

Addis Ababa University
School of Graduate Studies
Institute of Regional and Local Development Studies

**THE ROLE OF MICROFINANCE IN STRENGTHENING
PASTORAL HOUSEHOLD FOOD SECURITY**

A Comparative Study between Beneficiaries and Non-Beneficiaries of
Microfinance Services in Dollo Ado and Filtu Districts of Somali Region

BY

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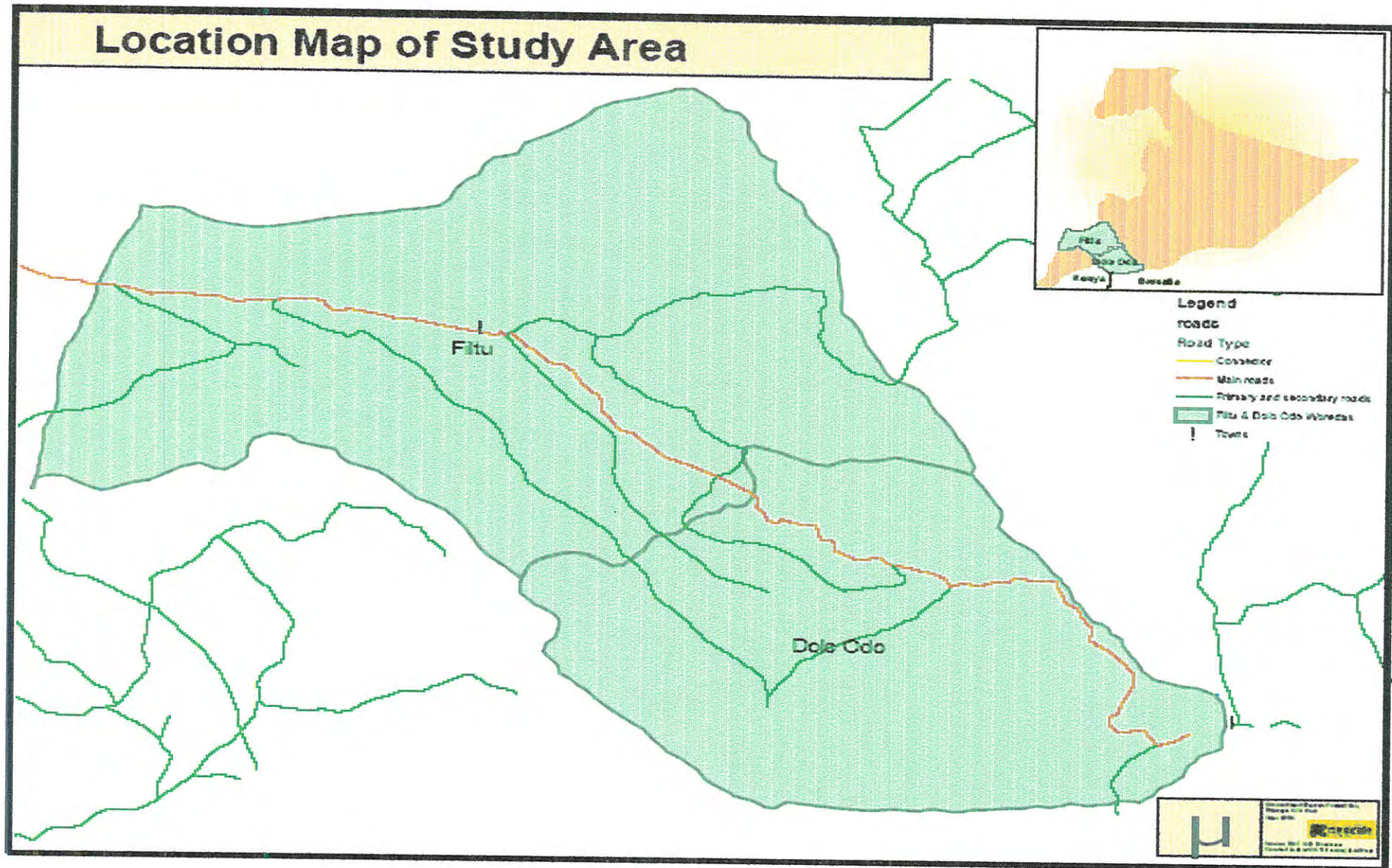
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Acronyms

AAU	Addis Ababa University
ADLI	Agriculture Development Led Industrialization
AEMFIs	Association of Ethiopian Micro finance Institutions
BCG	Bacille Cammette-Guerin
BSPE	Birhanina Selam Printing Enterprise
CDD	Community Driven Development
CRDA	Christian Relief and Development Association
CSA	Central Statistical Authority
DES	Dietary Energy Supply
DFID	Department For International Development
DPPC	Disaster Prevention and Preparedness Commission
FAO	United Nations Food and Agricultural Organization
FDRE	Federal Democratic Republic of Ethiopia
FSS	Food Security Strategy
GGRF	Group Guarantee Revolving Fund
Ha	Hectare
HICE	Household Income, Consumption and Expenditure
IDS	Institute of Development Studies
IFPRI	International Food Policy Research Institute
IIRR	International Institute for Rural Reconstruction
IPS	Industrial Project Service
Kcal	Kilo calorie
MDGs	Millennium Development Goals
MFIs	Micro Finance Institutions
MoFED	Ministry of Finance and Economic Development
MoWR	Ministry of Water Resources
MT	Metric Ton
NGO	Non-Governmental Organization
PAPDP	Pastoral and Agro-pastoral Development Project
PCAE	Pastoralist Concern Association-Ethiopia
PCDP	Pastoral Community Development Project
PFE	Pastoralist Forum Ethiopia
SCF	Save the Children Federation
SDPRP	Sustainable Development and Poverty Reduction Program
SRPO	Somali Region Population Office
UNECA	United Nations Economic Commission for Africa

Abstract

Microfinance is the provision of financial services to low income households and self-employed clients (Ledgerwood, 1999). Providing microfinance services to pastoral households is one aspect of promoting food security. It contributes for income generation and smoothing consumption. This study investigated whether there are significant differences in income, expenditures on food and non-food items, food consumption, child schooling and coping strategies between microfinance service beneficiary and non-beneficiary households in Filtu and Dollo Ado districts of Somali region. Equal numbers of beneficiary and non-beneficiary households (57 households each) were included in the sample.

The research findings indicated that, microfinance beneficiaries have more diversified incomes than the non-beneficiaries. Furthermore, these households had more income relative to non-beneficiaries. As a result, households' access to microfinance services had higher monthly food and non-food expenditures than non-service users. This indicates that, the former households have better purchasing power than the later. Thus, they have shown better calorie consumption.

Access to microfinance services enabled beneficiary households to increase their incomes. The increased income helped beneficiaries to spend more on child education than non-beneficiaries. More importantly, the beneficiary households have employed less coping strategies during food shortages, which imply that, adequate food at their disposal. The result also shows that, the severity of responses on the utilization of coping mechanisms has more pronounced to non-beneficiary households. Finally, pastoralist oriented microfinance service reduces vulnerability and minimizes the risk of becoming food insecure.

Key words: Microfinance, Food security, Coping strategies, Household income, Food expenditure, and Food consumption

Chapter 1. Introduction

1.1 Background of the study

Inadequate socio-economic services, lack of infrastructures, and high human population pressure with scarce resources have caused many pastoral households to become food insecure. Moreover, the recurrent drought, and the influx of both political and environmental refugees from outside the country and within the region, and change of the land use patterns have caused environmental degradation particularly in Filtu and Dollo Ado districts. Despite the prevailing food insecurity, there are no sufficient efforts to diversify household incomes, which can help pastoralists in spreading risks during food scarcity. Thus, most of the residents in these areas are heavily depend on livestock and livestock related products for their livelihoods. The production and productivity of livestock is decreasing from time to time and the pastoral households obtained only 4.3 percent of calorie intake from livestock related food products (CSA, 2001).

The Food Security Strategy (FSS, 2002), Sustainable Development and Poverty Reduction Program (SDPRP, 2003) and other government development policies and strategies emphasized the magnitude of food insecurity and the required strategies to curb the problem. These strategies include sedentrization of pastoral communities along the rivers, access to financial services and encourage pastoral enterprises like cattle fattening, livestock marketing, meat processing, and tanneries to build pastoralists' private capital.

Moreover, the pastoral societies are marginalized and their food security situation is deteriorating by marginalized development policy and absence of diversified livelihood

strategies. To alleviate the prevailing food insecurity and transform the pastoralists into modern production system, it requires strong pastoralist oriented financial intermediation. According to Kabbaji (2003) even in the recent years, much attention has been paid by bilateral and multilateral development agencies including the African Development Bank and the World Bank to create or strengthen microfinance institutions to meet the needs of the rural people.

In the recent years, the Federal Democratic Republic of Ethiopia (FDRE) has incorporated pastoral communities in its development endeavors by targeting chronically food insecure pastoral societies (FSS, 2002) through income and asset diversifications. Microfinance service is one of the entry points to increase household asset and income diversifications. There is clear evidence that community based credit organizations and decentralized savings and credit systems can achieve good results in diversifying household incomes and improve the subsequent food security. Most scholars and development practitioners believe that microfinance, in 1980s, has evolved as an economic development approach intended to benefit low-income women and men. Thus, microfinance by definition is the provision of financial services to low-income clients including self-employed (Ledgerwood, 1999).

While the Agricultural Development Led Industrialization (ADLI) focuses on ensuring the national food self-sufficiency, the FSS tries to ensure food security at household level. The food security strategy of Ethiopia, by and large, focuses on increasing the availability of food through domestic production, and ensures access of food for food deficit households. The above-mentioned strategies are some of the important aspects of pastoralists to make them food secure.

One of the most important strategies used to increase food production at household level is providing microfinance to poor pastoralists. This microfinance is expected to facilitate access to inputs for the pastoralists and agro-pastoralists, both urban and rural, to raise their local food production. The critical links between the household food security and the role of microfinance are interrelated. Because, it helps the transfer of resources from urban areas to rural areas and it provides adequate comparative advantages to the pastoral households. Microfinance increases the income of household and it has greater impact on their health and nutrition of poor pastoralists. Meanwhile, microfinance preserves self-employment, raises income in the short term, introduces smooth consumption and it can be used as insurance during emergencies.

Despite the importance of microfinance for household food security; most of the existing services are concentrated in the urban and highland agrarian areas. As of 2005, there were about 26 microfinance institutions in Ethiopia but none of them are serving the pastoral societies. Currently, the micro financial services in the pastoral areas are carried out predominantly by NGOs, both local and international (Gebeyehu, 2001; Kejela, 2001). With this background, the following section briefly describes the general status of Group Guarantee Revolving Fund (GGRF) project, which has been run by Pastoralist Concern Association Ethiopia.

1.2 About the Project

Pastoralist Concern Association-Ethiopia is one of the few NGOs initiating and providing microfinance services in Somali region particularly in Leben and Afdher zones. The main objectives of the organization are:

- Improving household incomes,

- Enabling women to control over household resources, and
- Supporting household food security (PCAE, 2000; Kejela, 2001; Getachew and Aster, 2004).

The organization provides microfinance services by using group guarantee revolving funds (GGRFs). The fund Program focuses on women members within the beneficiaries' households. The program has been started in 1999 in Filtu district with 20 beneficiaries and a sum of 4000 Eth. Birr (200 birr per women) as a pilot project (Pastoralist Forum Ethiopia, 2003; IIRR, 2004). Since then the scope of the project has been expanding, in terms of both beneficiaries and geographic locations, and currently covering four districts (Dollo, Filtu, Cheretti and Hargelle) with more than 300 households and the loan size has increased from 200 birr to 4000 birr/beneficiary. The pilot project has been sponsored by Oxfam Intermon and Oxfam Canada which has been entitled "Gender Capacity Building". Group Grantee or peer group was selected as collateral to apply pressure on borrowers for timely loan repayment.

The organization set eligibility criteria to make sure that, poor and low-income households would benefit from the GGRF scheme. Some of these eligibility criteria were:

- Only one member from a household is permitted within the same group,
- Members within a group should work in close collaboration to one another,
- Group members should choose each other on the bases of repayment capacity and existing mutual respect,
- Members should have attended at least three training sessions,
- Members should have made small savings contribution in each of training session,
- Members have to be the residents of the settlement,

- They should be poor as identified by women association,
- They should have an existing businesses or experience in trade.

