal CDF has been found useful. The estimating model that emerges from normal cumulative distribution function is popularly known as the probit model (Gujarati, 1995). The logistic and probit formulations are quite comparable, the chief difference being that the logistic has slightly flatter tails, which is the normal curve approaches the axes more quickly than the logistic curve. Therefore, the choice between the two is one of the mathematical convenience and ready availability of computer programs (Gujarati, 1988).

THE TOBIT MODEL

An extension of the probit model is the tobit model originally developed by

James Tobin, the Nobel laureate economist. To explain this model, the study of member's satisfaction dairy cooperatives based up on dichotomous regression models have attempted to explain only the probability of using the cooperative member satisfied amount of milk sold and dividend received through the cooperative. A strictly dichotomous variable often is not sufficient for examining the level of satisfaction. There is also a broad class of models that have both discrete and

continuous parts. One important model in this category is the Tobit2. Tobit is an extension of the Probit Model and it

is really one approach to dealing with the problem of censored data (Johnston and Dinardo,1997). Some authors call such models Limited Dependent Variable Models because of the restriction put on the values taken by the regressand (Gujarati, 1995).

Statistically, we can express the tobit model as

$Yi = \beta 1 + \beta 2Xi + ui$ if RHS > 0

Where RHS = right-hand side. Note: Additional X variables can be easily

added to the model.

A Tobit model was used in analysing factors affecting member's satisfaction. The key aspect of using the Tobit model is the use of latent quantities of amount of milk sold and dividend received of members. The dependent variable takes on positive and zero values. Censored at 0 and Tobit model is also known as censored regression model. Following

Tobin (1958), which is expressed as:

$Yi^* = \beta'0 + \Sigma\, \beta'i\, Xi + \epsilon i$ and ϵi is N $(0, \sigma)$……..…… .... (4)

Where $Y = Y^*$, if $Y^* > 0$, $Y=0$ if $Y^* < 0$ and $Y = \max (Y^*, 0)$

Yi^* represents dependent variable which contains observed and censored data, Xi represents a set of covariates and the reduced form equation depends on explanatory variables.

Specification of the Tobit Model

The econometric model applied for analyzing factors influencing members satisfaction in dairy cooperative is the Tobit model shown in equation (4). This model is chosen because, it has an advantage over other models (LPM, Logistic, and Probit) in that, and it reveals the probability of member's satisfaction.

Following Maddala (1992), Amemiya (1985) and Johnston and Dinardo (1997), the Tobit model can be defined as:

$Y_i^* = \beta X_i + u_i$ $\quad i = 1, 2 \ldots n$

$Y_i = Yi^*$ if $Y_i^* > 0$---------- (5)

$= 0$ if $Y_i^* \leq 0$

Where,

Yi = the observed dependent variable, in our case the members satisfaction.

Y_i^* = the latent variable which is not observable.

Xi = vector of factors affecting members' satisfaction.

ß = vector of unknown parameters

u_i = residuals that are independently and normally distributed with mean zero and a common variance.

Note that the threshold value in the above model is zero. This is not a very restrictive assumption, because the threshold value can be set to zero or assumed to be any known or unknown value (Amemiya, 1985). The Tobit model shown above is also called a censored regression model because it is possible to view the problem as one where observations of Y* at or below zero are censored (Johnston and Dinardo, 1997).

The model parameters are estimated by maximizing the Tobit likelihood function of the following form (Maddala, 1997 and Amemiya, 1985).

As cited in Maddala (1997), Johnston and Dinardo (1997), McDonald and Moffit proposed the following techniques to decompose the effects of explanatory variables into participation and intensity effects. Thus, a change in X_i (explanatory variables) has two effects. It affects the conditional mean of Yi in the positive part of the distribution, and it affects the probability that the observation will fall in that part of the distribution.

1. The marginal effect of an explanatory variable on the expected value of the dependent variable is:

$$\frac{\partial \mathrm{E}(Y_i)}{\partial X_i} = F(z)\beta i \quad \text{---------- (6)}$$

$$\frac{\beta_i X_i}{\sigma}$$

Where, σ is denoted by z, following Maddala, (1997)

2. The Change in the probability of participating in cooperatives as independent variable Xi changes is:

$$\frac{\partial F(Z)}{\partial X_i} = f(z)\frac{\beta_i}{\sigma} \quad \text{---------- (7)}$$

Using descriptive statistics it is also possible to compare and contrast different characteristics of the sample member households along with the econometric model. Hence, descriptive statistics such as mean, percentage and standard deviation are computed to analyze the collected data.

3.5. Definition of Variables selected

3.5.1 Dependent variable:

3.5.1.1. Members Satisfaction: The dependent variable in the study was performance of Dairy cooperative expressed by the degree of member's satisfaction. Satisfaction of members is a cumulative effect of provisions that they receive from their cooperatives including effectiveness of leadership; availability of input supplies; amount of product sold and market access.

Member's satisfaction was a dichotomous variable consisting of satisfied and unsatisfied members.

3.5.1.2.Amount of milk sold and dividend received: were used as complementary indicators of performance. Production beyond consumption has two fates based on various reasons; either sold as fluid milk or processed into different dairy derivatives. The processed part of the product is usually sold and what ever is left is used for home consumption. Production in turn varies directly with the number of crossbred and other lactating dairy cows. As the number of cows increases production, also increases and the percentage share of consumption declines and sales increases.

3.5.2. Independent Variables

The Independent variables selected for the study are as follows

X_1 = Age

X_2 = Gender

X_3 = Educational status

X_4 = Marital status

X_5 = Occupation

X_6 = Family size

X_7 = Proportion of female

X_8 = Duration of membership in dairy cooperative

X_9 = Availability of credit

X_{10} = Training undergone in relation to Dairy

X_{11} = Market accessible for dairy output

X_{12} = Leadership of the cooperative

X_{13} =Availability of infrastructure

X_{14} = Members Participation in the cooperative

X_{15} = Knowledge of members in dairy marketing

X_{16} = Contact with extension agency related to dairy marketing

Operational definitions of Dependent and Independent Variables

Dependent Variable – It is the performance of Dairy cooperative marketing **Member's satisfaction –** is members' obtained satisfaction from their cooperative services. Performance is expressed by the degree of member's satisfaction.

Independent Variables

The independent variable was expected to influence by a various factors of the member's satisfaction and their explanations as follows.

- **Age** – Age is a continous independent variable operationalised as the number of years the respondent has completed at the time of interview.

- **Gender –** Gender is a discreet independent variable to the sex of the respondent whether male or female.
- **Educational status –** Education is a discreet variable to the formal years of schooling the respondent has undergone.
- **Marital status –** Refers to whether the respondent is single, married, divorced or widowed.
- **Occupation –** Indicates whether the respondent is Government employee or employed in NGO, Cooperative, Farming, or employed as laborer or self-employee.
- **Family size –**Family size is a continuous independent variable to the number of members in the family including children, adults and dependent.
- **Religion –** refers to the respondent's adherence to the particular sector, that is, whether they are Christians, Muslims or any other religion.
- **Duration of membership in dairy cooperative –**Membership duration is a continuous independent variable to the number of years the respondent was a member in the cooperative.
- **Availability of credit –** It refers to the availability of credit, the data is on whether the credit is accessible or not.
- **Training undergone in relation to Dairy –** This refers to the question whether the respondent has undergone any training in relation to Dairy.
- **Market access** – Market access is a discreet independent variable to the access of market for the dairy output
- **Leadership effectiveness –** It refers to the effectiveness of the leaders of the dairy cooperative in promoting the performance.

- **Availability of infrastructure –** It means the access to infrastructure with respect to power, telecommunication and roads etc.
- **Members' Participation in the cooperative -** It refers to whether the respondent has participated in monthly meetings of the cooperative, in the planning and implementation of dairy marketing programs, in fund collection and decision making activities.
- **Cooperative Age (COOPAGE)** – Cooperative age means the number of years a cooperative has completed at the time of the compilation of data collection and it is a continuous variable.

Chapter IV

Results and Discussion

The results of Focus group discussion; cross sectional survey and personal observation are presented and discussed in this chapter. The descriptive analyses were done to describe the general characteristics of members of dairy cooperatives. The econometric analysis was done to identify determinants of performance of dairy cooperatives.

4.1. Focus Group Discussion

In all the FGD, the points raised were similar and are summarized as follows

4.1.1. Advantages and Performance of cooperatives

All members understood the advantages and benefits of being organized in a cooperative, rather than on be on your own. They stated that cooperative members received training and some supportive ideas. Most importantly there was a change in attitude and practice. Selling milk and milk products used to be cultural taboo, but nowadays people understood the economic benefits and are openly selling and buying milk and milk products.

The Co-operatives are not performing as well as expected for reasons which have to do with awareness and knowledge; Input supply such as credit, breed and feed and difficult market access under developed infrastructures.

4.1.2. Challenge to Dairy Cooperative

Credit is most of the time available, however the loan repayment period is short and the interest rate is high which is at times prohibitive for members from taking credit.

The cost and non availability of breed are the major problems. The average cost of exotic breed cow is 10,000 Birr which is beyond the capacity of many; even if one can afford they are not available in the area, they have to bring them from places like Addis Ababa.

Lack of feed and its cost is one major problem that may threaten the very existence of the Dairy co-operative and farming. The area is an arid zone with shortage of rain fall which results in poor grazing land. In addition, Dairy farmer's attempts to grow quality feed such as Alfa-Alfa, Lucinea, Suspenea have been aborted by the lack of water. In the market the quality feed mentioned are not available and cooperative members shift to buy poor quality fodder which has a negative bearing on the milk yield of the cows. They also have shortage of land to plant quality feed. The other challenge is the non availability of Veterinary services at all times, particularly during the weekends and holydays. Cows bought at very high prices may have difficulties as the veterinary services are not available; we loose calves and thus the milk which is economically and morally devastating to the owner. Not, stopping there, these phenomena pass the wrong message to potential dairy farmers.

Poorly developed infrastructure particularly roads are major challenges, in that area feed has to be brought in and product has to be taken on foot and some times on horse carts. This exposes them to unnecessary expenses and loss of time as well as energy.

Lack of electric power, limited capacity to store their products and the lack of telecommunications are also serious problems for marketing transaction. There are no

organised and established markets for milk and milk products, there are no milk processing plants, the product is sold either directly or through the cooperatives to consumers like cafeterias, hotels and house holds. The main problem is that there is long Christian fasting period accounting for almost 51% of a year, during this time milk and other animal products are not consumed by the followers. During this period there is wastage of milk.

4.1.3. Suggestions of Participants of FGD

At the end of the discussions the participants recommended the following:

- Government has to pay attention and improve access to roads, power and telecommunications are to function better.
- Credit services to be available at lesser interest rate and longer repayment period.
- Establishment of quality feed source in the vicinity.
- To make available breed cows in our area.
- Improve the veterinary services to cover the week ends and holidays so as to avoid unnecessary loss of calves.
- Continuous supportive supervision by experts, professionals.