The operational modalities used in the implementation of GGRF scheme were promoting compulsory and voluntary savings. The compulsory savings assume that the poor must be taught to save and that they need to learn financial discipline while voluntary saving assume that the working poor already save and that what is needed are institutions and services that are appropriate for their needs. Based on these, loan disbursement, weekly loan repayment, weekly savings, weekly service charges, were fixed and the status of GGRF scheme is portrayed in the following table.

Table 1.1 Status of GGRF scheme (1999-2002)

S/N	District	Site	No of beneficiary	Loan received	Weekly loan repayment	Weekly saving	Weekly service charge
1	Filtu	3	131	184400	2705	475	239
2	Dollo Ado	2	95	180000	2610	430	137.5
3	Cheretti	1	50	118000	1900	446	81
4	Hargelle	1	35	90000	1600	220	90
Total		7	311	572400	8815	1751	524.5

Source: Pastoralist Concern Association - Ethiopia (PCAEE), (2004): Mid-term Project Evaluation Report,

According to the project evaluation report (Getachew and Aster, 2004), with the help of credit services beneficiaries are carrying out different petty trading activities, which they

have considered as profitable ventures. These activities include butchery, small consumer shops, grain trade, livestock trade especially small ruminants, milk trade, small cafeterias and vegetables and fruits. The report further revealed that, profits generated from these activities were used for personal savings, reinvestment, subsistence, and human capital development (educating children) as well as diversifying household assets and incomes.

To ensure the sustainability of the scheme, the organization has established village credit and saving cooperatives in the four districts. Out of the seven credit sites mentioned above, six of them have established cooperatives. Even though, the reasons for selecting some of the beneficiaries for cooperative memberships are not clear, these cooperatives have 184 members. In these groups, savings and service charges collected from the individual members are kept in separate accounts.

Furthermore, these cooperatives have formed their own management committees such as control and inspection, marketing, among others. In the meantime, most of the cooperative members have been decided to pay 50 birr registration fees and to buy one share at a unit price of 500 birr (except the Hargelle group which has decided to buy 700 birr per share). Based on the above project background, the following section states the existing problems with regards to pastoral household food security and microfinance services.

1.3 Problem Statement

Somali region is one of the food insecure regional states in Ethiopia. Most of the time, pastoral and agro-pastoral people are prone to droughts. Due to this, they are food insecure and dependent on food aid on regular basis. Though the regional government

is trying its best to deal with the prevailing poverty and food insecurity situations, the success is minimal. This is due to, inadequate skilled manpower, weak institutional capacity, poor infrastructural facilities, poor climatic conditions and other related factors (Devereux, 2006). Furthermore, inadequate asset diversification and income generation schemes in the region contributed for the prevailing food insecurity. Financial services which can be used to improve and diversify household assets and incomes do not exist in the pastoral areas.

Besides these, the decentralization policies aimed at articulating local needs and create responsive local institutions in the region, were not effective as they were expected. Thus, until recently the decentralization policies have not reached or touched the grass root communities and have done nothing more than devolving the central powers to the regional or district administration which assumed the top-down decision making mechanisms inherited from the centre. Following the decentralization process, modern administrative and legal institutions have been introduced to facilitate the popular participation in the achievements of local development endeavors.

More importantly, the traditional coping mechanisms of pastoral communities are eroded by these modern institutions in such a way that few traditional leaders and administrative groups have taken the control of resources and formed strong bondage (elite groups). These elite groups are becoming dependent on these institutions' support for their economic survival. These infant local institutions coupled with frequent supply of food aid have created the dilemma of dependency on the pastoral and agro-pastoral communities (Campbell, et. al, 1986; Beynon, et. al, 1998; Devereux, 2000). The give-away (food aid) has also dominated by the elite groups and the well-off segments of the

population, thus the vulnerable and intended groups (female headed households, elderly people, disabled persons and pastoral households) have been marginalized. The formal social assistance mechanisms are replaced by emergency food aid distribution. This emergency food aid distribution does not always reach the most vulnerable and food insecure, for whom they are, intended (Devereux, 2006). In addition to these, there is no adequate microfinance strategies in the pastoral areas, thus large numbers of people are suffering from undiversified assets and low incomes and subject to external assistance. This clearly indicates that the capacity of regional government to reallocate and transfer resources to poor pastoral and agro-pastoral households to achieve their long-term food security and to improve their productive capacities is very low.

Provision of micro financial services is one aspect of overcoming the overwhelming pastoral food insecurity in Somali region in general and in Dollo and Filtu districts in particular. The major functions of financial intermediations are the allocation of capital not by administrative means but by introducing market mechanism. In this case, well-organized financial systems will make resource flows simple, efficient, and equitable. These pastoral financial systems reduces the chronic food insecurity of the region by means of production credit, by providing saving facilities and consumption credit, offering appropriate and conducive pastoral insurance schemes, and by charging premiums linked to mandatory savings schemes. Interventions in pastoral finance have shown direct impact on the food security when:

- Poor households increase their income,
- This income is controlled by women,
- Increased income is earned steadily,

population, thus the vulnerable and intended groups (female headed households, elderly people, disabled persons and pastoral households) have been marginalized. The formal social assistance mechanisms are replaced by emergency food aid distribution. This emergency food aid distribution does not always reach the most vulnerable and food insecure, for whom they are, intended (Devereux, 2006). In addition to these, there is no adequate microfinance strategies in the pastoral areas, thus large numbers of people are suffering from undiversified assets and low incomes and subject to external assistance. This clearly indicates that the capacity of regional government to reallocate and transfer resources to poor pastoral and agro-pastoral households to achieve their long-term food security and to improve their productive capacities is very low.

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- Poor households increase their income,
- This income is controlled by women,
- Increased income is earned steadily,

- Enhance households overall livelihoods.

In the pastoral areas, the formal financial institutions like Banks and Insurances that could provide credit services for low-income entrepreneurs, handcrafters and pastoral families are none existent. This indicates that formal financial services have ignored pastoralists. This is because they considered pastoral mobility as an obstacle to normal banking procedures and because, they wrongly, seen pastoralists as outside the cash economy (Swift, 2003). Similarly, the semi-formal financial sectors are not available in the region to fill the gaps of formal financial institutions. These institutions are not there due to infrastructural marginalization, and communication barriers that prevail in the pastoral areas, the urban and sedentary biased policies of these institutions.

Besides these, their rigid and long procedures, overhead costs, and collateral requirements have hindered pastoral communities to benefit from these financial institutions. But the pastoral people need flexible, quick response, limited prescriptions, options and packages of opportunities to benefit from the microfinance services. Practical experiences show that, a financial system that neglects the poor and fails to provide access to credit perpetuates both poverty and food insecurity (Kabbaji, 2003). According to him, through out Africa the productive capacity of the rural poor, particularly women has been hampered by their limited access to adequate credit and savings outlets, despite their excellent repayment record.

Even though, proclamation 40/1996 prohibits the provision of microfinance services by NGOs because of the fact that, microfinance institutions do not exist in the pastoral areas some NGOs are providing the service particularly in Dollo Ado and Filtu districts. In these areas micro financial services are, to some extent, provided in disorganized and

piecemeal manner with very small loan size. These lending schemes are not designed in such a way that it sustains by itself. Furthermore, these areas are least researched and there are limited best practices that can be followed. Pastoralist Concern Association Ethiopia is one of the few NGOs providing microfinance services in Somali region particularly in the above mentioned two districts. While the organization is implementing this scheme for the last six years, sufficient studies have not been done that thoroughly investigate whether the program is contributing to the food security of beneficiary households or not.

Therefore, under this study an assessment has been made on whether this piecemeal microfinance service has contributed to household food security or not and the sort of lessons that can be learned from the program. Furthermore, how these piecemeal microfinance schemes have been able to improve the household income and the subsequent food security of the beneficiary households were assessed.

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of the study was to make an assessment on the role of rural microfinance services to pastoral household food security status. To do this, comparisons has been made between those households who are directly benefited from the microfinance services with those who are not. Moreover, the study aimed at exploring the opportunities available in alleviating pastoral household food security by using microfinance schemes.

1.4.2 Specific Objectives

In this study, some specific variables have been assessed. These variables include the household income, expenditures on food and non-food items, schooling of school age children, and food production and consumption conditions of sample households. Similarly, the asset base, asset diversification, and savings have also been assessed. Based on these variables, the following specific objectives have been assessed:

- Assess the impact of microfinance services on the household incomes,
- Study the role of microfinance services on the household food consumption,
- Investigate the impact of microfinance services on the educational enrollments and attainments of pastoral school age boys and girls,
- Assess the impact of microfinance services on the pastoral household savings, and
- Assess the impact of microfinance services on the coping strategies during food scarcity.

1.5 Significance of the study

In Ethiopia, few pastoral development interventions have so far tried by both government and non-government organizations in attaining community based food security. These development interventions are focusing on education, health, water, livestock and the like which are important for intra- and inter-community food security in broad term. In principle the nation may attain its food security by simply producing large amount of food but in the mean time many households may suffer from food insecurity. Thus, national and/or community food self-sufficiency is necessary but not sufficient conditions for household food security because of the fact that, food insecure households are scattered

across the nation. Therefore, development interventions that are targeting the poor at household level can bring about meaningful food security on the ground.

Thus, the significance of this study is as follows: First, it paves the way on how pastoral communities can be integrated into the cash economy through pastoralist oriented microfinance services. Pastoral households can diversify their incomes by accessing financial resources. These diversified incomes can also be used to improve the pastoral household food security.

Second, pastoralists can cope up with droughts and other food crises using credit services instead of selling their productive assets. If these kinds of facilities are put in place in the pastoral areas, the impacts of drought can be reduced and the rate of recovery from drought can also be minimized.

Third, this study is significant for policy makers, planners, governmental and non-governmental organizations working in the areas of household food security and microfinance promotion. Finally, the study is significant for community based organizations especially women groups who are striving to address the food security situation of their families.

1.6 Scope of the Study

Given the time, logistic and financial constraints, the study focuses especially on the more food insecure and marginalized districts of Somali region mainly Filtu and Dollo Ado districts. This study focuses on the low-income households who were the target beneficiaries. Even if the microfinance scheme currently covers four districts (Dollo, Filtu, Cheretti and Hargelle) from two zones (Liben and Afdher) of Somali region.

Furthermore, emphasis has been given to the level of income of beneficiary households, their level of expenditure, both on food and non-food items, their asset bases including housing units, livestock, farm land and household enterprises. A group of beneficiary households of microfinance schemes and non-beneficiaries were focused for the purpose of comparisons.

This study is a cross-sectional survey on the food security situation of those households who were benefited from Pastoralist Concern Association-Ethiopia microfinance services in the form of group guarantee. As far as the time limit is concerned, this study focuses on the current situation of the households' food security. Furthermore, the limited time given for data collection (one month) would not allow the researcher to work on the longitudinal research design. The longitudinal approach requires longer time to stay in the field which also requires more money and logistic to trace back past food security trends of the households under this study.

1.7 Limitations of the Study

Since the study areas are very remote and far from the capital, there was no public transport. Thus, there were inconveniences and dalliance of timely arrival and data collection. Furthermore, the means of transportation available (if any) were Lorries that are meant for transporting goods (especially the food aid) not people. These Lorries were traveling at night because of the fact that, the temperature was very hot during the daytime. Passengers were loaded above these goods, which entail risk of accidents, inconvenience and discomfort.

Besides this, there were severe drought in the study areas and large numbers of people were subject to rationing of water and food aid in addition to displacement of human and livestock populations. During the data collection, the local people including respondents were not in a good condition to give response for questions. Some respondents were further reluctant to participate in the interview because they were engaged in long queue for water and food aid.

Due to the drought problems and the subsequent presence of many aid organizations, few respondents were related this study to humanitarian issues and set themselves eligible for support. They tried to underestimate and hide some of the actual information with regard to income, sources of income, expenditures on food and non-food items and the like.

More importantly, there were no adequate experiences and reference materials which were written on pastoral micro finance services. Most of the micro finance institutions and schemes in Ethiopia are so far targeting either farmers or urban dwellers. These kinds of services do not fit in the pastoral production and development systems.

In relation to the methodology, since there was no baseline information about the income, food production and consumption, asset base and the like of beneficiary groups, it was difficult to compare these variables on time series. Thus, I was forced to take non-beneficiaries to obtain baseline information. Similarly, empirical evidences were not found on whether the eligibility criteria reflect the actual settings of beneficiaries.

1.8 Organization of the Paper

This research paper comprises five chapters. The first chapter that is the introductory part contains the background, problem statement, and objective of the study,

significance, and scope of the study. This chapter also includes the constraints that have been encountered in the process of carrying out the study.

Definitions, concepts, principles, and theories of food security and microfinance with reference to pastoralists were reviewed from the previous works under the second chapter. This background information on the subject matter was obtained from books, magazines, journals, research articles and workshop proceedings.

The third chapter treated the research design and methodology of the thesis in general and type of the study, variables used in the study, sampling frame and sampling population and methods used to draw samples, data sources, data collection instruments, and the method of data analysis were depicted in particular in this chapter.

The fourth chapter, which is the main theme of the thesis, constitutes the role of rural microfinance on pastoral household food security. Hereunder, profile of beneficiaries, production and consumption, asset base, and risk reduction role of microfinance were assessed. Data presentation, analysis, discussion and interpretation were made in this chapter. The final chapter presents the summary of findings, conclusion and recommendations that were deemed necessary on the subject of study. These recommendations were given on the bases of the research findings in the preceding chapter. These recommendations were meant for indicating directions on alternative pastoral development interventions and livelihood improvements at grass root level with the help of rural micro finance services.

Chapter 2. Literature Review

2.1 Definitions and Concepts of Household Food Security

Food Security is nothing but the access of all people at all times, have physical and economic access to sufficient, safe and nutrition food for healthy and active life (Yared, 2001). This definition involves four concepts and conditions. First, there is a need to have adequate food supply or availability of food. Second, there is a need to have stable supply without fluctuations or shortage from season to season or from year to year. Third, accessibility to food and the subsequent affordability and fourthly, there is a need to have quality and safe food to eat.

Maxwell (1991) defined food security in that, food security is achieved when a country or people are food secure when their food system operates efficiently in such a way as to remove the fear that there will not be enough food to eat. According to him, food security will be achieved when equitable growth ensures that groups have sustainable livelihoods. Thus, food security requires the efficient and equitable operations of the food security system. The essential elements of food security are the availability of food and the ability to acquire it, which seems to mean securing enough to eat either by production, purchase, exchange or gift.

Based on this, there are more than 200 definitions and 450 indicators of food security used by scholars, development practitioners and governmental and non-governmental agencies (Hoddinott, 2001). Food security especially at household level is dependent on the level of household resources (capital, labor, knowledge) and prices of all these.

More importantly, adequate access to food can be achieved without households being self-sufficient in food production. This means that the ability of household to generate sufficient income, which together with own production can be used to meet food needs. In the household food security, the situation of individual food security needs to be raised to make sure how food is allocated within the household and biological utilization of the available food. In the first condition, in households where distribution is unequal, it is possible for aggregate access to improve and for individuals to experience no change in their food security status. In the second condition, the ability of the human body to take food and translate it into either energy that is used to under take daily activities or is stored. Food utilization requires not only an adequate diet, but also a healthy physical environment and an understanding of proper health care, food preparation, and storage processes.

The concept of food security has spatial and temporal dimensions. The spatial dimension refers to the degree of aggregation at which food security is being considered. It is possible to analyze food security at the global, continental, national, sub national, village, household and individual level. The temporal dimension refers to the time frame over which food security is being considered.

In many literature of food security, a distinction is made between chronic and transitory food insecurity. Chronic food insecurity is the inability to meet food needs on an going basis where as the transitory food insecurity is when there is inability to meet food needs for temporary nature. Transitory food insecurity can also be further categorized into cyclical where there is regular pattern to food insecurity and temporary, which is the result of a short- term, exogenous shock such as drought or floods.

2.2 Determinants of Household Food Security

In much literature of food security three core determinants of household food securities are drawn (Omosa, 1998; Alamgir and Arora, 1991; Hubbad, 1995; and Gittinger, et.al, 1987). These distinctions include availability, access and utilization dimensions. Availability factor refers to the preference of sufficient food for all people through production and purchase. Availability of sufficient food is determined by domestic food stock, commercial food imports, food aid and domestic food production.

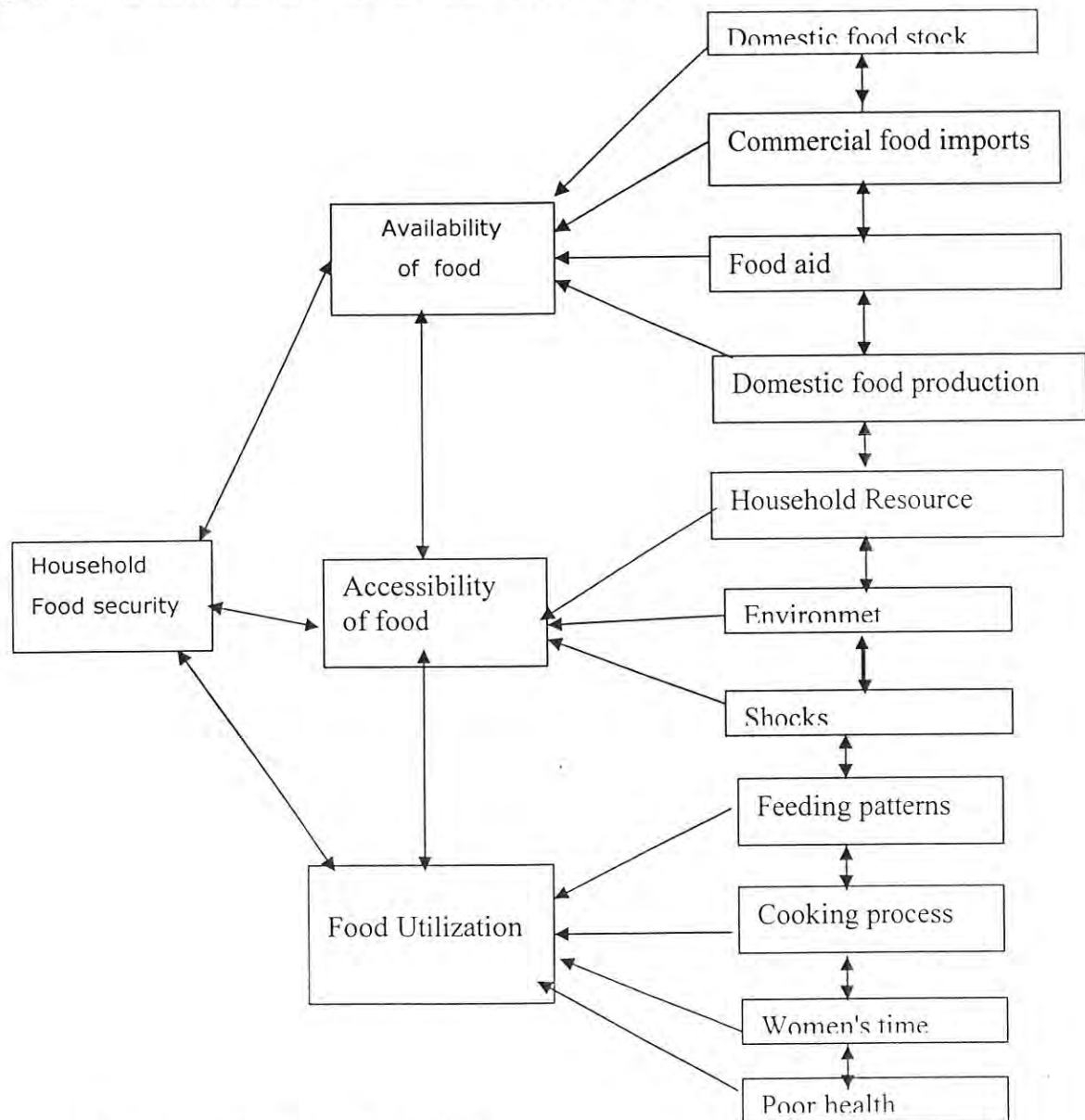
The general environment, household resources and shocks determine the household access to food. The household resources include the household income, intra-household distribution of income, price of food and bargaining power of the household. Thus, food insecurity can be traced back to lack of adequate purchasing power. Basically, there are four forms of household entitlements, which can be converted into purchasing power such as production based, own-labor, trade based (inheritance) and exchange (Drez and Sen, 1989). A household would be afflicted by food insecurity if the purchasing power obtained from the sum of these entitlements at a given period of time, were not adequate to meet target consumption levels. The capacity of a household's purchasing power would be dependent on not only on the size of these ownerships but on the prices of these ownerships relative to the price of food.

Similarly, the country's political environment, marketing systems, food import conditions, and monetary policies and so on affect the access of household to food. The access to food by a particular household is also determined by whether there is shock or not. These shocks can be defined by the presence of droughts, natural disasters and conflicts.

The other core determinant of household food security is the utilization dimension- the appropriate use of the available food. The feeding patterns, the cooking processes, the

women's time, and the conditions of health of household members determine the utilization dimension. Based on these contexts, the determinants of household food security are depicted as follows.

Figure 2. 1 Determinants of Household Food Security



Source: Organized by the author, 2006

Determinants of food security can be measured by food production, food stock, export, and import of food in the case of availability. In the case of food accessibility, it can be measured through household income and expenditure, which constitute household composition, household expenditure patterns, calorie intake, consumption of major products and socio-economic characteristics. The household access to food can also be measured through adult equivalent units or weighting based on caloric requirements. This kind of concept allows a number of measurements to be computed including food energy deficiency, diet quality, and vulnerability. It further, allows identifying target groups and monitoring interventions and it seems more reliable where as in the case of food utilization, individual dietary surveys are carried out to judge accuracy of diet to meet requirements and identify linkages between dietary risk factors and health outcomes.

According to FAO, the real indicator used in measuring food utilization is dietary energy supply (DES) reflected in the kilocalorie, thus food insecure is the proportion of population whose daily food consumption is below the minimum daily requirement (2200Kcal/day). In the case of Ethiopia, the total calorie intake per individual per day is 2211kcal (CSA, 2001), which is almost equal to the minimum requirement.

2.3 Causes and Consequences of Household Food Insecurity

Food insecurity at household level arises from several causes, which include environmental risks such as (drought, disease, etc), market risk, poverty and conflict. Devereux and Maxwell (2001) stated that, the naturally most food insecure environments in the Africa are the arid and semi-arid zones where drought is a major recurring risk.

Drought was originally seen as an exception that is as an unpredictable disruption of normal rainfall patterns but recently this kind of presupposition has challenged by the research on dry land ecological dynamics, which rather concluded that climatic uncertainty is a norm. This norm state, that dry land ecology is a process, which stems from episodic events originating outside the local ecological environment, drives processes. In such environment uncertainty is the key constraint to which farmers and herders must adapt.

Like the environment, conflict has become a critical influence on food security. Conflict has multiple causes such as issues over sovereignty (interstate conflict), which highly damage the food security of the inhabitants of the disputed zones, or over issues as access to land, water or mineral resources (ethnic, political, or economic conflicts). The main immediate protagonists of such conflicts are the farmers or herders directly involved. There are always wider circles of actors including business people, politicians, the security forces and mercenaries employed by both sides. Whatever the cause of conflict may be, local conflicts have drastic consequences on the household food insecurity, and thus the direct economic outcomes include:

- Destruction or theft of livestock and other properties,
- Price changes for basic commodities,
- Closure of markets, with further knock-on effects on the availability and prices of staple foods and livestock,
- Induced sales of assets such as livestock at low prices,
- Loss of access to farm land, pasture or water,

- Long term changes in the productivity of pasture land (under grazing and bush encroachment in insecure areas and overgrazing as animals crowd into secure areas),
- Destitution and displacement,
- Increasing political marginalization of conflict areas, and
- A break down of local ethnic or community relations.

Based on these, the impact of conflict on the household food security is tremendous and multifaceted. At household level conflict may be seen as a cause of unpredictable risk. A growing body of literature indicates that, pastoralists are the main inhabitants of the vulnerable dry areas and pastoral areas are often the theatre for violent conflict (Devereux and Maxwell, 2001).