4.2 Performance of Dairy cooperatives

4.2.1 Members satisfaction

The dependent variable in the study was performance of Dairy cooperative expressed by the degree of member's satisfaction. Satisfaction of members is a cumulative effect of provisions that they receive from their cooperatives including effectiveness of leadership; availability of input supplies; amount of product sold

and market access. Member's satisfaction was a dichotomous variable consisting of satisfied and unsatisfied members.

In this study there was a significant difference in members' satisfaction among the cooperatives. Hadnet which had six members had the highest member satisfaction rate (100%), followed by Desta (94%) while Fireweini and semret had the highest unsatisfied members. The most probable reasons for the higher satisfaction rate among the members of Hadnet (Atsbi) were that they had effective leadership; relatively higher sale of milk and dividend received. On the other hand Semret (Atsbi) and Fireweini have very low satisfaction rate while the members of the former have produced and sold milk they did not receive any dividend. In addition, the members lack transparency and mutual trust. The later Fireweini has not started marketing products yet which probably was the main reason for not being satisfied.

Table – 3 Member's satisfaction by cooperative

Cooperative	Satisfied	Unsatisfied
Hadnet	6 (100%)	0 (0%)
Desta	49(94%)	4(8%)
Kisanet	9(60%)	6(40%)
Zelalem	7(41%)	10(59%)
Werile**	4(40%)	6(60%)
Semret	1(20%)	4(80%)
Fireweini**	0(0%)	10(100%)

Source: Primary data collected through field survey (Jan, 2008)

** Cooperatives that have not started marketing until the end of the date of data collection

Amount of milk sold and dividend received: were used as complementary indicators of performance. Production beyond consumption has two fates based on various reasons; either sold as fresh milk or processed into different dairy derivatives. Mean milk sold and dividend were calculated for the whole sample and for each cooperative. In addition, percentage of members who sold below and above the

sample mean were calculated taking the sample mean as a cut of point to see what proportion of the members of each cooperatives was above or below the sample average.

The average milk sold for all cooperative was 1255 birr, 6120 birr for Hadnet and 2700 birr for Semret making them first and second; the last being Kisanet with 101 birr. All members (100%) of Semret and Hadnet sold above average again followed by Desta 36.% while none of the members of Kisanet had sold above average. Members of werile and freweini had not started marketing up till the end of data collection period.

Table – 4 Average milk sold by each cooperative

Cooperatives	**Total members**	**Milk sold in birr**		
		mean	**%>mean****	**%< mean****
All coopes	116	1255**	36 (31%)	80 (69%)
Semret	5	2700	5 (100%)	0 (0%)
Hadnet	6	6120	6 (100%)	0 (0%)
Desta	52	1546	19 (36.5%)	33 (63.4%)
Ferweini***	10	00	00	10 (100%)
Kisanet	14	101	0 (0%)	14 (100%)
Zelalem	17	649	2 (11.7%)	15 (88.2%)
Weriele***	10	00	00	10 (100%)

Source: Source: Primary data collected through field survey (Jan, 2008)

** Mean of the total sample, *** Cooperatives which did not start marketing

Dividend

The cooperatives buy milk from members at a fixed price that has been agreed upon by all members. The cooperatives then sell the dairy product either as fresh milk or traditionally processed product such as butter, yogurt, butter milk and cheese at market price. Thirty percent of the profit is retained for expansion purposes, the remaining 70% is divided according to contribution of members.

The same procedure applied to the amount of milk sold was applied to the dividends also. Accordingly the average dividend received by all cooperative members was found to be 428, birr 91% had dividends less than the mean and only 9% had received above the sample mean. All five of the members of Hadnet had received 5000 birr while most of the members of the rest of the cooperatives had received less than the sample average. Only one person from, Kisanet and Zelalem and 2from Desta had dividends more than the sample average. Some members of cooperatives have stated that the price for their milk that the cooperative offer is less than what they could get if they sold their product directly to consumers, thus there is a tendency to sell milk partly directly to consumers and some to their cooperatives. This is a vicious cycle where the cooperatives' profitability is negatively affected which in turn reduces the dividend received by members and therefore members loose confidence in the successfulness of the cooperatives. The reason why Hadnet is best performing cooperative is that unlike the others, the cooperative is using its members to carry out all activities which saves them extra expenses while the others have employees. In addition Hadnet has very effective leadership and high member participation.

Table – 5 Average dividend received by members of cooperatives

Cooperatives	Total members	Dividend received in birr		
		mean	%>mean**	%< mean**
All coopes	96	428**	9(9.3%)	87 (86.7%)
Semret	5	00	0%	0 (100%)
Hadnet	6	5000	100%	0 (0%)
Desta	52	143	2(3.8)	51 (96%)
Ferweini***	10	00	00	10 (100%)
Kisanet	14	42	1 (7.1)	13 (92.8%)
Zelalem	17	176	1 (5.8)	16 (94.1%)
Weriele***	10	00	00	10 (100%)

Source: Primary data collected through field survey (Jan, 2008)

** Mean of the total sample ***Cooperatives which did not start marketing

4.3 Financial ratio analysis

Financial ratio analysis is a widely used tool for financial analysis. It is defined as the systematic use of ratio to interpret the financial statements of a business so that the strength and weaknesses of a dairy cooperative financial condition can be determined. The term ratio refers to the numerical or quantitative relation ship between two items (Variables). The satisfactory rate of current ratio that is accepted by most lenders as condition for granting or continuing commercial loan is 2.00. It assumes that there is audited and documented financial report of all incomes, expenses, profit, liabilities and assets. In this study four cooperatives all from Enderta have no audited financial report and therefore it was impossible to compute the financial ratio analysis. Of the

remaining three cooperatives, Semret had audited report for the year 2005 that is two years before the study period; Hadnet from the same woreda, Atsbi has been audited in the same year 2005 and again in 2007. The third Desta from alamata was audited only in 2007; although the years of report were not the same, the researcher has taken the available reports for analysis.

4.3.1. Liquidity ratio could only be computed for Desta only for the year 2007 and it was 36.5 (current asset/liability= 21945birr/600 birr). The other two cooperatives had no liability which makes computing liquidity ratio mathematically impossible. This implies that the cooperatives were reluctant to take credit to expand as well as diversify their businesses. On the other hand what ever available capital they raised was either underutilized or spent on current needs while it could have been used again for lasting investments.

4.3.2. Debt ratio was not analyzed for all cooperatives because none of the cooperatives have complete and audited financial reports on the components required to compute debt ratio such as total debt (liability and owners equity) and total assets.

4.3.3. Profitability ratio has been computed for the three cooperatives but for different period of time with a gap of two years in between (2005 and 2007. Table 5 reveals that Hadnet has improved its profitability from a net loss of 5% to a profit of 5%. The two others could not be evaluated for time trend, however for the years audited, Semret has a net loss of 5% and Desta has profited 56%. Apparently there is difference in profitability among the audited cooperatives and also an improvement in profitability over time of one of the cooperatives (Hadnet). The fact that this particular

cooperative had been audited twice more than the others and that there is better management and leadership of this cooperative partly accounts to the improvement over time. The fact that Desta in Alamata had better profitability than Semret may be explained by the difference in distance to the source of feed (which comes from Addis minimizing expenses) and due to larger consumer population in Alamta than Atsbi (which provides better market for dairy products). Besides, differences in leadership and management may contribute to the differences in profitability.

Table 6 Profitability ratio of cooperatives with audited financial report

Name of cooperative	Profitability ratio (net profit/total asset)		
	2005	2006	2007
Semret	-0.05	--	--
Hadnet	-0.05	--	0.05
Desta	--	--	0.56

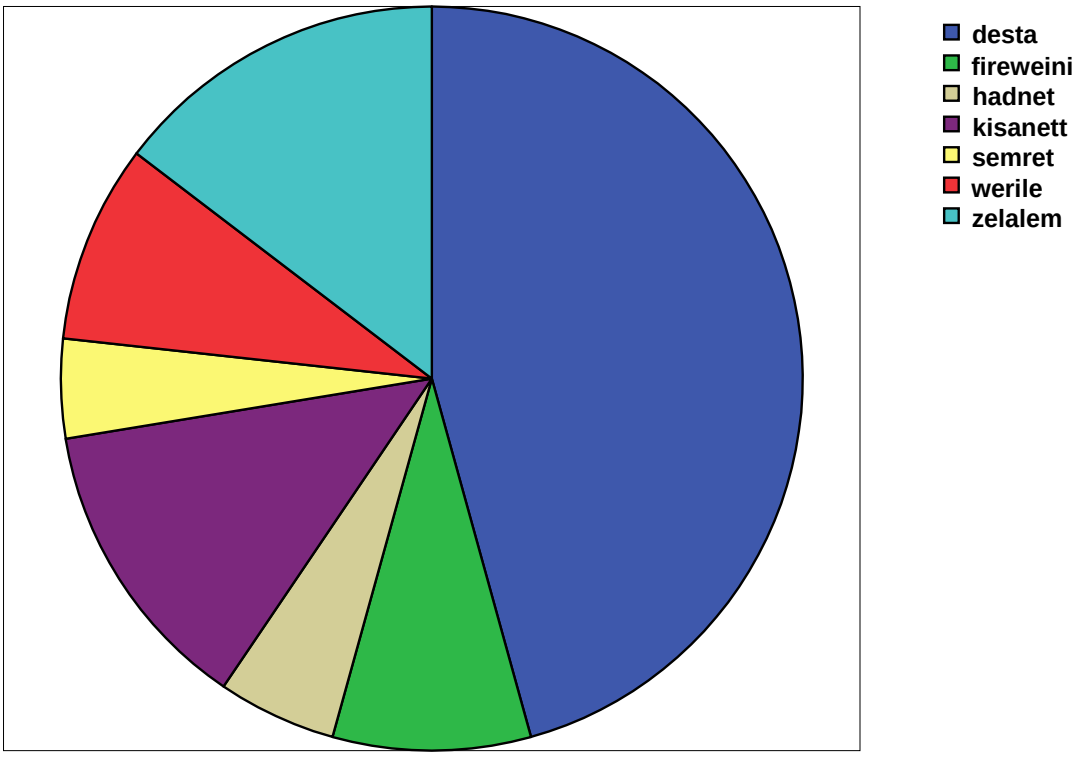
4.4 Descriptive Analysis

Simple statistics such as frequencies, percentage and mean were used to describe the socio-demographic profile of respondents and Chi – square to establish the association of the explanatory variables with the dependent variable. The significance of this association was analyzed using the Probit and Tobit models which will be presented later in this chapter.

4.4.1 Socio-Demographic characters of respondents

Out of a total of 238 dairy farmers in the seven cooperatives 116 were selected proportionately from the three woredas located in the south and eastern zones of Tigray out of which 46% were from Alamata, 44.4% from Enderta and 9.4% from Atsbi in the East.