2.4 Household Food Security Indicators

There are a number of indicators that have been identified with the development of the concepts of food security. However, the utilization of these indicators varies between the characteristics of the investigations, procedures and level of aggregation. The purpose and depth of investigations further influence the use of indicators. Different types of household food security indicators are classified into three main categories namely supply indicators, food access indicators and outcome indicators (Demeke, et. al, 1995 and CRDA, 2000). Below are the brief descriptions of these indicators.

1. The food supply indicators, which are reflected by

- Meteorological data,
- Information on access to resources,

- Market information,
- Institutional and market infrastructures, and
- Regional conflict, etc.

2. The food access indicators that are explained by:

- Land use practices,
- Dietary change of food source,
- Diversification of income sources,
- Diversification of livestock,
- Livestock sales,
- Sale of productive assets,
- Access to credit, and
- Seasonal migration, etc.

3. The outcome indicators such as the level and changes in food consumption and the amount of food in stores serve as proxy estimates for measuring household food situation. The following specific variables can be mentioned under outcome indicators:

- Change of household budget and expenditure,
- Change in the frequency of food consumption,
- Subsistence potential,
- Nutritional status,
- Household perceptions of food insecurity, and
- Storage estimates.

2.5 Vulnerabilities and Traditional Coping Mechanisms

2.5.1 Vulnerabilities

The vulnerability of pastoral households arises from market dependence. A pastoral livelihood does not necessarily mean that households are directly dependent on livestock for their food. In most pastoral livelihood systems milk is responsible for between a third and a half of calorie intake and the rest of calorie intake comes from consumption of staple cereals which pastoralists obtain them mostly by purchasing. Dependence on the market for a substantial part of daily calorie intake makes pastoralists vulnerable to changing prices of the products they sell- live animals, milk, animal products like hides and wool- and the cereals they buy.

The successive droughts in the lowland parts of the country have raised the vulnerabilities of pastoralists in different aspects. These vulnerabilities include the occurrence of livestock diseases, natural resource degradation such as water and pasture shortage, and shift of many pastoralists to sedentary life and the subsequent enclosures of grazing lands. The vulnerabilities of pastoralists in these areas are aggravated by remoteness of the area, slow response of the government and donors to emergency, absence of off-herd and off-farm employment opportunities and the terms of trade between livestock and cereal prices. Furthermore, the vulnerabilities of the areas have been increased by the limited capacity of the regional government to respond to the emergency situations, and poor targeting of beneficiaries of food aid.

The food security conditions of pastoral community are deteriorating from time to time because of epidemics of animal diseases, flooding as well as local conflict. These situations have led to declining size of livestock herds, access to dry season grazing

areas and water resources which have impacts on weakening the pastoral economy and raised vulnerability of pastoral households to small shocks or disturbances.

2.5.2 Traditional Coping Mechanisms

Somali culture is based on the concept of mutual support, and has a variety of traditional mechanisms through which those in need can be helped, either within the extended family or by the society in general (Birch and Halima, 2001). *Sadaqa* encourages the giving of alms, while *hersa* refers to the collection of milk from families in one *rer* or homestead to be given to travelers or to those who have lost their livestock. *Zakaat* is a mandatory tax of a 2.5 percent that every Muslim is supposed to pay annually to the poor.

According to a study conducted by Webb, et. al, (1992), on the household level coping mechanisms during the onset of famine proved that, Ethiopian pastoral communities are often more mutually supportive, especially within clans, than their agrarian counterparts. Where it is difficult to find access to shared resources, households may resort to credit, mostly from relatives or merchants.

The coping strategy practiced in these areas is sedentarization. Many people no longer have enough livestock holdings to sustain a purely pastoral subsistence. If once drought and disease are disseminated, it took long time to recover. Thus, livestock income is supplemented with vegetable and cereal production by using small-scale irrigation along the banks of Dawa and Genale rivers and rain fed farming in the case of Filtu district.

The coping mechanisms in response to drought and food shortage are moving the livestock to distant places (even some times by crossing international borders), selling

livestock (as male cattle, calves, and small ruminants), and migratory employment in peri-urban centers as well as moving to towns which offer food aid distribution centers.

The pastoralists of dry land Africa demonstrate a diverse range of adaptations to the risk and uncertainty they face in daily life (Scoones, 1995). He further stated that, adaptations and risk avoidance are possible through maintaining mixed herds containing different animal species, being mobile and developing other forms of income to supplement herding such as farming, woodcutting and trade. This is because pastoralists are substantially depending on livestock and market for their food security. The economic dependence on livestock has important consequences for household food security of pastoralists. Livestock give households the flexibility to move away from problems of all sorts, which contributes to household food security (Devereux and Maxwell, 2001). Livestock mobility is not only a response to variable natural resource availability but also a response to changing market opportunities.

To this end, successful households in these more dynamic environments are those who are able to diversify economic activities to use different ecological niches (different microhabitats), economic contexts (accessing a new set of markets), social networks and political jurisdictions (moving across an international frontier). Mobility (including the migrations of herders with their animals and the wage labor migration of individuals) is one key to survival; the ability to build up a variety of forms of social capital is another type of coping strategies.

More importantly, diversification of incomes remains a very important strategy to supplement incomes from livestock and substitute when herds have been decimated. Pastoralists have always had such auxiliary incomes, from woodcutting and charcoal

making, trade, sale of labor, craftwork and so on. Formal interventions to encourage alternative incomes have tended to be unsuccessful (Scoones, 1995) whether irrigated agriculture, fishing or craftwork. Thus, there are clearly limits to how far outsiders can identify promising areas for supporting alternative forms of income generation to improve the household food security status of pastoral households.

2.6 Microfinance and Household Food Security

According to Scoones, 1995; Devereux and Maxwell, 2001, food- insecure households, both herders and farmers, are normally short of cash to buy inputs in the market. They need access to adequate credit, but the fact is that institutional credit is not available to them. Extending credit to smallholders can be a most effective way to promote food production and household food security. Herders and smallholders have difficulties in gaining access to microfinance services. The rural poor, living in remote areas and often illiterate, have trouble in understanding complicated lending formalities.

Eligibility requirements such as collateral or guarantees, have further excluded the pastoralist from traditional banking institutions. Moreover, people like Zeller, et. al, (1997) substantiated this argument in such a way that, the poor have little or no collateral to offer and the credit demand is so small. Savings, credit amounts and installments are small which raises per unit transaction costs. In addition, in the case of poor people credit needs for production and consumption can not be clearly distinguished. Thus the spheres of production and consumption are intertwined and inseparable. Given the vulnerability of the poor, risk aversion and related insurance behavior play important roles in the credit demand of the food insecure and poor households.

Covariate risks such as droughts, flood, and seasonal and individual household crises are central problems of the poor. A better understanding of existing informal institutions at the household and community levels could provide the key to designing sustainable rural financial systems that serve the food security of the poor. On the other hand, traditional credit institutions complain that small value loans to the poor rural people have high costs. And the repayment rates are often poor, which has further eroded their interest in undertaking such loans which supposed to provide food security (Arora and Alamgir, 1991). Because of this, the rural poor have been forced to resort to exploitative, informal sources of credit. The cost of such credit is very high and it is usually used for emergency or consumption needs, marriages, etc rather than for productive investment. The poor when resort to such loans, thus entrenches their food insecurity.

Providing micro financial services to the poor could efficiently and effectively contribute to income generation and consumption stabilization; thereby addressing the long-term and short-term food-insecurity of the poor. Food security at household level is defined in its most basic form as access by all the people at all times to the food needed for a healthy life (Zeller, et. al, 1997). From the practical point of view, access to adequate food is a necessary but not a sufficient condition for a healthy life. A number of other factors such as the health and sanitation environment and household or public capacity to care for vulnerable members of the society are also important conditions.

2.7 The Role of Microfinance for Household Food Security

The pattern of household response to food crises generally involves a succession of stages along a continuum that runs from long-term risk management to crisis damage

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containment to the extreme instance of household collapse. The long-term risk management measures include saving and investment activities, diversification of household incomes and establishment of access to inter household transfers through social support networks that encompasses gifts, food-sharing, informal insurance and credit.

The concept of financing for food security explores the potential of financial services for stabilizing consumption and reinforcing the households' wealth and income base. This concept is much broader than that of providing credit for particular income-generating activities such as agricultural production and off-farm micro enterprise (Zeller, et. al, 1997). Many credit programs and institutions narrowly focus on the enterprise, without taking into consideration the socio-economic context within which the household or individual members invest, produce and consume.

A broadened role of rural microfinance for food security addresses credit and savings needs for agricultural production and off-farm enterprises, and it includes other demands for financial services, such as financing food consumption and health care as well as providing households' with more effective savings, credit and insurance services for smoothing consumption, holding precautionary savings and diversifying the asset portfolio (Zeller, et. al, 1997).

Rural microfinance can provide either consumption credit or production credit for the poor to maintain their food security. Consumption can be differentiated into various types of goods such as food, spending on health care, social obligations and leisure. When they are faced with consumption crises for food and other basic non-food items, their demand for credit will be steep in order to increase current consumption at the expense

of future consumption. Furthermore, investments in human capital, for instance choice of number of children and related expenditures on education and physical production capital (land, tree, livestock, machinery, irrigation) could be specified in future extensions of current consumption.

Policy instruments for improving household food security are manifold. First, it needs to increase the household income. Next, there is also a need to stabilize or lower food prices. Then there is still a need to improve the households' access to inter temporal markets (savings, credit, insurance products that require a transfer of resources overtime).

To directly address the problems of income and purchasing power during specific periods, the stabilization of key commodity prices and targeted interventions such as income transfers, food subsidies or public work projects for the food insecure are vital (Zeller, et. al, 1997). Improving the households' ability to adjust its consumption and investment between periods through access to savings, credit and insurance markets will enable households to make adjustments of disposable income and consumption in the current period, but increase it for future periods. For the food insecure households, savings in the form of cash, food and other assets are an important means of self-insurance during unexpected food insecurity.

On the other hand, borrowing increases current disposable income at the expense of available income in future periods. Moreover, it enables investment in human and physical capital that may improve future income and consumption or avoid shortfalls in current consumption. Many poor households face the risk of transitory food insecurity, even if their incomes on average provide a sustainable standard of living. There are

sources of risks in rural households. The time, pattern, intensity and effects on food security of income fluctuations are difficult to anticipate for household members. Thus, there is a potential demand for savings, credit and insurance services that more efficiently contribute to consumption smoothing.

As Abdil-Khalil Idris (2003) stated, during the past 40 years African governments and donors have set up credit programs aimed at improving rural households' access to credit. However, the vast majority of these credit programs especially the so-called 'agricultural development banks' which provide credit with subsidized interest rates, have failed to achieve their objectives to serve the rural poor and to be sustainable credit institutions. In response to these failures, innovative credit delivery systems are being promoted as a more efficient way of improving rural households' access to formal credit with no or minimal government involvements. Most of these lending are group-based. They use joint liability and peer pressure as collateral substitutes and community-based credit delivery systems to reduce transaction costs.

Many literatures argue that, the Grameen Bank is the first lending institution in Bangladesh to substitute material collateral (security or guarantee) with social collateral (organized social pressure from group members) for its lending among the poor rural people. The ideology of the bank in organizing loan groups is to make each member of a group responsible to and for the collective to enhance social solidarity (Rahman, A., 1999; Abdil-Khalil, 2003; and Omosa, M., 1998).

The provision of microfinance to the poor can be recognized as a means through which food insecurity could be alleviated more effectively. The hope is that much of the household food insecurity can be alleviated and that economic and social structures can

has been heavily administered by donor agencies for fear that it would be miss-used. As a result, transaction costs have been very high. Thus, herders have so far benefited little from micro finance programs (Swift, 2003). There are difficulties in targeting micro finance to herders which include the herding economy and herding society is little understood by micro finance providers and herders are mobile.

Herders' income streams depend on highly seasonal events like milk and live animal sales. Their demand for cash is also highly seasonal. Cash savings would allow herders to smooth these uneven income and consumption streams. At present, there are no savings products designed with herders' needs and constraints in mind. Credit in the pastoral communities should be designed to fit into and complement existing credit schemes already operated by pastoral groups. For instance, if a household gets lost its animals in an accident (where it is not at fault), it will usually have some replacement animals rapidly will be provided through networks of kin or friends. A well-known example of this kind is the "*habbanae*" herders of Niger (Swift, 2003). More importantly, in many pastoral societies the concept of private individual animal ownership is tempered by a set of general rules where the clan itself, which redistribute animals from a rich household to a poorer one to ensure the economic viability or food security situation of the later, holds ultimate ownership of livestock.