Figure - 3 Cooperative and their members



4.4.1.1 Age of respondents

It was revealed that 74 percent of the respondents were in the age group of 36-50 and 18% were in the age group of 15-35. It was further found out that, members' satisfaction decreases from 80% to 33% as age increases from 15 to 67 years (X^2 =5.98) (appendix-1). This might be because dairy farming is labour intensive and old people are at a disadvantage to conduct their business for reasons of physical difficulties.

Table – 7 Respondents by age group

Age	Frequency	Percent
Age 15 – 35	20	18
Age36-50	87	74.3
Age 51-67	9	7.7
Total	116	100.0

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.2 Gender of respondents

It was found that majority of the respondents (53%) were females, while 47% were males. Satisfaction rate among males was less 48% while among females it was 85%, (X^2 =17.1) (appendix-1). Males and females process dairy products in the household in the district, when the family has abundant female labour then processing predominantly becomes the task of females.

On the other hand, when a family faces shortage of female labour, males get involved in dairy processing activities.(G. Getaneh , 2005). In addition, females are generally good managers of resources of the household therefore their satisfaction is higher.

Table – 8 Gender of respondents

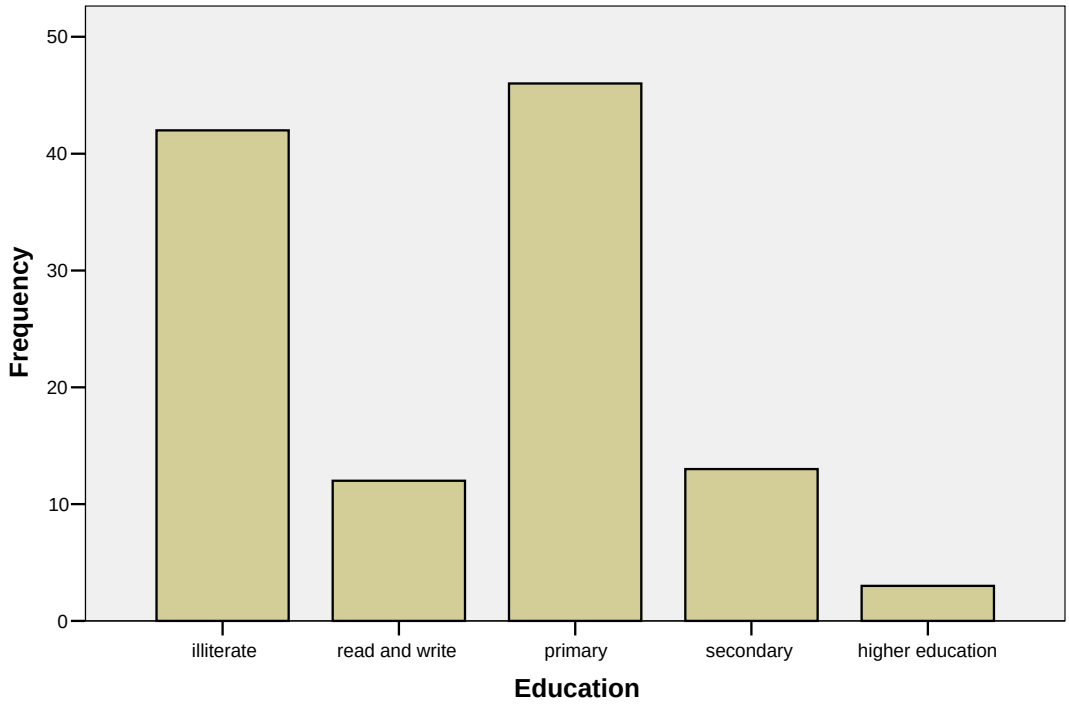
Sex	Frequency	Percent
Male	62	53.0
Female	54	46.2
Total	116	100.0

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.3 Educational status

It was found out that 39.3% of the respondents had only primary education. About 36 percent of the respondents were illiterate. Only 2.6% of them had higher education

Figure -4 Level of education of respondents



Source: Primary data collected through field survey (Jan, 2008)

4.4.1.4. Marital status

Most of the members (81.2%) of all the dairy cooperatives were married. Twelve percent were widowed and 4% were divorced.

Table – 9 marital statuses of respondents

Marital status	Frequency	Percent
Married	95	81.2
Divorced	5	4.3
Widowed	14	12.0
Single	2	1.7
Total	116	100

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.5 Occupation of respondents

It was found that majority of the respondents were farmers. Government and non government employees constituted only 22.2 percent.

Table – 10 Occupation of respondents

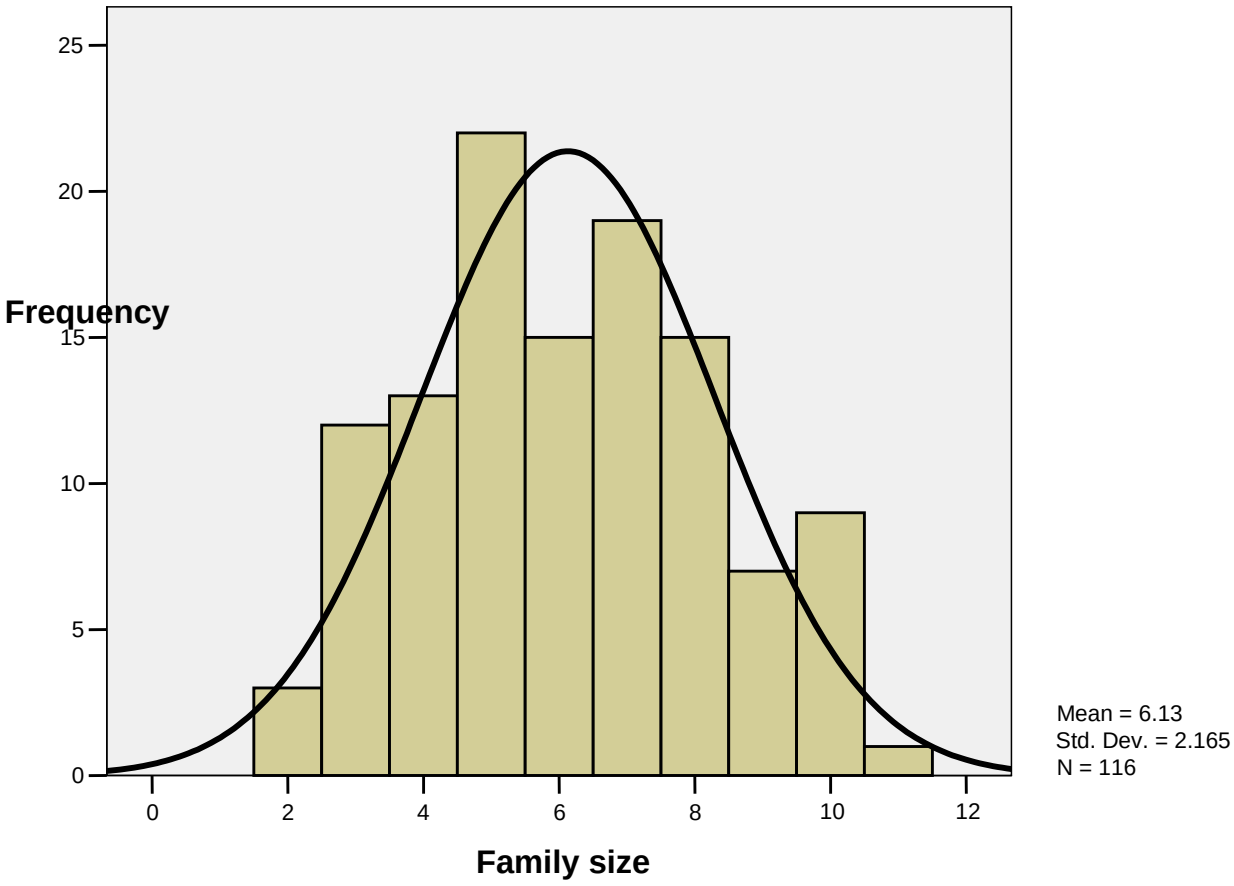
Occupation	Frequency	Percent
Farmer	86	73.5
Non gov. and gov. employee	26	22.2
Others	4	3.4
Total	116	100

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.6. Family size

Table 11 reveals that majority of the respondents (59.8%) had a family size of 5-8 members. The majority of the members that is more than 90% are Christians.

Figure 5 Family size of households of respondents



Source: Primary data collected through field survey (Jan, 2008)

4.4.1.7 Duration of membership

It was found out that majority of the respondents (77.8%) have stayed more than three years as members in the dairy cooperatives.

Table –11 Duration of Membership

Duration	Frequency	Percent
<1 year	5	4.3
1-2 years	20	17.1
>3 years	91	77.8
Total	116	100

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.9 Cooperative related training undergone

Nearly 79% of the dairy cooperatives members have participated in cooperative oriented trainings. In addition, the leaders have participated in workshops and experience sharing tours to similar cooperatives in other places such as Debrezeit.

Table – 12 Dairy cooperative related training

Did you receive dairy cooperative related training	Frequency	Percent
Yes	92	79.3
No	24	20.7
Total	116	100.0

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.10 Availability of market information

The cooperatives have delivered market oriented information to 78% of the respondents on topics including what to do when the demand to fresh milk decreases during the Christian fasting periods and the advantages of being organized in a cooperative. This has to some extent saved them from wasting milk in the sense that

they traditionally change the perishable fresh milk into butter, yogurt and butter milk for sale.

Table – 13 Availability of market oriented information

Did you receive market oriented information	Frequency	Percent
Yes	90	78.3
No	25	21.7
Total	115	100.0

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.11 Access to market for dairy products

Nearly 60% of the members stated that they have no market access for their products; 40 % said they have very good access.

Table – 14 Access to market

Market access for dairy product	Frequency	Percent
very good	47	40
no market access	69	60
Total	116	100

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.12 Leadership effectiveness

The leadership was effective according to 67% of respondents and in effective by the remaining 33%. The percentage of satisfied respondents among those who said their

leadership was effective was higher (77%) than among those who said they have ineffective leadership (42%).(X^2 =24) (appendix-1).

Table -15 How effective is the leadership

Leadership effectiveness	Frequency	Percent
In effective	38	32.7
Effective	78	67.3
Total	116	100.0

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.13 Availability of infrastructure

In all the cooperatives, the development of infrastructure such as roads, power and telecommunication was described as non existent by 91% and only 9% had some access.

Table – 16 Availability of Infrastructure

Infrastructure	Frequency	Percent
Yes	10	8.6
No	106	91.4
Total	116	100.0

Source: Primary data collected through field survey (Jan, 2008)

4.4.1.14 Members' Participation

It was revealed that 88% of the members participated regularly and 12% attended rarely in the meetings of cooperatives to decide, plan and implement cooperative functions.