Herders have little experience of banks and start from a position of low trust. Access for banking services is often difficult, since herders may be faraway from a conventional bank, especially during seasonal migration, alternatively harsh weather may make movement impossible just the amount when access to saving is most urgently needed.

The cost in herders' time of making a deposit or withdrawal may further be very high, which may hinder herders to use the formal banking systems.

Like the farming societies, microfinance services can have an impact on the herders' household income, household assets, education, nutritional status, and coping strategies. Based on this, credit and savings services can have direct contribution for household income diversification, accumulation of assets like livestock, expenditures on educating pastoral children, purchasing and consuming food with more balanced diets and coping with risks like drought, sickness and livestock diseases.

Chapter 3. Research Design and Methodology

3.1 Type of Research

A cross-sectional type of research design was used, which employed comparative study between participants and non- participants of micro finance scheme. Furthermore, a combination of descriptive and explanatory survey types of research was used. Cross-sectional survey design was selected to collect data from the sample population at specific point in time and based on the results to make generalizations. Descriptive survey research was chosen to generally describe the differences experienced by households aroused from obtaining microfinance services in comparison with non-beneficiary households. On a similar fashion, explanatory type of survey research has been used to explain in detail why food security differences among the beneficiaries and non-beneficiaries.

3.2 Variables of the Study

In the process of studying the role of microfinance on pastoral household food security different variables have been assessed with regard to households who were benefiting from microfinance services. These variables include the household income, expenditure on food and non-food items, child schooling, food production and consumption, savings and household coping strategies during food crisis. Under this study, households have been classified into two groups, participants and non-participants of microfinance services for the purpose of comparisons.

3.3 Sample Population

The sample frame comprised of two categories: the microfinance participant and non-participant households. The sampling frame was compiled by drawing together lists of

names of beneficiaries obtained from the Pastoralist Concern Association who were providing micro finance service to them. For non-participants names were obtained from village savings and credit cooperatives using credit seekers data. The following table portrays the distribution of population and sample taken.

Table 3.1 Distribution of beneficiary and non-beneficiary population and number of sample taken from each population

S/N	District	No of Sites	Beneficiaries			Non-beneficiaries		
			No of Beneficiaries	Sample taken(5 th loan cycle)	% Covered	No of credit seekers	Sample taken	% covered
1	Filtu	3	131	29	22.14	145	29	20%
2	Dollo Ado	2	95	28	29.5	140	28	20%
3	Cheretti	1	50	-	-	-	-	
4	Hargelle	1	35	-	-	-	-	
	Total	7	311	57	18.3	285	57	20%

Source: Computed from PCAE Annual Report, 2004 and village credit and saving cooperatives, 2006

The participants in the micro finance service were selected from the lists using stratified random sampling method, based on the loan cycle of the beneficiaries. Purposive stratified random sampling was used to select a total of 114 households (57 households participating in micro finance scheme and 57 non-participants) for the study. The study was conducted in Dollo Ado and Filtu districts of Somali region. Those participants who

have reached the fifth loan cycle or received 4000 birr so far has been targeted to study the role of the scheme in improving household food security.

3.4 Data Sources

There were two types of data sources- primary and secondary. Primary data has been obtained from the potential informants (beneficiaries and non-beneficiaries) and the micro finance specialists who were working for the organization delivering the scheme. The secondary data were further gathered from governmental and non-governmental organizations including Dollo woreda women affairs, agriculture, education and health offices from governmental organizations and Pastoralist Concern Association and Save the Children Federation (USA) from non-governmental organizations.

3.5 Data Gathering Tools

Different data gathering tools were employed. These include: structured, semi-structured and open-ended questionnaires. The structured and semi-structured questionnaires were administered to participants and non-participants of the microfinance service where as the open-ended questionnaire was presented to the facilitators of the scheme with the organization.

Direct observations have been made with respect to household asset base, and household business activities of both beneficiaries and non-beneficiaries. Direct observations were also made in the day-to-day life of key respondents. Due to their responsibilities and knowledge on the family issues such as household income and expenditures, food prepared and displayed to family members, women were targeted as key respondents. Women were the recipients of the microfinance services for that matter, so that they know more than their male counterparts in the family.

3.6 Method of Data Analysis

Quantitative data analysis has been employed. This method was used to present and analyze the information collected from the field. The data was presented in the form of tables, graphs, and figures. Furthermore, it was analyzed using percentage, average and measures of central tendencies and dispersions.

Likewise, the data analysis has been made with the help of “Statistical Program for Social Sciences”. Based on the research questions, emphasis has been given on the differences and similarities of participants and non-participants of microfinance services on the issues of education, occupation, and household size. Additionally, incomes and expenditures, sources of income, food production, consumption and household coping strategies in response to food shortage have been investigated.

Chapter 4. Research Results and Discussion

4.1 Description of the Study Areas

4.1.1 Locations, Topography and Climate

Filtu and Dollo Ado districts are located in the southern part of the country with 120,111 and 150,233 populations respectively (SRPO, 2003). Filtu district is categorized in the semi arid zone while Dollo Ado district is located in the arid zone. The two districts are covered by low laying hills and flat lands with an altitude variation ranging from 200-1300 meter above sea level. Filtu borders with Oromia region, Afdher zone and Dollo Ado district where as Dollo district shares long borders with the republics of Kenya and Somalia as well as Afdher zone of Somali region (see the map).

Vast areas of rangelands dominate Filtu district, which is suitable for livestock production especially camel and cattle. Besides the livestock population, pastoralists in this district increasingly practice rain fed farming. Except few boreholes, there are no permanent water points, which can be used for both human, and livestock population. The existing boreholes, which can be used for perennial sources of water, are frequently broke down and take very long time to repair. Thus, the temporary water points dry up during the dry seasons and forces local residents to look for other options. There are few ponds, birkas, and shallow wells, mostly constructed by non-governmental organizations that contain water during rain seasons. Due to recurrent drought and concentration of human and livestock population around these water points, either they will not harvest enough water or they dry up early in the dry season.

Unlike Filtu, Dollo Ado has two agro-ecologies-the vast grazing areas outside the rivers and the banks of Dawa and Genale rivers. The vast grazing areas outside the riverbanks suffer from water shortages, both for human and livestock populations in the district. Furthermore, there are rapidly growing suburbanization and villagization along the riverbanks, and more than 70 percent of the residents are concentrated in these areas. In the district, large number of people are giving up pastoralism and engaging in smallholder farming with the help of water lifting pumps. According to the District Agriculture Office (2006), there are more than 450 irrigation engines that are used by smallholder agro-pastoralists in the riverine areas.

Due to the concentration of population in the riverbanks, which emanated from unplanned sub urbanization and cultivation processes, almost all riverine sites are occupied by agro-pastoralists. This practice is denying pastoralists to access water points and grazing sites especially during dry seasons and aggravate the existing food insecurity situations. More importantly, this practice is accelerating deforestation and environmental degradation in the area.

Both districts are very remote and have harsh climatic conditions. The temperature ranges from 27-42c⁰ per annum. The rainfall is erratic and varies from season to season. The mean annual rainfall for Filtu and Dollo Ado are 600mm and 300mm respectively (SCF/UK, 2002). There are two major seasons in these districts-the wet and dry seasons. The wet season can be classified into *Gu* and *Dayr*. The *Gu* is the long rain season, which extends from April to June and the *Dayr* is the short rain season that extends from October to December. Like the wet season, the dry season is also explained by *Jilaal* (January - March) and *Hagaa* (July-September). During wet season,

the movement is towards rangelands outside the riverbanks where as during the dry season towards the permanent water points especially along the riverbanks, wells and boreholes.

4.1.2 Socio-economic conditions

Like other pastoral areas in Ethiopia, Filtu and Dollo Ado districts were highly marginalized by the previous regimes, thus the interactions of these areas with the central parts of the country is very minimal. There are no well-developed infrastructures like roads, health, and education, banking services, telephone and postal services etc. Both health and education coverage's in these areas, for instance are by far below the national coverage. Most of the health centre and education facilities are either not operational or underutilized due to lack of manpower and equipments. The quality of services in these facilities is also very low.

In Dollo, there are 31 schools among them one secondary school, 13 primary and 17 alternative basic schools. In these schools a total of 7121 students are currently attending, of which 30.5 percent are girls. The drop out rate is very high both for boys and girls, 31.3 and 31.1 percent respectively (Dollo Ado District Education Office, 2005). This high dropout rate for both girls and boys are attributed by poor education, health, nutritional status and the current severe drought, which has displaced large number of populations including parents. Thus, in these areas individual capital is very low and this is partly the cause and consequence of food insecurity.

Due to the recurrent droughts, environmental degradation and weak socio economic services, the herd size per household is declining from time to time. The livestock

productivity is also declining, and this makes to increase the number of food insecure households. According to the Federal DPPC (2005) as of 2000, on average 36830 persons in Dollo Ado district have been affected by drought. In the same manner, on average 4185 Metric Tons of food aid has been distributed to the above-mentioned population.

Some of the non-governmental organizations (Save the Children/USA, 2006) that are operating in the district currently revealed that, 45 percent of the total populations are currently affected by the drought and 30 percent of livestock, especially sheep and goat already died. Furthermore, the assessment on the prevalence of mortality, morbidity and vaccination coverage in the children from 6-59 months in the pastoral food economy zone of Dollo Ado district indicated that, 31.7% illness prevalence, 0.77deaths/10,000/day of child mortality, 3.35deaths/10,000/day of under five mortality and BCG and measles vaccination coverage are at the rate of 9.6 and 1.6 percent respectively. The report revealed that the situation is critical and appealed for the international communities for relief support (SCF, 2006). Like Dollo, the populations of Filtu district have been suffering from food insecurity. Under these years 21700 persons were averagely affected and 2153 MT of food aid was required every year.

4.2 Traditional Division of Labor

Throughout pastoral societies, households are traditionally characterized by being interdependent, yet distinct roles and responsibilities for men and women do exist. Within the pastoral households, men and women have different roles but generally different labor responsibilities that are determined by household/herding tasks. The

different labor responsibilities are important in the context of food security. Since women's labor is more likely to be used on food related tasks and women's income is more likely to be spent on household foodstuffs. Thus, the additional income earned by women in the households has a great impact on food consumptions.

The roles and responsibilities between men and women in pastoral households are clearly defined. Men are responsible for activities related to the grazing and survival of the herd. These include milking camels, managing the herd production, watering the livestock, looking for availabilities of pasture and water during the dry season, and taking animals to the market when need arise. In bad years, men resort to cutting wood and involve employment in the urban areas to generate extra income for the family.

Intra-household activities, responsibilities and incentive structures for different household member and the decision-making and allocation patterns of resources within a household are critical to the issue of food security. Generally, in Dollo Ado and Filtu districts, women's social responsibilities are primarily centered on the family. Pastoral women's working days are long and; they aimed providing for the family's daily needs including herding and seeking income from other sources (firewood collection, making and selling charcoal) as well as petty trading. This is confirmed by a study by Abdil-Khalil (2003), which indicated that responsibilities of women and allocation of time for household work and farming considerably exceed those of men. The study also indicated that, women were found to spend a minimum of 15 hours a day on these as compared to 6 hours for men.

Unlike men, women are responsible mainly for domestic tasks which include cooking, collecting firewood, looking after children and small flocks and lactating animals, making

mats for huts, milking goats and cattle, preparing ghee and taking milk to the market and running small/household business. In male-headed households, women tend to have little responsibility especially over the use of income. Growing body of literature (Hubbad, 1995; Alamgir and Arora, 1991; and Abdi-Khalil, 2003), show that within households; women get less food than men in absolute terms as well as in terms of their nutritional requirements. On the other side, when women has control over the use of household income, the additional income she earns is more likely to translate into high caloric intake, thus women's earning is more likely to be spent nurturing activities, that have an observable nutritional benefit to the whole family.

4.3 Demographic Characteristics of Sample households

4.3.1 Sex and Age of Sample Household Heads

The sample households were classified into beneficiaries and non-beneficiaries. They are further categorized into two districts and from each district some households were interviewed. The sex and age of household heads determine the household incomes and the subsequent food security in the respective households. Thus, the gender of household heads and their mean age is portrayed in the table below.

Table 4. 1 Sex and mean age distribution of household heads by district

Gender and mean age of household heads	Filtu district		Dollo Ado district	
	Beneficiary n=29	Non- beneficiary n=29	Beneficiary n=28	Non- beneficiary n=28
Sex of household heads (%)				
Male	58.6	51.7	60.7	50.0
Female	41.4	48.3	39.3	50.0
Mean age of household heads				
Male	49	44	42	45
Female	45	49	43	40

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

In the table 4.1, the proportion of female-headed beneficiary households in Filtu district is 58.6 percent as compared to male-headed client households (41.4%). The household headships for the non-beneficiaries in the above district show similar trends for both sexes. Moreover, for the beneficiary households in Dollo Ado district, the male proportion of household headship is higher than that of female-headed households. Unlike the beneficiaries, the proportions of male and female-headed households are the same in the non-beneficiary households.

In the present study, an attempt has been made to identify the mean age of households. As it can be seen in the above table, most of the respondents are above 40 years of age. The mean age of male and female-headed beneficiary households in Filtu district are 49 and 45 years respectively where as that of non-beneficiary households for male and

female are 44 and 49 years respectively. Similarly, in Dollo district the mean age of male-headed beneficiary households is 42 years where as 43 years for female-headed households. For the non-beneficiary households, the mean ages of male and female-headed households are 45 and 40 years respectively. Even though the loan recipients are women groups, a significant proportion of male headed households are represented by their women partners. There are no pronounced age differences among the male and female headed households.

4.3.2 Marital Status of Sample Households

Marital status of household head is one aspect of determining demographic characteristics of sample households. The marital conditions of households influence the income and the consequent food security situation of the family. In the current research, marital statuses of sample households were assessed and the result is portrayed in the table below.

Table 4.2 Marital statuses of household heads by district (percentage)

Marital status of household head	Filtu district		Dollo Ado district	
	Beneficiary N=29	Non-beneficiary n=29	Beneficiary n=28	Non-beneficiary n=28
Married	58.6	51.7	60.7	50
Single	-	-	-	7.2
Divorced	6.9	20.7	10.7	10.7
Widowed	13.8	20.7	17.9	25.0
Separated	20.7	6.9	10.7	7.1
Total	100	100	100	100

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

Table 4.2 reveals that, even though the microfinance targets are the women groups most of them in the two districts are married (58.6% and 60.7% for Filtu and Dollo district respectively). The divorcees, widowers, and separates account for 41.4 percent among which 20.7 percent are separated. For purpose of the study, separated is defined as those households whose father or mother live in different places. In the Somali culture, married couples are headed by the male thus, those married were considered as male headed otherwise they are female headed households.

The result shows that, larger proportions of households are female headed. Female-headed households are prone to small shocks and highly vulnerable. Since one of the objectives of the microfinance supplier organization is to enhance the incomes of poor families, appropriate numbers of female headed households are involving in the program. This implies that, development interventions focusing on these households can reduce the magnitude of vulnerability and food insecurity in the study areas.

4.3.3 Family Size and Age Composition of Sample households

Size of household refers to the entire number of persons related or unrelated, who comprise private household. Family size and age composition of households determine household food security. When there are extended family members and broad based age distribution, there is a need to have extra food for family consumption, which can be obtained either through own production or purchase from the market. This requires more expenditure for food and less for savings and investment. The following table illustrates the mean family size and age composition of respondents.

Table 4.3 Mean family size and age composition by household headship and district

Mean family size and age composition of sample households	Filtu district		Dollo Ado district	
	Beneficiary n=29	Non-beneficiary n=29	Beneficiary N=28	Non-beneficiary n=28
Mean family size by sex				
Male headed	8	8	10	9
Female headed	8	7	8	8
Mean age composition				
Adult	3	3	4	4
Children	6	5	6	5

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

As clearly indicated in the above table, on average there are 8 members in both male and female-headed sample beneficiary households in the Filtu district. For the non-beneficiary households, the mean family sizes for male and female-headed households are 8 and 7 members respectively. The mean family size of male-headed households in Dollo Ado, both for beneficiary and non-beneficiary households, are higher than their counterparts. The average family size of male-headed beneficiaries and non-beneficiaries are 10 and 9 respectively where as female headed family averages are 8 for both population categories.

In the current study, adult member of a family is any one whose age is 18 years and above. Though there is age category among non-adult family members as children, youth, school age etc, for the purpose of this study all family members whose age are

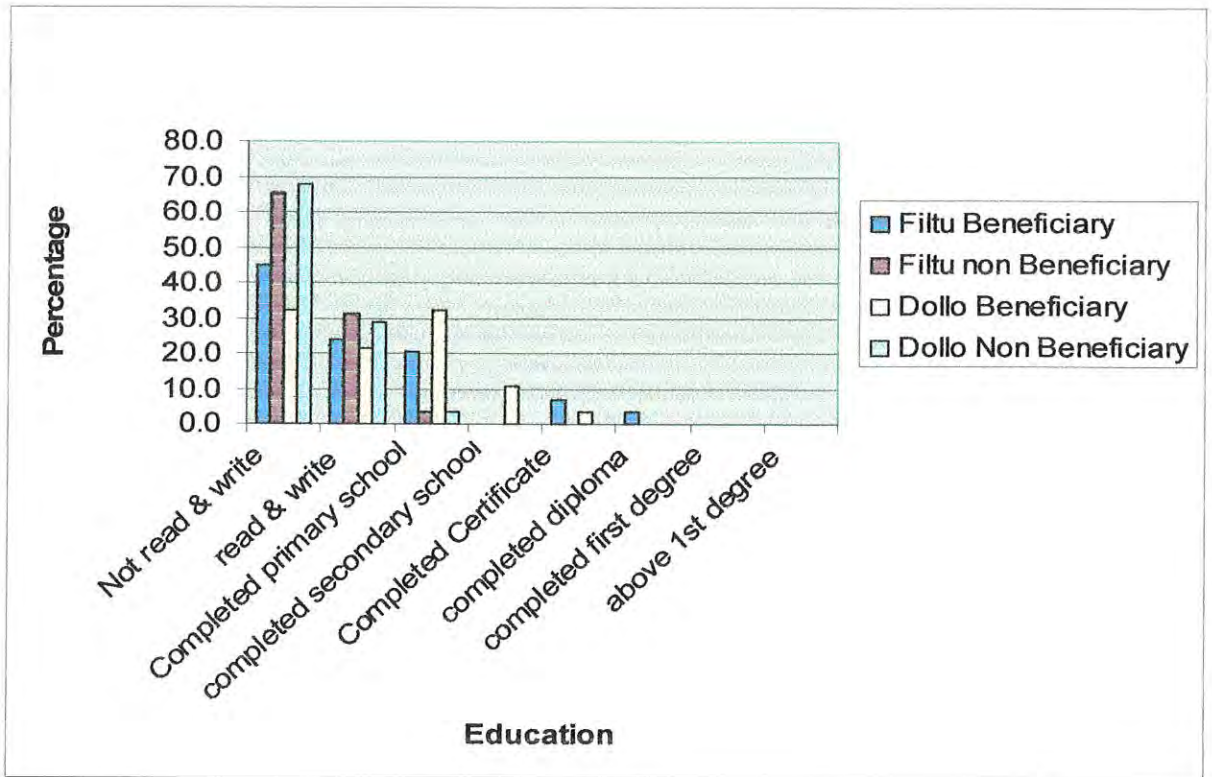
below 18 years are considered as children. Based on these assumptions, the preceding table shows the mean age composition of sample households. In Filtu district, on average the beneficiary households have three adults and six children in their households. In the same district, the mean adult and children composition of non-beneficiaries are three and five respectively. When we look at the case in Dollo Ado, there is no significant difference in the age composition of both beneficiaries and non-beneficiaries. Both families on the average have equal number of adult members (4), where as 6 and 5 child members respectively.

A study conducted by CSA (2003) confirmed that, the majority of agricultural households in Somali region have 6-9 persons (42.7%). It further states that, male-headed agricultural households appear to have larger household size. The table above also confirms this statement in that, the male-headed households in Dollo Ado district has one more person than female headed households.

4.3.4 Educational Status of Sample Household Heads

In Ethiopia, illiteracy is common among the pastoral societies. The illiteracy rate is higher in poor and female-headed households than the better-off households. As per the figure below comparisons were made between beneficiaries and non-beneficiaries of microfinance schemes in Filtu and Dollo Ado districts.

Figure 4.1 Educational Statuses of Sample Households Heads (percentage)



Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

These comparisons show that, the non-beneficiary households in the two districts have low literacy rates. That is to mean, 65.5 and 67.9 percents of non-beneficiaries in Filtu and Dollo Ado districts respectively could not read and write. For the beneficiary households, 44.8 percent in Filtu and 32 percent in Dollo Ado do not read and write.

In the contrary, the proportions of households who can read and write are higher in the case of non-beneficiaries in the both districts. Those beneficiary households who can read and write are almost similar in the two districts (24 and 21 percents for Filtu and Dollo respectively). Besides these, as one goes up in the educational hierarchies there are differences between beneficiary and non-beneficiary households.

For instance, there are very few beneficiary household heads who have attained certificate and diploma levels whereas none of the non-beneficiaries could achieve the same. The normal trend is that, the proportion of educational attainments among pastoral communities decrease as one goes higher into educational hierarchies. Thus, in the pastoral areas and in the rest of the country there is an inverse relationship between the number of household heads and their educational attainment.

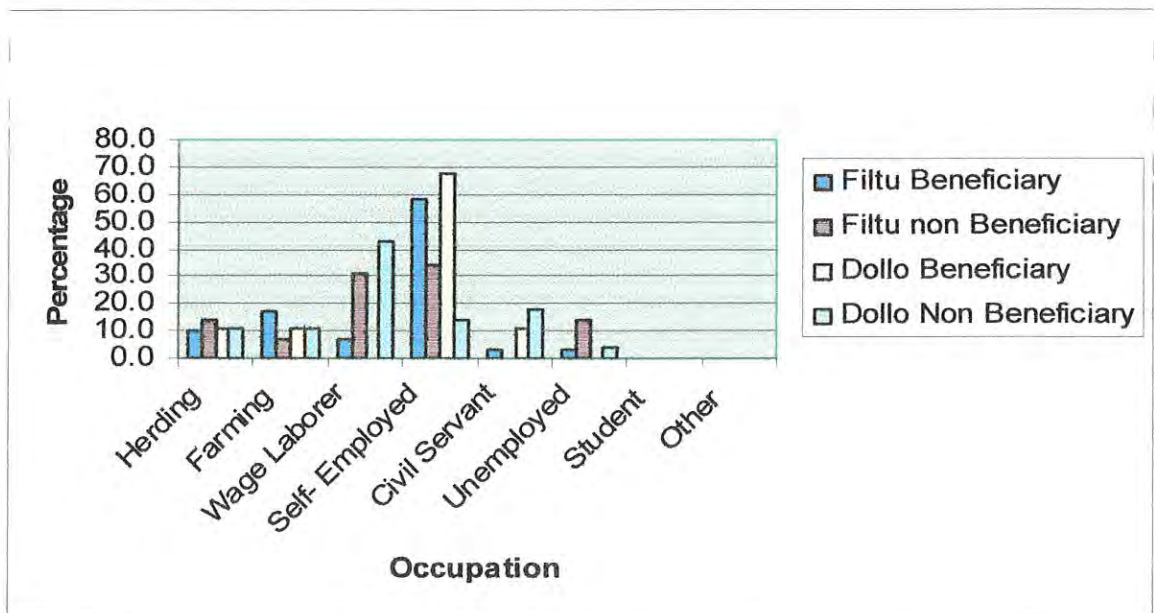
The previous literature indicates that, generally the literacy rate in Somali region is about 25.6 percent with the rural literacy rate of 22.2 percent (CSA, 2003). The result is almost similar to the above findings in both districts. The previous study further revealed that with respect to the literacy rates, the study districts have the highest level (34.5%) with the advantage in both agricultural and non-agricultural populations. In this regard, the above stated findings for the both districts contradict the adult literacy class given by the Pastoralist Concern Association Ethiopia (PCAEE) for the program beneficiaries. This is because of the fact that, as can be seen in the figure above, those sample household heads who can read and write is more pronounced in the non-beneficiaries in the both districts.