Table- 17 Members' participation

What is your level of participation	Frequency	Percent
Rarely	14	12.0
Regularly	102	88
Total	116	100.0

Source: Primary data collected through field survey (Jan, 2008)

4.5. Factors Affecting performance

Independent variables which are expected to either positively or negatively affect dairy cooperatives' performance were analyzed using chi square as a measure of association and (p-value) 5% level of significance. Out of fourteen explanatory variables five had statistically significant effect on the degree of level of satisfaction of cooperative members. The variables were gender, availability of credit, training of members, availability of infrastructure and members' participation in cooperatives affairs (table -18).

Gender: The proportion of satisfied females was higher than males 85% versus 48% respectively (X^2 =17.1, p=0.016), (table-18). Milk processing in the district household is predominantly task of females and only when a family faces shortage of female labour, do males get involved in dairy processing activities.(G. Getaneh, 2005). This cultural attitude of society might have contributed to the difference in satisfaction. In addition, females are generally good managers of resources of the household and are expected to spend the hard earned money on things and purposes that change the livelihood of the household that are satisfying.

Availability of credit: Financial credit is an important input to the dairy farmer and cooperative to buy exotic breed, feed and cover all sorts of expenses. Its availability or non availability may mean success or failure to the cooperatives. In this study, members who had access to financial credit had higher satisfaction than those who did not 84% and 56% respectively (X^2 5.01, p-0.028, Table-18)

Members training: Participation of members in dairy and cooperative related training has a positive impact on the satisfaction of members of cooperatives**.** 74% of members of cooperatives who underwent training were satisfied compared to only 34% (X^2 13.8, p-0.031, Table-18) of those who did not under go training. The success thus obtained through training is a reason for higher satisfaction.

Availability of infrastructure: Infrastructure development particularly roads and transport system is critical to dairy cooperatives. In this study, majority of the cooperatives had no access to basic infrastructure such as roads of those who had no access to roads 95% were unsatisfied compared to 39% of those who had access (X^2 8, p-0.0.099, Table-18). The reason for low rate of satisfaction is apparent in that those cooperatives that have no access to roads are exposed to unnecessary expenses; wastage of energy and time are disappointed at their losses and thus dissatisfied.

Members' participation: The higher the members' participation in cooperative affairs, decision making and general issues, the higher is the members' satisfaction (X^2 3.8, p-0.0.021, Table-18). Members' participation is strength to the cooperatives in decision making, milk production, marketing and diversification of business at the same time active participation of members keeps them involved and aware about their

cooperatives which in turn boosts sense of ownership. The cumulative effect of increased cooperative productivity and being aware about it is higher degree of satisfaction.

Table-18 Factors affecting members satisfaction

Factors affecting members satisfaction		% satisfied)	% unsatisfied	X^2	p-value
Age in years	15-35	80	20	5.98	0.929
	36-50	66	34		
	51-80	33	67		
Gender	Male	48.4	51.6	5.98	0.016**
	Female	85	15		
Marital status	Married	59	41	10.13	0.086
	Divorced	100	0		
	Widowed	93	7		
	Single	100	0		
Occupation	Farmer	64	36	1.5	0.766
	Gov/NGO employee	70	30		
	Others				
Religion	Christian	62	38	6.4	0.564
	Muslim	100	0		
Duration of membership	<1 year	80	20	13.6	0.355
	1-2 years	30	70		
	>2 years	73	27		
Availability of credit	Yes	84	16	5.019	0.028**
	No	56	44		
Members training	Yes	74	26	13.8	0.031**
	No	34	66		
Market access	Yes	72	28	20	0.390
	No	40	60		
Leadership effectiveness					
	Ineffective	42	58	24	0.241
	Effective	77	23		
Infrastructure	yes	39	61	8	0.099*
	No	5	95		
Members participation	Yes	50	50	3.5	0.021**
	No	68	32		
Educational status	Illiterate	77	23	6.5	0.260
	Read and write	67	33		
	Primary	53	47		
	Secondary	77	23		
	Higher education	67	33		
Family size	1-4	76	26	5.9	0.409
	5-8	67	33		
	$\geq$ 9	42	58		

Source: Primary data collected through field survey (Jan, 2008)

4.6 Knowledge of members about dairy farming

Respondents were assessed about their knowledge about dairy farming using a list of ten questions each with equal value and graded out of ten; 76.7 % scored ten, only 2% scored less than 7/10. So majority of the respondents had higher level of knowledge about dairy farming.

Table – 19 Cooperative members' knowledge regarding dairy farming

Knowledge score out of 10	Frequency	Percent
5.00	1	.9
6.00	1	.9
7.00	2	1.7
8.00	4	3.4
9.00	19	16.4
10.00	89	76.7
Total	116	100.0

Source: Primary data collected through field survey (Jan, 2008)

4.7 Constraints with respect to quality feed and breed

Cooperative members were asked to rank constraints regarding feed supply and breed in order of importance. The five most important constraints regarding feed supply were high Cost of feed, non availability of feed; high cost of transport , weather changes and distance to source of feed, in that order. On the other hand, knowledge and handling of feed were ranked as the least important factors affecting dairy farmers.

Table – 20 Constraints regarding the feed supply

Potential constraint Regarding feed supply	Importance			
	Most important 3	Important 2	Not important 1	Index of constraints of feed supply
Price of feed	95 (81.2)	12 (10.3)	9 (7.7)	0.114
Transport cost	94 (81)	11 (9.5)	11 (9.5)	0.113
Availability of feed	92 (78.6)	10 (8.5)	14 (12)	0.111
Weather changes	92 (78.6)	10 (8.5)	14 (13)	0.111
Distance to source of feed	82 (70)	13 (11)	21 (19)	0.105
Availability of technical support	46 (39.3)	8 (7)	62 (54)	0.07
Improper handling of feed	37 (31.6)	14 (12)	65 (56.4)	0.07
Poor knowledge regarding feed	36 (31)	9 (8)	71 (61)	0.07

Source: Source: Primary data collected through field survey (Jan, 2008)

4.8. Constraints regarding breed

The three most important constraints with respect to breed were lack of breed; non-availability of insemination centres and veterinary services. Members of dairy cooperatives are well aware of the importance of breed; only 23 % consider the lack of it a problem.

Table - 21 Constraints regarding the breed

Constraints regarding breed	Importance			Index
	Most important	important	Less important	
Availability of breed centres	92 (78.8)	10 (8.7)	14(12.5)	0.111
Availability of veterinary services	64 (55)	6 (5.3)	46(39.7)	0.08
Availability of insemination centres	63 (54)	3 (2.8)	50(43.2)	0.088
Availability of credit	49 (41)	1 (.9)	66(58)	0.077
Cost of consultancy	43 (37)	6 (5)	67(58)	0.074
Awareness of importance of breed	27 (23.4)	5 (4.5)	84(72.1)	0.062
Misperception of breeds	24 (21)	4 (3)	88(76)	0.06
Peer influence	18 (15)	4 (3.4)	94(81.6)	0.056

Source: Source: Primary data collected through field survey (Jan, 2008)

4.9. Econometric model analysis

The econometric analysis was done to identify determinants of performance of dairy cooperatives. The Tobit model was analyzed. The explanatory variables were checked for being of multicollinearity and hetroscedasticity.

Very often, data we use in regression analysis cannot give decisive answers to the question we pose. This is because the standard errors are very high or the t-ratios are very low. This situation occurs when the explanatory variables display little variation

and/or high intercorrelations. The situation where the explanatory variables are highly intercorrelated is referred to as Multicollinearity (Maddala, 1992).

Before running the model, all the hypothesized explanatory variables were checked for the existence of multicollinearity problem. There are two measures that are often suggested to test the existence of multicollinearity.

These are: Variance Inflation Factor (VIF) for association between the continuous explanatory variables and Contingency Coefficients (CC) for dummy explanatory variables.

The technique of variance inflation factor was working to detect the problem of multicollinearity between the continous variables, According to Maddala (1992), VIF can be defined as: $VIF\ (Xi) = 1/1\text{-}R^2$

Where Ri^2 is the squared multiple correlation coefficient between Xi and the other explanatory variables.

The highest the value of VIF (Xi) the more difficult or collinear the variable Xi is. As a rule of thumb, if the VIF of an explanatory variable greater than 10, there is a multicolinearity problem.

Table- 22 Variance Inflation Factor for Continous independent Variables

S.No	Independent Variables	R^2	VIF
1.	MEMEDUCA	0.053**	1.055
2.	MEMFAMISI	0.036	1.037
3.	MEMDUN	0.107*	1.119
4.	COOPAGE	0.214*	1.271

Sources: Primary data collected through field survey (Jan, 2008)

* Significant at 1% level

* Significant at 5% level

Similarly, contingency coefficients were computed to check the existence of multicolinearity problem among the discrete (Dummy) explanatory variables. The contingency coefficient is computed as.

$$C = \sqrt{\frac{\chi^2}{N + \chi^2}}$$

Where, C= Coefficient of contingency

X^2 = Chi-square random variable and

N = total sample size.

The decision rule for contingency coefficients states that values less than 0.75 mean there is no problem of multicolinearity. When the contingency coefficient approaches 1, it indicates that there is a problem of multicollinearity between the discrete variables. The result in **table 23** indicate that the discrete explanatory variables had no problem of multicolinearity. One of the assumptions in regression analysis is that the

errors ui have a common variances 2 .If the errors do not have a constant variance we say they are heteroscedastic (Maddala, 1992). In the general linear model, OLS estimates are consistent but not efficient when the disturbances are heteroscedastic. In the case of the limited dependent variable models (such as Tobit), the estimate of the corresponding regression coefficient is upward biased in the presence of heteroscedasticity. But nothing can be said about the other coefficients and the direction of the bias. It is more practicable to make some reasonable assumptions about the nature of heteroscedasticity and estimate the model than just to say that Maximum Likelihood estimates are inconsistent if heteroscedasticity is ignored (Maddala, 1997).

Table 23 Contingency coefficient of discrete independent variables

	MEMSEX	MEMCREDIT	MEMTRAINING	MARKACC	MEMPARTICIP
MEMSEX	1	0.106	0.134	0.411	0.096
MEMCREDIT		1	0.12	0.284	0.25
MEMTRAINING			1	0.205	0.165
MARKACC				1	0.235
MEMPARTICIP					1

Sources: Primary data collected through field survey (Jan, 2008)

4.9.1 Determinants of Performance

A total of 14 independent variables were considered in the econometric model. Out of the independent variables, six were found significantly affecting the satisfaction out of which four were discrete and two were continuous. The

dependent variable in the study was performance of Dairy cooperative expressed by the degree of member's satisfaction. Satisfaction of members is a cumulative effect of provisions that they receive from their cooperatives including effectiveness of leadership; availability of credit; amount of milk sold and market access. Member's satisfaction was a dichotomous variable consisting of satisfied and unsatisfied members.