The microfinance scheme has little contributed for the educational improvements of the beneficiary household heads in both districts. One reason for this might be that, adult education has not targeted the beneficiaries. The second reason is that, they might not have time to fully attend the program because they might be engaged in the petty trading and family welfare; or they might not have spare time.

4.3.5 Occupational Status of Sample Household Heads

Pastoralists are considered as people whose livelihoods are completely tied with rearing livestock. But in the other way round, there are considerable proportions of pastoralists who are engaged in non-livestock activities especially petty trading and farming. The word “self-employment” in this study implies activities other than herding and farming. The following figure illustrates the occupation of sample household heads.

Figure 4.2 Major Occupations of Sample Household Heads (percentage)



Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

In the above figure, attempts have been made to compare the occupation of beneficiaries and non-beneficiaries with respect to their residence place. The result for Filtu district shows that, 10 percent of the beneficiaries are herders, 17 percent are farmers, and little less than 7 percent are wage laborers where as 58.6 percent of beneficiary sample households are self-employed. The self-employed are those households who are engaged in small business.

As indicated in the figure above, the proportion of non-beneficiary household heads in Filtu district who are involved in small business activities account for 34.5 percent followed by wage earners (31%). Under this category, the proportion of household heads whose occupations are herding and farming are equal and account for 13.8 percent each.

In the case of Dollo Ado district, the self-employed beneficiaries are very significant as compared to other occupations (67.9%) which are followed by herding, farming and civil servants in the equal proportion of 10.7 percent each. When we look at the non-beneficiary households in this district, the highest proportion goes to wage labourers which accounts for 43 percent. The proportions of the civil servant household heads are 17.9% and that of self-employed are 14.3 percent.

Previous studies in Somali region show different result. The major occupation in the rural areas is pastoralism (48.0%) followed by crop production (25.2%). The proportion of rural population who were engaged in trade ranged from 11.2 percent to 20.0 percent (IPS, 2000; Somali Region Population Office, 2003). According to these studies, about 6.9 percent of the rural populations were engaged in trade activities. These differences are resulted from purpose of the studies, the type of population surveyed, and the location of areas surveyed. That is to mean, even though some areas are considered as rural if they are located in the main roads like Filtu and other villages (Haysuftu and Ayinle), the type of occupation concentrates around trade. But in the other areas located outside the main roads and far from towns, the dominant occupation is pastoralism and/or agro-pastoralism. In this case, most of the localities considered under this study are either small towns or located in the main roads. Hence, the type of occupations may

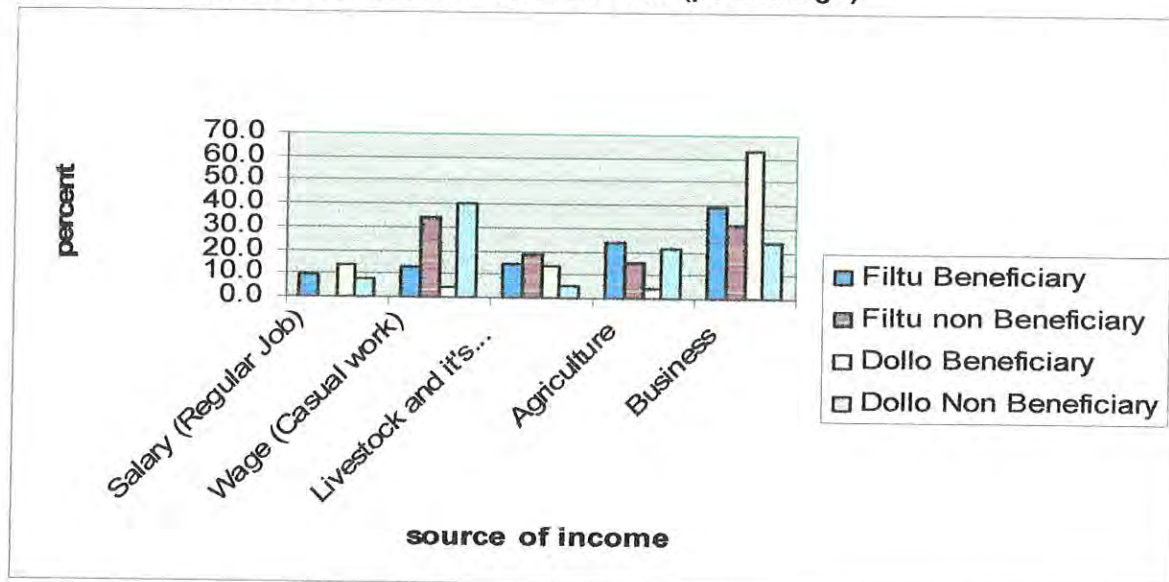
differ from the above stated results. As stated above, most of the microfinance target areas are either rural towns or located along the main roads, which enable households gain some sort of business experiences. Moreover, these households might have different opportunities in participating awareness creations and off-livestock activities including microfinance services.

From the above result, one can argue that the microfinance scheme, to some extent, has created self-employment opportunities in these two districts. The self-employed households are most of the time engaged in petty trading and income generation activities. These petty trading and income generation activities increase the household incomes and enabled their purchasing power and consequently access to food. Furthermore, the income generation schemes provided for these households through microfinance services create asset base for these households.

4.3.6 Major Sources of Household Income

The household income is determined by the sources of income. In this regard, attempt has been made to identify the major sources of incomes of the sample households in terms of beneficiary and non-beneficiary as well as by district. Figure three shows the major sources of income of the household heads.

Figure 4.3 Major Sources of Household Income (percentage)



Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

As clearly revealed in the above figure, small business is the main sources of income (38.9%) for these households who were benefiting from the microfinance scheme followed by farming which accounts for 24 percent in Filtu district. The livestock that is claimed for the main sources of livelihoods for pastoralists account for a little less than 15 percent. On the other hand, wage/casual labor (34%) is the major source of income for non-beneficiary households in Filtu district followed by business and related activities (31%). In these households agriculture and livestock account for 19 and 15 percents respectively.

In Dollo Ado district, 62.8 percent of beneficiary sample households generate their income from petty trading or small business and related activities where as 28 percent of beneficiary families in the same district obtains their income from salary and livestock related products. In contrast, the non-beneficiaries in Dollo district generate their incomes from casual work/daily labor. Furthermore, 24 percent of the non-beneficiary

households are engaged in small business as major sources of income followed by agriculture (21.6%).

In this respect, livestock as sources of income accounts for 5.4 percent. The contribution of livestock as means of household income is minimal. This clearly shows that, the contribution of livestock for family income and food security is diminishing; thus pastoral communities need to look for other options to supplement their subsistence. These options may include petty trading, agro-pastoralism and wage labor among others. In addition to livestock and agriculture, access to microfinance service has opened a wider opportunities for beneficiary households to diversify their incomes by engaging other income generation activities like milk selling, teashops, butchery, trading chat, vegetables and fruits, and similar activities.

Different studies conducted in Somali region (CSA, 2001; IPS, 2000), revealed similar trends. In the rural areas of Somali region, 75.9 percent of household incomes are generated from agriculture, trade, and wages and salaries respectively. On the other hand, in the urban areas trade (45.9%) and wages and salaries (28.8%) are the major sources of household incomes. Since the study areas are the peri urban, the results are mixed. In both districts, self-employment (petty trading) dominates the incomes of sample households.

In field observation of the present research undertaking, people especially women are involved in petty trading. It is known that, significant proportion of incomes generated by women goes to family welfare such as food, child schooling, health and related activities. More importantly, the responsibility of managing household affairs especially those

activities related to family welfare lies on the women's shoulder, so that women members of the household are striving to deliver their responsibilities.

4.3.7 Household Income and Expenditure

In addition to the household sources of income, the amount of income and expenditure determine the household food security. In the similar manner, the household income and expenditure dictates the coping strategies employed during food scarcity. Based on these, data related to household income and expenditure was collected from both beneficiaries and non-beneficiaries for the purpose of comparisons. Household expenditures were classified into food and non- food expenditures. Therefore, table 5.4 shows that the mean monthly income, expenditure on food and non-food items.

Table 4.4 Household monthly incomes, Expenditures on food and non-food items for sample households by district (in birr)

Mean Monthly household income and expenditure	Filtu district		Dollo Ado	
	Beneficiary n=29	Non-beneficiary n=29	Beneficiary n=28	Non-beneficiary n=28
Income	1116	759	1447	794
Standard deviation	857	880	360	601
Minimum	0.00	100	900	60
Maximum	3300	4200	2460	3000
Expenditure on food	637	392	895	516
Standard deviation	409	222	286	333
Minimum	150	70	600	150
Maximum	1800	900	2100	1500
Expenditure on non-food items	243	233	225	173
Standard deviation	190	207	97	78
Minimum	50	30	50	60
Maximum	900	1000	500	400

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

Note, out of 29 beneficiary households in Filtu district there is one household who does not give monthly income and this is denoted by zero income.

In the table 4.4, in Filtu district the mean monthly income of beneficiary households is by far greater than the mean monthly income of non-beneficiary households. There is a wide variation of incomes among the beneficiary households in Filtu district, which shows income inequality among these groups of households. The mean monthly income for the non-beneficiary households in the same district is 759 birr with the minimum and maximum income ranges from 100-4200 birr respectively.

Similarly, the mean monthly income of beneficiary households in Dollo Ado is 1447 birr where as that of non-beneficiaries is 794 birr. Like Filtu district, the mean monthly income of beneficiary families is largely greater than their counterparts in Dollo Ado district. In this district, the differences in income are more pronounced in the beneficiary households.

The household monthly expenditure on food items is one indicator of household access to food. Furthermore, the amount of expenditure on food indicates the purchasing power of the household in question. In the above table, the mean monthly expenditure of beneficiary families in Filtu district on food items is 637 birr as compared to 392 birr for the non-beneficiary households. In the same district, the minimum monthly expenditure on food items for the beneficiary households is twice greater than those of non-beneficiaries. Those households who are benefiting from the microfinance services in Dollo Ado district have shown better expenditure on food items than non-beneficiaries.

In addition to the monthly incomes and expenditures on food items, monthly expenditures on non-food items is another indicator for the household welfare. The non-

food items in this study include among others, expenditures on health, clothing, education, transport and similar expenditures. Based on these, both beneficiary and non-beneficiary households in Filtu spend more on non- food items than those in Dollo district.

The income and expenditure differences between the two study districts have caused by different reasons. First, Dollo district is more populated than Filtu. These large populations facilitate fast business turn over. Second, Dollo is more urbanized than Filtu, thus most of respondents are engaged in small business. Since Dollo district is located in the borders of Ethiopia, Somalia and Kenya, there are frequent interactions among traders. Thus, there are market facilities across borders especially in the Kenyan side, which help households sell their outputs. Third, there are two rivers in Dollo, which helped small holders engage in irrigated agriculture. The populations in this district are concentrated along the riverbanks and produce cash crops like fruits and vegetables (mango, pawpaw, onion, banana, and apple), which can be easily marketed across the borders.

4.4 Child Education and the Microfinance Services

4.4.1 Children Access to Education

Access to microfinance schemes has an impact on the educational attainment. This means that, the income improved through access to the service enable the poor households educate their children. Even though the type of education and job availability matters, it is believed that the educated people have wider opportunities for access to skilled and semi-skilled jobs. Therefore, they can generate better incomes, which improve their purchasing power and the subsequent food security. Furthermore,

these people are largely absorbed in the different sectors of the economy. Based on these assumptions, an attempt has been made to investigate whether the provision of microfinance services make differences on the child education between beneficiaries and non-beneficiaries in the study areas. Hence, the following table portrays the number of school age children (5-17 years), those currently attending school and those never attended school by sex and district.

Table 4.5 Total numbers of school age children, those currently attending (%), and those never attended school (%) by gender and district

Child education	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
School age boys	71	60	69	59
School age girls	79	40	57	43
Boys attending school (%)	77.5	80	87	78
Girls attending school (%)	73	55	70	58
Boys never attended school (%)	22.5	20	13	22
Girls never attended school (%)	27	45	30	42

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

In the table 4.5, 77.5 percent of boys in the beneficiary households in Filtu district are able to attend school where as 73 percent of girls are currently attending school in the same district. The percentage of boys and girls among the beneficiary households in Filtu district who are currently not attending school accounts for 22.5 and 27 percents respectively. In comparison, 80 percent of boys and 55 percent of girls from the non-beneficiary households are currently attending school. The proportion of boys and girls in the beneficiary families who have never attended school are in the rate of 20 and 45 percents respectively.