Sex (MEMSEX) – Signifies the gender of the respondent. The proportion of satisfied females is 0.39 times higher than the proportion of satisfied males (significant at 5% level) (Appendix 1). Milk processing in the district household is predominantly task of females and only when a family faces shortage of female labour, do males get involved in dairy processing activities. (G. Getaneh, 2005). This phenomenon creates strong bondage between females and dairy farming and an acute sense to appreciate the benefits of Dairy farming and cooperation. This cultural attitude of society might have contributed to the difference in satisfaction among male and female members of cooperatives. In addition, females are generally good managers of resources of the household and are expected to spend the hard earned money on things and purposes that change the livelihood of the household and are satisfying.

Availability of Credit (MEMCRDI) – This was another important factor which is expected to crucially influence members' satisfaction. In this study, cooperative members who had access to credit had 0.32 times higher satisfaction than those with no access to credit (significant at 5% probability level) This indicates an increase in members' access to credit increases the likelihood of satisfaction by .32. Financial credit is important for business in general and small holder dairy farm cooperatives

where capital unlike big businesses is scarce. The lack of it may be a threat to the very existence of cooperatives for everything from exotic breed to feed and other transactions heavily depend on it. Thus the low rate of satisfaction among those who have no access to credit is probably a result of lower financial capacity.

Members Training (MEMTRAINING) – Training of members of cooperatives regarding dairy farming; cooperative function and related issues should be part and parcel of the general effort of boosting the performance of cooperatives. As part of the general endeavor to improve their productivity and marketing capability, the cooperatives in the study area had provided such training to their members. However not all members participated in the trainings. This study shows that training positively influences the satisfaction rate of members by 0.89 (Significant at 5). This means those who are trained had 0.89 times more satisfaction rate than those not trained.

Infrastructure (MEMINFSCTURE) –Well developed and accessible roads transport system, communications and power are key infrastructure requirements for any investment or development. In our study area, people have little access to power and telecommunication facilities. Some of the cooperative members have to roads and proper transport system. The lack of roads negatively influences the satisfaction of the cooperative members (- 0.323, Significant at 10%).

Members' Participation (MEMPARICIP) – Members' participation signifies the involvement of members in the decision making, regular meeting, planning and implementation of issues relevant to the cooperatives. The higher the members'

participation in cooperative affairs, decision making and general issues, the higher is the members' satisfaction. Active participation of members keeps them involved and aware about their cooperatives which in turn boost sense of ownership. The cumulative effect of increased cooperative productivity and being aware about it is higher degree of satisfaction. In this study it was revealed that the higher the participation, the higher the degree of satisfaction (0.216 fold, at 5% significant level)

Cooperative Age (COOPAGE) – Cooperative age means the number of years a cooperative has completed at the time of the compilation of data collection and it is a continuous variable. This study reveals that cooperative age is positively associated with members' satisfaction. As the cooperative age increases by one unit, members' satisfaction increases by 1.522 units (Significant at 1%). At the initiation period of cooperatives there is higher demand for capital investment, time and other resources where as milk production and sell does not happen parallel to the expenses. In addition like any business there are uncertainties about the success of a new cooperative. As time goes and the cooperative pass through the ups and downs, the success and failures and surmount the challenges as well as begin to taste the fruits of their hard work, member's satisfaction also commensurately increases. These probably are the main reasons for the increased satisfaction with cooperative aging.

Chapter V

Conclusion and Recommendations

5.1. Conclusion

This chapter consists of the conclusions drawn from the study. Recommendations are provided for interventions that enhance the efficiency of dairy cooperative in increasing their products; in marketing them and in getting sufficient inputs.

Ethiopia holds large potential for dairy development due to its large livestock population; the favourable climate for improved and the relatively disease-free environment for livestock. The development of dairy cooperative in Ethiopia indicates that there is a need to focus interventions more coherently. Development interventions should be aimed at addressing both technological gaps and marketing problems. Integration of crossbred cattle to the sector is crucial for dairy development in the country.

From the Tigray region of Ethiopia, the woredas Atsbi, Alamata and Enderta were purposely selected because there are dairy cooperatives with good potential in those woredas and thus a felt need for studying their performance by the cooperatives agency of Tigray region. All dairy cooperatives within the three woredas were included except one. From the total 240 members of the seven dairy cooperatives in the three woredas, a random sample of 120 respondents was selected based on probability proportionate to size (PPS). During the survey four people were not present on repeated visits and were excluded from the study.

The dependent variable in the study was performance of Dairy cooperative expressed by the degree of member's satisfaction; a dichotomous variable consisting of satisfied and unsatisfied members.

In this study it was found out that the cooperatives had significant difference in performance. Hadnet which had six members had the highest member satisfaction rate (100%), followed by Desta (94%) while Fireweini and semret had the highest unsatisfied members. The most probable reasons for the better performance among the members of Hadnet (Atsbi) were that they had effective leadership; relatively higher sale of milk and dividend received. On the other hand, Semret (Atsbi) and Fireweini have very low satisfaction rate while the members of the former have produced and sold milk they did not receive any dividend. In addition, the members lack transparency and mutual trust. The later, Fireweini, has not started marketing products yet which probably was the main reason for low member satisfaction.

Mean milk sold and dividend were calculated for the whole sample and for each cooperative. In addition, percentage of members who sold below and above the sample mean were calculated taking the sample mean as a cut of point to see what proportion of the members of each cooperatives was above or below the sample average.

The average milk sold for all cooperative was 1255 birr, 6120 birr for Hadnet and 2700 birr for Semret making them first and second; the last being Kisanet with 101 birr. All members (100%) of Semret and Hadnet sold above average again followed by Desta 36.% while none of the members of Kisanet had sold above average. Members of werile and freweini had not started marketing up till the end of data collection period.

The average dividend received by all cooperative members was found to be 428 birr 91% had dividends less than the mean and only 9% had received above the sample mean. All five of the members of Hadnet had received 5000 birr while most of the members of the rest of the cooperatives had received less than the sample average.

Only one person from, Kisanet and Zelalem and two from Desta had dividends more than the sample average. Some members of cooperatives have stated that the price for their milk that the cooperative offer is less than what they could get if they sold their product directly to consumers, thus there is a tendency to sell milk partly directly to consumers and some to their cooperatives. This is a vicious cycle where the cooperatives' profitability is negatively affected which in turn reduces the dividend received by members and therefore members loose confidence in the successfulness of the cooperatives. The reason why Hadnet is best performing cooperative is that unlike the others the cooperative is using its members to carry out all activities which saves them extra expenses while the others have employees. In addition, Hadnet has very effective leadership and high member participation.

The majority of the respondents were between the productive age group of 36-50. 54 percent were females and the remaining 46 were males. It was also found out that 36% were illiterate and 39 percent had only primary education. Majority of the respondents were married (81.2%) and farmers by occupation (73.5%). Dairy farm inputs were generally scarce, far from where the cooperatives are or too expensive. 90% of the respondents stated that breed, breed centers, veterinary services and financial credit which are particularly crucial to the success of dairy cooperatives were not made available to them by their cooperatives. It was revealed that the development of infrastructure is so poor that only 8.6% of the respondents had access. This is, according to the respondents, a serious challenge threatening the very existence of some cooperatives. They also said that they are exposed to unnecessary expenses, waste of time and travel on foot. 79 percent of the members had undergone dairy cooperative oriented training and the leaders have gained experiences in workshops. It was revealed that majority of the respondents (78.4%) had contact with

dairy extension agents while 22% perceived that they had no contact with extension agents.

Respondents were assessed about their knowledge about dairy farming using a list of ten questions; 76.7% scored 10/10 and only 2% scored less than 7/10. In conclusion, majority of the respondents had a higher level of knowledge. However they still consider they need professionals to guide them in the management of their cooperatives. Leadership is one of the factors that affect the performance of cooperatives in this study and it was found out that 66% of the cooperatives had effective leadership.

Cooperative members were asked to rank constraints regarding feed supply and breed in order of importance. The five most important constraints regarding feed supply were high Cost of feed, non availability of feed; high cost of transport , weather changes and distance to source of feed, in that order. On the other hand, knowledge and handling of feed were ranked as the least important factors affecting dairy farmers.

The three most important constraints with respect to breed were lack of breed; non-availability of insemination centres and veterinary services. Members of dairy cooperatives are well aware of the importance of breed; only 23 % consider the lack of it a problem.

The econometric analysis was done to identify determinants of performance of dairy cooperatives. We used the Probit model to analyze the significant determinant factors for performance in terms of the dichotomous dependent variable satisfaction. The Tobit model was used for the complementary indicator of performance milk sold and dividend.

5.2. Recommendations

During the survey, the researcher found out several challenges faced by the members of the dairy cooperatives in getting inputs; marketing outputs and also their over all successfulness of the dairy cooperatives. The problems were identified from the interviews with the members; focus group discussions held with leaders of the cooperatives; woreda officials and extension agency and based on the challenges the recommendations are outlined.

Challenge: Deficiency in managerial and leadership capacity.

Recommendation:

- Ensure increased participation of members in dairy cooperatives by involving them in planning, execution and monitoring of dairy marketing activities.
- Improve management skills of officials of cooperatives by conducting regular training programs.

Challenge: Lack and shortage of input supply and credit

- Arrangements by government and credit institutions to provide easy access to credit for cooperative members.
- Cooperatives may promote the cultivation of fodder grass which may be started in the farms of members.
- Make arrangements for effective veterinary services and regular visits by dairy experts to the livestock farms of the members.

Challenge: Problems of productivity

- Organize seminars that benefit cooperative members' productivity and also conduct experience sharing tours and workshops.
- Through effective linkage with international livestock organizations and other livestock agencies, make regular arrangements for popularization of exotic breeds such as Holestein Fresian and cross bred catle that produce more milk.

Challenge: Processing, storage and poor market access

- Make improvements in the dairy marketing infrastructure such as provision of processing plants, storage facilities and transportation of dairy products.
- Dairy cooperatives should initiate steps to start units for butter, milk powder, ghee and yogurt.
- Dairy cooperatives should focus their attention on regular and effective milk collection, pasteurisation, storage and distribution systems
- Dairy based agribusiness may be promoted by the dairy cooperatives through the members with the help of sister organizations in the region.

5.3. Implications for future research

This study has revealed very important findings regarding the performance of cooperatives and factors affecting them in three woredas of Tigray. However it has limitations in addressing all dairy cooperative related issues that could be generalised to the whole region or nation. Therefore, there is a need for large scale and in depth

studies to discern factors affecting performance in other woredas of Tigray Region so as to develop appropriate strategies for the development of dairy cooperatives

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APPENDICES

Appendix – 1 Numbers and Type of Primary Cooperatives in Ethiopia

s.no	Types of coops	No of coops	Total No of Members			Capital in Mil. Birr
			Male	Female	Total Members	
1.	Multipurpose	5,104	3,285,990	401,747	3,687,797	347.36
2.	Dairy	112	3,048	1,087	4,135	3.3
3.	Incense	14	1,257	202	1,459	0.129
4.	Fishery	36	2,267	134	2,401	3.42
5.	Irrigation	442	26,280	4,217	30,497	11.86
6.	Apiary	40	2,478	44	2,522	0.442
7.	Seed production	17	1,751	182	1,933	2.37
8.	Fruits and veg marketing	60	-	-	1,740	0.719
9.	Livestock prod and vet.service	149	3,180	383	3,563	3.13
10.	Slaughtering house	8	239	7	246	0.82
11.	Coffee pulpury	1	16	4	20	0.35
12.	Tree growers	12	1,430	295	1,736	.203
13.	Sugar cane producers	9	1,311	453	1,764	1.94
14.	Housing	5,869	-	-	424,731	18.37
15.	Consumers	81	-	-	6,459	3.07
16.	Rural Electric	12	2,963	774	3,737	0.47
17.	SACCOs	4,178	69,072	33,589	102,661	1037.62
18.	Construction	204	-	-	19,431	10.304
19.	Mining	355	25,335	1.044	26,379	5.85
20.	Handicrafts	1,514	-	-	31,408	21.8
21.	Others	930	3,018	128	3,146	1.744
Total		19,147	3,430,435	444,354	4,076,323	1,475,253

Source: Federal Cooperatieve Agency As of June, 2006

Appendix -2 Respondents by woredas and cooperatives

Woreda	Cooperatieve	Frequency	Percent
Alamata	Desta	53	45.3
Atsbi	Hadnet	6	5.1
	Semret	5	4.3
Enderta	Fireweini	10	8.5
	Kisanet	15	12.8
	Werile	10	8.5
	Zelalem	17	14.5
	Total	116	100.0

Source: Primary data collected through field survey (Jan, 2008)

Appendix - 3 Probit Estimates of the probability of satisfaction

```
Number of obs   =        105

LR chi2(14)     =      56.16

Prob > chi2     =     0.0000
Log likelihood  = -41.693095
Pseudo R2       =     0.4025
```

satifac	Coef.	Std. Err.	z	P>|z|	(95% Conf.	Interval]
age	-.0373566	.4197539	-0.09	0.929	-.860059	.7853459
sex	1.181385	.4902524	2.41	0.016	.2205078	2.142262
educat	.2079992	.1846109	1.13	0.260	-.1538316	.5698299
maritsta	.6188879	.3602712	1.72	0.386	.0272306	1.325006
occupati	-.0789524	.2654322	-0.30	0.766	-.59919	.4412853
fmsize	.2426591	.293842	0.83	0.409	-.3332605	.8185788
memdurat	.3029641	.3277113	0.92	0.355	-.3393382	.9452663
credit	.8894752	.4046195	2.20	0.028	.0964355	1.682515
memtrain	1.366118	.4240654	3.22	0.001	.534965	2.197271
mrkacces	.2054393	.2391704	0.86	0.390	-.2633262	.6742047
leffecti	.2189868	.1868331	1.17	0.241	-.1471993	.585173
infscture	-.9793418	.5940048	-1.65	0.099	-2.14357	.1848863
partcipat	.6561433	.2840873	2.31	0.021	.0993425	1.212944
Coopage	4.861826	1.852902	2.62	0.009	1.230206	8.493447
_cons	-2.377526	4.639753	-0.51	0.608	-11.47127	6.716222

Appendix -4. Marginal effects of independent variables on satisfaction

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]	
age	-.012332	.13849	-0.09	0.929	-.283774	.25911
sex	.3899933	.1634	2.39	0.017	.069737	.71025
educat	.0686637	.06139	1.12	0.263	-.051666	.188993
maritsta	.2043044	.1137	1.80	0.172	-.018546	.427155
occupati	-.0260634	.08748	-0.30	0.766	-.19752	.145394
fmsize	.0801055	.09577	0.84	0.403	-.107607	.267818
memdurat	.1000131	.1089	0.92	0.358	-.113422	.313448
Credit	.319039	.14937	2.14	0.033	.026273	.611805
memtrain	.8938267	.15472	2.04	0.031	.011683	.61818
mrkacces	.0678187	.0784	0.87	0.387	-.085833	.221471
leffecti	.0722909	.06147	1.18	0.240	-.04819	.192772
infsture	-.3232958	.18695	-1.73	0.084	-.689708	.043117
partcpat	.216603	.09174	2.36	0.018	.036799	.396407
coopeage	1.522042	.08878	-1.05	0.004	-.267348	.080671

```
. tab1 satifac

-> tabulation of satifac

    satifac |      Freq.     Percent        Cum.
------------+-----------------------------------
          0 |         40       34.48       34.48
          1 |         76       65.52      100.00
------------+-----------------------------------
      Total |        116      100.00.
```

Appendix - 5

INTERVIEW SCHEDULE:

Comparative Study on the Performance of Dairy Cooperative Marketing in Atsbi, Alamata, and Enderta Woredas, Ethiopia.

I. PA Level

1) Name of the Woreda ----------
2) Name of the dairy cooperative----------
3) Population size in PA----------
4) Land use (rain fed or irrigated)----------
5) Grazing----------
6) Types of feed ----------
7) Distance b/n farmers and the market----------

II. Household Characteristics

8) Name of the respondent ----------
9) Age ----------
10) Sex----------
11) Educational status
    a. Primary education (1^{st}-6^{th} grade) ----
    b. Secondary education (7-12 grade) ----
    c. Read and write----
    d. Illiterate (can not read and write) ----
12) Marital status, Single---,Married---, Divorced---, Widowed---
13) Occupation, Government------,Ngo-----,Cooperative-----,Self employee----,Farming-----, Daily Laborer----- , Others

14) Wealth

a. Land-------

b. Livestock, Cattle (Cows, Local----, improved breed----),Sheep--,Goat--

c. Honey in Kg-----

d. Grains in Quintal-----

e. No of rooms-----

f. Gold----

g. Others specify----------

---

15. Family size

S.N	AGE	No of Families
1.	Dependent (<15 years)	
2.	Adult (15-65 years)	
3.	Dependent (> 65 years)	

16. Religion, Christian -----, Muslim----, Others------

III. Membership in cooperative and services

17. How long you are a member in the cooperative? < 1year---, 1-2 year---, >3year---

18. How much money did you contribute to the cooperative-----?

19. Does the cooperative provide input supply such as Feed, Artificial insemination (AI), improved breed, Farm equipment, Dairy equipment? Yes / No, if yes----------

20. Is the feed supply?

a, Adequate------

b, Inadequate-----

c, others specify----------

21. How are veterinary services?

a, Existing------- b, not existing------- c, Others specify-------

22. How is Artificial insemination supply?

a, Adequate------

b, Inadequate-----

c, others specify----------

23. How is improved breed supply?

a, Adequate------

b, Inadequate-----

c, others specify----------

24. How is farm equipment supply?

a, Adequate------

b, Inadequate-----

c, others specify----------

25. How is dairy equipment supply?

a, Adequate------

b, Inadequate-----

c, Others specify----------

26. If any other services provided by the cooperative please specify----------

27. How is availability of credit?

a. Available (3)

b. Partially available (2)

c. Not available (1)

28. Does the cooperative provide training in relation to dairy for the members? Yes/No

29. How is market accessible for the dairy output?

a. Very good access (3)

b. Some access (2)

c. No access (1)

30. Does the cooperative provide market information? Yes/N0, if yes type of market information supplied----------

31. Does the cooperative processing milk? Yes / No, if Yes what type of processing?

32. Does the cooperative buy milk from you? Yes/ No

33. Does the cooperative sell milk? Yes/ No

34. Does the cooperative sell butter? Yes/ No

35. How much milk did you sell to the cooperative in 1999E.C? ---liter, at what price

36. Did you receive dividend in 1999 E.C, Yes/ No if yes how much----? If no why--?

IV. Major Constraints Faced in Dairy farming

37. What are the constraints which you perceive with respect to quality feed and improved breed?

S.N	Constraints	Most important	important	Less important
I	Quality feed	(3)	(2)	(1)
1.	High cost of quality feed			
2.	Not availability of quality feed			
3.	Inadequate technical advice on quality feed			
4.	Distance of feed market from the farmer			
5.	Lack of awareness about quality feed			
6.	Lack of finance to purchase quality feed			
7.	Poor care of quality feed			
8.	Climate fluctuation			
9.	High transportation cost			
10.	Other specify			

S.N	Constraints	Most important	Important	Less important
II	Improved breed	(3)	(2)	(1)
1.	Lack of awareness about advantages of new improve breeds			
2.	Dearth of cross-breeding centers nearby			
3.	In adequate artificial insemination facilities			
4.	Low resistance of the improved breeds to disease			
5.	High cost of consultancy for improved breed			
6.	Negative attitude towards improved breed			
7.	Inadequate access to credit			
8.	Inadequate knowledge in improved breed			
9.	Inadequate veterinary service			
10.	Negative influence of the friends and relatives			
11.	Others specify			

V. Cooperatieve Leadership

38. How effective is the dairy cooperative leadership?

a.Very effective (4)

b.Effective (3)

c.Weak (2)

d.Very weak (1), Why----------

39. How are leaders elected?

a. Members vote ----------

b.Consensus by all members---------

c. Other means specify ----------

40. How responsive is the cooperative leadership? Responsible/irresponsible

41. How transparent and accountable are the board members?

a.Very transparent and accountable (3)

b.Satisfactorily transparent and accountable (2)

c.No transparency and/or accountability (1)

42. What is the trend of dropout members?

a. Decreasing----------

b. Increasing----------

c. Constant----------

Explain the reason----------

43. How do you rate infrastructure development and availability?

S.N	Availability	Adequate	Some what adequate	Not adequate
1.	Availability of credit			
2.	Availability of technology			
3.	Availability of service including technical support			

44. How is the member's participation in dairy cooperative?

S .N	Nature of participation	Regularly(3)	Occasionally(2)	Rarely (1)
1.	Attending the meetings of dairy cooperative			
2.	Attending the planning activities of dairy coop			
3.	Attending in the implementation of activities of dairy coop			
4.	Attending fund raising activities of the coop			
5.	Decision making of the dairy coop			

45. How is sense of ownership among members?

a) Very high

b) High

c) Average

d) No sense of owner ship

46. Knowledge of members in dairy marketing?

S.N	Activities	Right (1)	Wrong (0)
1.	Which is the important factor that increases dairy productivity?		
2.	Which animal breed produces more milk?		
3.	Name one technique to increase demand for your products?		
4.	What is the advantage of being a member of dairy cooperative?		
5.	What should be government's important role to support dairy marketing?		
6.	Where do you get credit access for dairy marketing?		
7.	Do you think improvement of roads and transport will improve market access?		
8.	Name one processing technique in dairy industry		
9.	Is there any seasonal variation in demand for your products?		
10.	How do you overcome the variation of demand?		

48. Do you have contact with extension agency related to dairy marketing? Yes/No,

If yes...

S.N	Name of extension agency	Frequent contact(3)	Occasional contact(2)	Very limited contact(1)
1.				
2.				
3.				
4.				
5.				

VI. Members Satisfaction

49. How is member's satisfaction?

a) Highly satisfied, (3)

b) Satisfied, (2), c) Unsatisfied, (1)

50. How is member's satisfaction regarding feed supply, breed supply, market information, veterinary service, farm equipment, dairy equipment, output marketing, credit supply and dividend?

a) Highly satisfied, (3)

b) Satisfied, (2), c) Unsatisfied, (1)

51. What are your suggestions to improve the dairy productivity and marketing capabilities of dairy cooperatives?

S.N	Suggestions	Most important	Important	Less important
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

CHECK LIST FOR FOCUS GROUP DISCUSSION WITH OFFICIALS:

1. How old is the cooperative? -------
2. How many members does the cooperative have? ---------

a. at the time of establishment----------

b. at present----------

3. How many members left the cooperative in the last one year? ---------
4. How do you evaluate the dairy output marketing?
5. What constraints do you face with respect to quality fed and genetic improvement?
6. What are the advantages to the cooperative members? Do you think being a member of a cooperative is more advantageous than being on your own please explained why?
7. How good is accessibility to input supply such as credit, quality feed, veterinary services and infrastructure (Roads, storage facilities processing plant)?
8. How is the working system of the board regarding transparency, accountability, and responsiveness?
9. What is the knowledge of members about cooperatives?
10. Do you perceive that the dairy cooperative has adequate infrastructure?
11. Which are the processing techniques followed by the dairy cooperative in dairy marketing (Pasteurization of milk, making milk powder, ice cream manipulation, making butter etc)
12. What are the constraints regarding the dairy output?

13. What are your suggestions for improving the productivity and marketing capabilities of dairy marketing?

14. If any more not explain.

ትግርኛ ቃለ መሕተት

Comparative Study on the Performance of Dairy Cooperative Marketing in Atsbi, Alamata, and Enderta Woredas, Ethiopia.

I. ኩነታት ጣብያ

1.ስም ወረዳ ----------

2.ስም ሕብረት ስራሕ ማሕበር --------

3.በዝሒ ህዝቢ ትጣብያ----------

4.ኣጠቃቕማ መሬት (ብዝናብ ወይስ ብመስኖ) ----------

5. ግጦሽ (Grazing) ----------

6. ዓይነታት ቀለብ እንስሳ ----------

7.ርሕቀት ካብ ሓረስታይ ናብ ዕዳጋ----------

II. ናይ ውልቀ ባህርያት (Household Characteristics)

8.ስም ----------

9.ዕድመ----------

10.ዖታ----------

11.ደረጃ ትምህርቲ

11.1. ቀዳማይ ብርኪ ($1^{ይ}$-$6^{ይ}$ ክፍሊ) ----

11.2. ካልኣይ ብርኪ ($7^{ይ}$-$12^{ት}$ ክፍሊ) ----

11.3. መሰረታዊ ትምህርቲ ----

11.4. መሃይም (ምንባብን ምዕሓፍን ዘይክዕል) ----

12. ኩነታት ሓዳር, ዘይእተወ---, ዘእተወ---, ዝተፋትሓ---, ብሞት ዝተፈለየ----

13. ኩነታት ስራሕ, መንግስታዊ------, ዘይመንግስታዊ-----,ሕብረት ስራሕ ማሕበር---

ውልቀ ስራሕ----, ሓረስታይ-----, መዓልታዊ ስራሕ----- , ካሊዕ------

14. ካብ ማሕበሮም እንታይ ሀፍተግነት ረኪቦም?

14.1.ገንዘብ----

14.2.መሬት (ሊዝ) ------

14.3 ጥሪት, ከብቲ (ኣልሕም, ዘይተዳቀላ----, ዝተዳቀላ----), በጊዕ----, ጥየል----

14.4. ማዓር ብኪግ -----

14.5.እክሊ ብኩንታል-----

14.6. ክንደይ ገዛውቲ-----

14.7.ወርቂ----

14.8.ሀፍተገነት ኣይረከብናን እቲ ዝተረከበውን ንዋርድያን ንሰራሕተኛን ተከፊሉ

14.9.ካሊዕ እንተልዩ ይግለፁ----------

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15. በዝሒ ስድራ

ተቁ	ዕድመ	በዝሒ ስድራ
1.	ዕግዕተኛ (ትሕቲ 15 ዓመት	
2.	ሰራሕተኛ(15-65 ዓመት)	
3.	ዕግዕተኛ (ልዕሊ65)ዓመት)	

16. ሓይማኖት, ሙስሊም-----, ክርስትያን----,ካሊዕ-----

III. ኣባላት ካብ ማሕበሮም ዝረክብዎ ግልጋሎት

17. ክንደይ ዓመት ገይሮም ኣብዚ ማሕበር? ትሕቲ ሓደ ዓመት-----, ካብ1-2 ዓመት-----, ልዕሊ ክልተ ዓመት------

18. እስካብ ሕዚ ክንደይ ገንዘብ ኣዋጺኦም ንዚ ሕብረት ስራሕ ማሕበር-----?

19. እዚ ሕብረት ስራሕ ማሕበር ቀረብ እታወታት የቕርበልኩም ዶ? ንኣብነት ከም ቀለብ ከፍቲ, ምድቃል ሙርዳት ዓልየት, ናውቲ ማሕረስ, ናውቲ መፍረይ ፀባ, እወ/ኣይፋሉ, መልሶም እወ እንተኮይኑ ዝቕፅል ሕቶ ይመልሱ

20. ቀረብ ምግቢ?

ሀ) ዕኩል-------

ለ) ዕኩል ኣይኮነን------

ሐ) የለን

መ) ካሊዕ እንተልዩ ይግለፁ----------

21. ናይ እንስሳት ሕክምና ግልጋሎት?

ሀ) ኣሎ (3)

ለ) የለን (2),

ሐ) ካሊዕ እንተልዩ ይግለፁ

22. ቀረብ ምሩፃት ዓልየት ምድቃል?

ሀ) ኣሎ-------

ለ) የለን------

ሐ) ካሊዕ እንተልዩ ይግለፁ----------

23. ቀረብ ሙርፃት ዘርኢ?

ሀ) ዕኩል (3)

ለ) ዕኩል ኣይኮነን (2), ሐ) የለን

መ) ካሊዕ እንተልዩ ይግለፁ ----------

24.ቀረብ ናይ ማሕረስ ናውቲ?

ሀ) ዕኩል (3)

ለ) ዕኩል ኣይኮነን (2),

ሐ) የለን (1)

መ) ካሊዕ እንተልዩ ይግለፁ ----------.

25.ቀረብ ናውቲ ፀባ?

ሀ) ዕኩል (3)

ለ) ዕኩል ኣይኮነን (2),

ሐ) የለን

መ) ካሊዕ እንተልዩ ይግለፁ ----------.

26. ካብቲ ዝተጠቀሰ ወፃኢ ቀረብ እታወታት እንተልዩ ይግለፁ ----------

27. ልቃሕ ከመይ ትሪእዎ?

ሀ) ኣሎ (3)

ለ) ብመጠኑ ኣሎ (2) ሐ) የለን (1)

28.በዚ ሕብረት ስራሕ ማሕበር እዚ ስልጠና ምስ ፀባ ኣመልኪቱ ተዋሂብዎም ዶ ይፈልጥ? እወ----/ኣይፋሉ----

29. ናይ ፀባ ምህርቲ ዕዳጋ ከመይ እዩ?

ሀ) ብጣዕሚ ዕቡቅ ዕዳጋ ኣሎ (3)

ለ) ዝተወሰነ ዕዳጋ ኣሎ (2)

ሐ) ዕዳጋ የለን (1)

30.በዚ ሕብረት ስራሕ ማሕበር ዕዳጋ ኣመልኪቱ ሓበሬታ ይዋሃብ ዶ? እወ/ኣይፋሉን, እወ እንተኮይኑ መልሶም ታይ ዓይነት ሓበሬታ ተዋሂቡ ይግለፁ-----

---

31. እዚ ሕብረት ስራሕ ማሕበር ካብ ፀባ ወፃኢ ናይ ፀባ ፍርያት የፍሪ ዶ? እወ ኣይፋሉን/ እወ እንተኮይኑ ታይ ዓይነት

32. እዚ ሕብረት ስራሕ ማሕበር ፀባ ይገዝዕ ዶ ካብኡም? እወ/ኣይፋሉን

33.እዚ ሕብረት ስራሕ ማሕበር ፀባ ይሸይጥ ዶ? እወ/ኣይፋሉን,ኣይፋሉን እንተኮይኑ ምክንያቱ ይግለፁ ----------

34.እዚ ሕብረት ስራሕ ማሕበር ጠስሚ ይሸይጥ ዶ? እወ/ ኣይፋሉን

35. ክንደይ____ሊትሮ ፀባ ንዚ ሕብረት ስራሕ ማሕበር ሸይጦም ኣብ 1999 ዓ.ም, ብክንደይ ዋጋ ____ብር

36. ኣብ 1999ዓ.ም ትርፊ ረኪቦም ዶ? እወ/ኣይፋሉን, እወ እንተኮይኑ ክንደይ----

ብር, ኣይፋሉን እንተኮይኑ ንምንታይ?----------

IV. ዓበይቲ ሕፅረታት ዘጋጥሙ ኣብ ናይ ፀባ ምሕርቲ

37. ኣብ ፅሩይ ቀለብን ምሩፃት ዓልየትን ኣመልኪቱ ዘጋጥሙ ሕፅረታት?

ተ ቁ	ሕፅረታት	ዋና ሽግር	ሽግር	ሽግር ኣይኮነን
ሀ	ፅሩይ ቀለብ ጥሪት	(3)	(2)	(1)
1.	ዋጋ			
2.	ፅሩይ ምግቢ ምህላው			
3.	ምክሪ ክኢላ			
4.	ክሳብ ፅዳጋ ዘለኦ ርሕቀት			
5.	ብዛፅባ ሙሩፅ ምግቢ ፍልጠት ዘይምህላው			
7.	ቱሕት ኣታሓሕዛ ፅሩይ ምግቢ			
8.	ለውጥታት ፀባይ ኣየር			
9.	ዋጋ መጋዓዒ			
10.	ካሊፅ እንተልዩ ይግለፁ			

ተ ቁ	ሕፅረታት	ዋና ሽግር	ሽግር	ሽግር ኣይኮነን
ለ	ሙርፃት ዘርኢ	(3)	(2)	(1)
1.	ትሑት ግንዛበ ጥቅሚ ሙርፃት ዘርኢ			
2.	ሙርፃት ዘርኢ ሕፅረትን ኣብ ጥቃካ ዘይምህላውን"			
3.	ኪኢላ ምድቃል ዘይምህላው			
4.	ግጉይ ኣራዳድኣ ምሩፃት ዘርኢ (ሕማም ዘይፃወር ጌርካ ምውሰድ)			
5.	ንክኢላ ምሩፅ ዘርኢ ዝክፈል ክባር ስለዝኮነ			
6.	ጉግይ ኣመለካክታ ኣብ ሙርፃት ዘርኢ ስለዘለኦ			

7.	እኩል ናይ ልቃሕ ግልጋሎት ዘይምህላው			
8.	ኣብ ምሩፃት ዘርኢ እኩል ፍልጠት ዘይምህላው			
9.	እኩል ናይ ሕክምና ግልጋሎት ዘይምህላው			
10.	ኣሉታዊ ዕዕንቶ ካብ ቤተሰብን ኣዕርክትን			
11.	ካሊእ እንተልዩ ይግለፁ			

V. ኣመራርሓ ሕብረት ስራሕ ማሕበር

38. ነይዚ ሕብረት ስራሕ ማሕበር ኣመራርሓ ከመይ ይሪእዎ?

ሀ) ብጣዕሚ ዕቡቅ ኣመራርሓ ዩ (4)

ለ) ዕቡቅ ኣመራርሓ (3)

ሐ) ድኩም ኣመራርሓ ዩ (2) መ) ብጣዕሚ ድኩም ኣመራርሓ (1)

ረ. መልሶም ሐ ወይ መ እንተኾይኑ ምክንያቱ ይግለፁ----------

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39. እቲ ኣመራርሓ ከመይ ኢሉ ተመስሪቱ?

ሀ) ብኣባላት መረፃ -------

ለ).ኣባላት ስለዝተስማዕምዑ --------

ሐ) ካሊእ እንተልዩ ይግለፁ ----------

40.ኣመራርሓ እዚ ሕብረት ስራሕ ማሕበር ብማሕበርተኛ ዝሕተትዎ ምላሽ ይህቡ ዶ? ሓላፍነቶም ይዋፅኡ/ኣይዋፅኡን.

41. ግልፅነትን ተጠያቅነትን ኣብ ኣመራራሓ ከመይ እዩ?

ሀ) ብጣዕሚ ግልፅነትን ተጠያቂነትን ኣሎ (3)

ለ) ኣዕጋቢ ግልፅነትን ተጠያቅነትን ኣሎ (2)

ሐ) ግልፅነትን ተጠያቅነትን የለን (1)

42. ከይዲ ካብ ማሕበር ዝወፁ ኣባላት ከመይ ትሪእዎ?

ሀ) ይቅንስ ----------

ለ) ይውስክ ----------

ሐ) ሓደ ዓይነት ዩ ----------

መ) ምክንያቱ ዘርዝሩ ----------

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43. ዕብየት ናይ መሰረተ ልምዓት ከመይ ትሪእዎ?

ተቁ	መሰረተ ልምዓት	ዕኩል	መካከለኛ	ዕኩል ኣይኮነን
1.	መብራህቲ			
2.	ስልኪ			
3.	ዕርጊያ			

44. ኣባላት ኣብ ማሕበሮም ዘለዎም ተሳታፍነት ከመይ እዩ?

ተቁ	ኣብ ምንታይ ትሳተፉ	ስሩዕ (3)	ሓደሓደግዜ(2)	ኣይሳተፍን(1)
1.	ኣብ ወርሓዊ ስብስባ ናይቲ ማሕበር			
2.	ትልሚ ኣብ ዝዳለወሉ ዕዋን			
3.	ፍፃመ ስራሕቲ ኣብ ዝረኣየሉ			
4.	ተወሳኺ ገንዘብ ኣብ ዘድልዮሉ ዕዋን			
5.	ውሳነታት ኣብ ዝካየደሉ ዕዋን			

45. ብዓልዋንነት ኣብ ኣባላት ከመይ ትሪእዎ?

ሀ) ብጣዕሚ ልዑል

ለ) ልዑል

ሐ) ማዕከላይ

መ) ናይ ባዓል ዋንነት ስምዒት የለን

46.ፍልጠት ኣባላት ኣብ ዕዳጋ ፀባ ከመይ ዩ?

ተቁ	ስራሓቲ	ልክዕ (2)	ጌጋ(1)
1.	ናይ ፀባ ምህርቲ ከውስከልና ዝክዕል እንታይ ተገይርና እዩ?		
2.	ኣይነኣን ዓልየት ከፍቲ ዝሓሸ ፀባ ይህባ?		
3.	ፀባ ኣብ ዕዳጋ ጠለብ ክረክብ ታይ ክግበር ኣለዎ(ሓደ ሜላ ይግለፁ) ?		
4.	ኣብ ናይ ፀባ ማሕበር ብምእታዎም ታይ ጥቅሚ ረኪቦም?		
5.	ኣብ ናይ ፀባ ምህርቲ ዕዳጋ ምድንፋዕ መንግስቲ ታይ ክገብር ኣሎዎ?		
6.	ናይ ፀባ ምህርቲ ዕዳጋ ንምድንፋዕ ልታሕ ካበይ ይረክቡ?		
7.	ምምሕያሽ ዕርግያን ሞጋዓዝያን ናይ ፀባ ምህርቲ ዕዳጋ ክውስክ ኢሎም ዶ ይሓስቡ?		
8.	ሓደ ሜላ ፍርያት ፀባ ናብ ካልዕ ፍርያት እትቅይርሉ ይግለፁ		
9.	ናይ ፀባ ምህርትኩም ጠለብ ዝፈላለየሉ ወቅቲ ኣሎ ዶ?		
10.	ከመይ ገይርኩም ትፈትሕዎ ኣፈላላይ ወቅታዊ ጠለብ ፀባ?		

47. ምስ ኤክስቴንሽን ወኪላት ኣብ ናይ ፀባ ዕዳጋ ኣመልኪቱ ትዘራረቡ ዶ ወይ ትራከቡ ዶ? እወ/ኣይፋሉን መልሶም እወ እንተኾይኑ ምስ መን ከምዝራከቡ ይግለፁ

ተ ቁ	ስም ኤክስቴንሽን ወኪላት	ኩሉ ግዜ ንራከብ (3)	ሓደሓደ ግዜ ንራከብ (2)	ብጣዕሚ ውስን ግዜ 1
1.				
2.				
3.				
4.				
5.				

VI. ዕግበት ኣባላት

48. ናይ ኣባላት ዕግበት ከመይ ይሪእዎ?

ሀ) ዝለዓለ ዕግበት, (3)

ለ) ኣዕጋቢ, (2) ሐ) ኣዕጋቢ ኣይኮነን, (1)

49. **ዕግበት ኣባላት ኣብ እታወታት፣ ዕዳጋ ፍርያት ፀባ፣ ዕዳጋ ሓበሬታን ትርፍን ኣመልኪቱ ታይ ይመስል**?

ሀ) ዝለዓለ ዕግበት, (3)

ለ) ኣዕጋቢ, (2)

ሐ) ኣዕጋቢ ኣይኮነን, (1)

50. **ትርፊ ናይ ማሕበርኩም ከመይ ትሪእዎ**?

ሀ) ብጣዕሚ ኣትራፊ (3)

ለ) ኣትራፊ (2)

ሐ) ኣትራፊ ኣይኮነን (1) **ምክንያቱ ይግለፁ**----------

51. **ናይ ፀባ ምህርቲ ክውስክ ታይ ክግበር ኣሎዎ ካብ ሓደ እስካብ 5ተ ሰደቃ ኣብ ዘሎ ይመልሱ**? **ዕዳጋ ምህርቲ ፀባ ህብረት ስራሕ ማሕበራት ንክማሓየሽ ታይ ክግበር ኣለዎ ይብሉ ካብ 6ተ ስካብ 11 ኣብ ዘሎ ሰደቃ ይመልሱ**?

ተቁ	ዝውሃብ ሓሳብ	ብጣዕሚ ጠቃሚ	ጠቃሚ	ትሑት ጠቃሚ
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

CHECK LIST FOR FOCUS GROUP DISCUSSION WITH OFFICIALS:

Comparative Study on the Performance of Dairy Cooperative Marketing in Atsbi, Alamata, and Enderta Woredas, Ethiopia.

1.ዝማሕበር ካብ ዝምስረት ክንደይ ዓመት ገይሩ? -------

2. ክንደይ ኣባላት ኣለዎ? ----------

3. ክምስረት እንተሎ ክንደይ ኣባላት ነይሮም? ---------

ሀ) ኣብዚ ሕዚ ዕዋን ክንደይ ኣባላት ኣለዎ? -------

4. ኣብ ዝሓለፈ ዓመት ክንደይ ኣባላት ወፅዮም? -------

5.ዕዳጋ ፍርያት ፀባ ከመይ ትግምግምዎ? (ጠለብ,ትራንስፖርት,ራሕቂ መንገዲ)

6.ኣብ ሙርፃት ዘርኢን ቀለብን ኣመልኪቱ ዘጋጠመ ህፅረታት?

7.ረብሓታት ኣባል እንታይ እንታይ እዮም? ኣባል ሕብረት ስራሕ ማሕበር ምካን ካብ ዘይምካን ዝበለፀ ረብሓ ኣለዎ ዶ ትብሉ? ኣብርህዎ

8.ንስራሕትኩም ቀረብ ምርካብ ክንደየናይ ፅቡቕ እዩ ትብሉ? ንኣብነት ቀረብ ቀለብ ከፍቲ,ሕክምና እንስሳ መሰረታዊ ልምዓታት ከም (ዕርግያ, መካዘናት ትካል መዳለዊ ፍርያት ፀባ ወዘተ)?

9.ኣማራርሓን ኣሳራርሓን ቦርድ ብዓይኒ ተሓታትነት, ግልፅነትን ብዓይኒ ምምላስ ሕቶ ኣባላትን ከመይ ትሪኡዎ ወይ ተቐምጥዎ?

10.ብዛእባ ሕብረት ስራሕ ማሕበር ዘሎ ፍልጠት ኣባላትኩም ከመይ ትግምግምዎ ትሪኡዎ?

11.ብትካል ፍርያት ፃባ ትጥቀሙሎም ኣሳራርሓታት እንታይ እንታይ እዮም / ምህርቲ ትካል ፀባኩም እንታይ እንታይ እዮም

12.**ኣብ ቀረብ ወይ እታዎታት ሕርሻ ፀባ ዘጋጥሙኩም ፀገማት እንታይ እንታይ እዮም?**

13.**ኣብ ምምሕያሽ ውፅኢታውነት ሕብረት ስራሕ ማሕበርኩምን ዕዳጋ ፍርያት ፀባ ዘለኩም ርኢቶ እንታይ ይመስል**?