In Dollo Ado district, 87 and 70 percents of boys and girls in the beneficiary households are currently attending schools. This shows that, 13 percent of boys and 30 percent of girls in the above mentioned households are never attending schools. Moreover, the level of schooling in the non-beneficiary households was investigated because of the fact that, for the poor households in the rural areas, child education especially girls education depends on the income of the family. To this end, the result shows that 78 percent of boys and 58 percent of girls are currently attending schools. As a result, there are significant proportions of girls who are never attended school in the non-beneficiary households of Dollo Ado district.

In both districts, there are high rates of girls who are never attended school. The low girls' enrollment ratios are observed both in the beneficiary and non-beneficiary households in the two districts. That is, the child education in these areas is skewed towards boys. The low schooling among girls implies that families are using girls' labor for household tasks such as cooking food, fetching water, collecting fire wood, taking and selling milk in the market, washing clothes, cleaning houses and caring for the small

children as well as engaging in the family businesses. These activities are closely related to the short-term food security. Hence one can safely say that, families use girls' labor to maintain household food security in the short run. This is because girls largely supplement the household food security either in the form of income generation or labor contribution.

The important point in this comparison is that, the rates of girls' enrollment in both districts are higher in the beneficiary households. This can be attributed to the provision of microfinance, which subsequently improved the incomes of beneficiary households. Thus it can be argued that, access to microfinance services improve the child education, at least in the primary level, which in turn create a window to participate in the skilled and semi-skilled jobs. But because of the cultural biases against girl's education, there is a need to go beyond access to financial services. There is a need to design strategy aiming at enhancing girl's educational enrollment.

Increased earnings and savings for poor people open up the possibilities of investing on their children's future by educating them. This clearly shows that, those who are beneficiaries to financial services can send their children to school. This result supports the finding of Gebrehiwot (2005) which states that, there are 76 percent of improvements in the children's education of microfinance client households as compared with 72 percent of non-clients. Furthermore, the above finding confirms that of Tsehay and Mengistu (2002) which states that, a minimum of 57.1 percent of rural beneficiaries have sent their children to school.

In addition to these a World Bank study (2005) on the incidence of poverty and education indicated that, there is high likelihood that less educated people to become

poor and to be food insecure. It also clearly indicated that, the more household head is educated, the less likely to be his household is food insecure and faced in Poverty. This implies that, educating children can be used as a long-term strategy for insurance during household food insecurity.

4.4.2 Expenditure on Education

Increased income enable the clients not only sending their children to school, it also increase school expenditure. Based on this, an attempt has been made to identify whether there are differences or not between the beneficiaries and non-beneficiaries with regard to current education expenditure per child. The educational expenditures include clothing (school uniform), exercise books and related stationeries, books; school fees or registration fees, etc. The following table portrays the results of the mean and standard deviations of school expenditure.

Table 4.6 Mean and standard deviation of expenditure on education per child per year
(in birr)

Expenditure on education	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Mean	147	126	155	114
Standard deviation	72	52	42	65
Minimum	16	24	100	0.00
Maximum	250	200	250	220

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

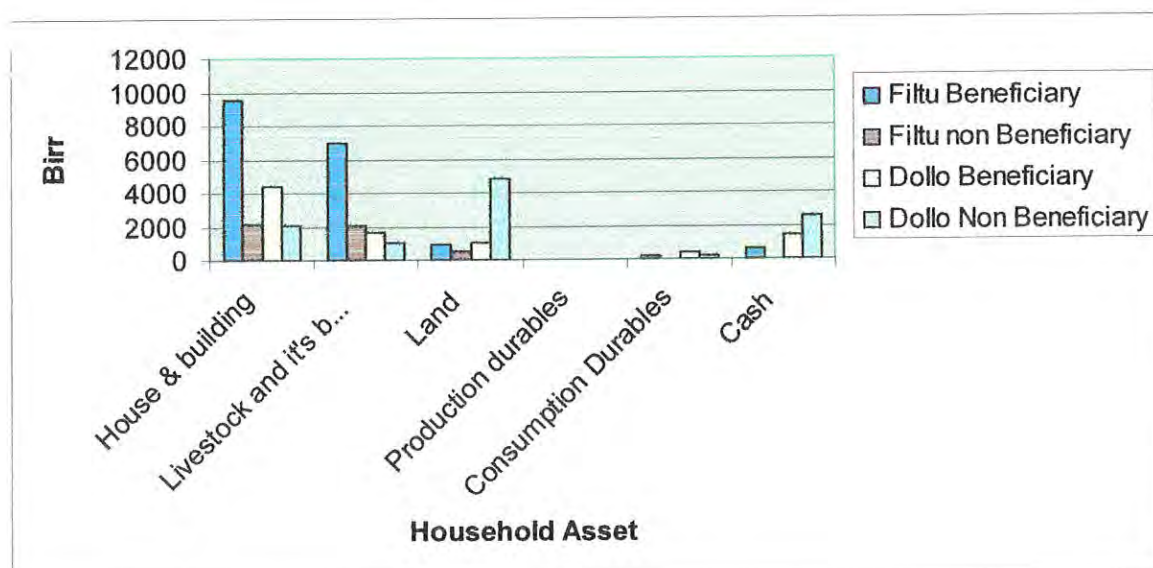
As clearly stipulated in the preceding table, there are differences on educational expenditure in the study areas among the beneficiaries and non-beneficiaries of the microfinance services. The result discloses Filtu district beneficiaries are currently spending higher amount than their counterparts (non-beneficiaries). The maximum amount of expenditure of beneficiaries on education is 250 birr where as it is 200 birr for non beneficiaries.

Like Filtu district, there are differences between beneficiaries and non-beneficiaries in Dollo Ado district on educational expenditures. The beneficiary households in this district spend on average 155 birr per child, but 114 birr for the non-beneficiary households. In this regard, the above result confirms with the findings of Tsehay and Mengistu(2002) which states that, 56.5 percent of rural microfinance clients have experienced high payment in their current school expenditures. Another study conducted in Somali region by Devereux (2006) found that, the estimated cost of sending a child to primary school in Jijiga is 125_175 birr per term. The cost of education per student per year in the study areas reflects similar findings. It is argued that, when the incomes of households increased they tend to invest their money to their children to sustain future food security. This is because of the fact that, educated people have wider opportunities in getting jobs and improve his/her income. The incomes generated raise the purchasing power of income earners, and improve their food security. Furthermore, this indicates that the current investment in the children education is insurance against risks of food shortage in the future.

4.5 Estimated Values of Household Assets

Microfinance schemes are expected to expand and develop the asset base of the poor pastoralists. Moreover, the value of household assets is one indication of wealth and level of income. Based on this, the estimated values of household assets were investigated in this study. In the following figure, the estimated values of house and building, livestock, land, production and consumption durables are depicted.

Figure 4.4 Estimated Values of Household Assets by Beneficiary and Non-beneficiary Households (in birr)



Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

In the above figure, the mean values of houses and buildings for beneficiary households in Filtu district have the highest values. On the average each beneficiary households has 9541 birr with the estimated values in house and building, where as the estimated values of livestock per sample household was 6956 birr. Though land is not private owned in Ethiopia, in the rural areas like Filtu and Dollo Ado districts land especially agricultural lands are informally sold and bought. The value indicated under this study is limited to

the agricultural lands. The value of land in the Filtu district depends on the size, location, and proximity to the settlements. But in Dollo Ado district besides these factors, the value of land is largely depends on whether it is located near the banks of Dawa and Genale rivers.

More importantly, the value of agricultural lands in Dollo Ado district depends on the distance from the main market centre- Mendera town of Kenya. Even though it is beyond the scope of this study, the agricultural land along the dawa riverbank is more expensive than that of Genale River because of the vicinity of Mendera town-the market centre. Thus, the average value of land for the beneficiary households in Filtu district was estimated to be 926 birr. Furthermore, the mean values of production and consumption durables were 17 and 188 birr respectively. The cash, which is the most liquid asset, was 572 birr for Filtu beneficiaries.

In comparison, the average estimated values of household assets among the non-beneficiary households in Filtu were much lower than that of beneficiary sample families in the same district. In this regard, the mean values of house and building, livestock, land for the non-beneficiaries in Filtu were estimated to be 2160, 2033 and 926 birr respectively.

In Dollo Ado district, the average asset values for both the beneficiary and non-beneficiary sample families were assessed and stipulated in the figure above. The result shows that for every beneficiary there is a house and building with a mean value of 4423 birr where as for the non-beneficiary it was 2058 birr. The mean values of livestock for these households were 1596 birr and 979 birr respectively. Besides these, the estimated value of agricultural lands is skewed towards non-beneficiary households in Dollo Ado district.

4.6 Household Savings and its types

4.6.1 Household savings

Savings are defined as the net change in equity between periods. This definition includes changes in the monetary and non-monetary assets such as food, jewelry and other consumption and production durables. Like many rural parts of the country, there are no formal/or semi formal financial institutions in the study areas. Thus, people are traditionally using non-monetary savings. But recently with the introduction of microfinance schemes by non-governmental organizations, some households are believed to start savings especially in monetary savings. The table below illustrates the savings conditions of sample households by district.

Table 4.7 Savings conditions of sample households by district (percentage)

Household savings condition	Filtu district		Dollo Ado district	
	Beneficiary n=29	Non-beneficiary n=29	Beneficiary n=28	Non-beneficiary n=28
Yes	75.8	10.4	100	21.4
No	24.2	89.6	-	78.6
Total	100	100	100	100

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

From the above table, nearly 76 percent of beneficiary households in Filtu district have responded positively for household savings. In the same district about 90 percent of non-beneficiary sample households have negatively responded for the household savings. Despite the type of savings, 100 percent of beneficiary households in Dollo Ado have

savings. Unlike the beneficiaries, 78.6 percent of non-beneficiary households did not have household savings.

4.6.2 Type of savings

Household decisions to hold assets in the form of savings depend on the risk-bearing ability and risk exposure of households. Thus, the table below illustrates the types of savings in the sample households.

Table 4.8 Types of savings in terms of beneficiary and non- beneficiary by district (frequency)

Types of savings	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Monetary	16	1	19	5
Jewelry	5	1	9	1
Grain	1	1	-	-
Total	22	3	28	6

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

Those households who are positively responded for the household savings were further asked the type of their savings. The above table reveals that, out of 22 beneficiaries in the Filtu district 16 of them have monetary savings, while 5 of the respondents have savings in the form of jewellery; where as a single household has saving in the form of grain. From the non-beneficiary sample families there is a single household who has

monetary saving. Similarly, there is only one household who holds saving in the form of grain.

In the other district i.e. Dollo Ado, 19 beneficiary households have used monetary savings. On the other hand, 9 of the beneficiary households have used savings in the form of jewelry. As compared to the beneficiary households, 5 of the non-beneficiary sample households in Dollo Ado district have monetary savings and one household has jewelry saving.

From the above results, there is a significant proportion of savings among beneficiary households in both districts, mostly in the form of money. It is because of the fact that, compulsory savings were introduced among the beneficiary households. The philosophy behind compulsory saving is that, the pastoralists must be taught to save and to make them aware about financial disciplines. The result indicates that, even though there are no financial institutions that are supposed to take deposits and provide loans to pastoral households, beneficiaries are practicing cash savings than non-beneficiaries.

Besides the saving system, the amount of savings is equally important. This is because; low-income households keep monetary and other savings as a precautionary savings. They used this saving as a fall back during distress and food crises. Therefore, the amounts of savings need to be assessed before taking any judgments on the benefit of savings. Thus, table 5.9 shows the amount of monetary savings of sample households.

Table 4.9 Mean, standard deviation, minimum and maximum amount of monetary savings in birr (1999-2004)

Monetary savings/household	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Mean	1318	500	2726	2112
Standard deviation	320	-	2065	1799
Maximum	2050	500	7000	5000
Minimum	600	500	500	60

Source: Primary data, Dollo Ado and Filtu districts -Somali Region,2006

In Filtu district, the mean monetary saving of beneficiary sample households is 1318 birr with standard deviation of 320 birr. The amount of savings for these households ranges from 600_2050 birr. For the non- beneficiary households in this district, the mean monetary saving is birr 500. Since there is a single household who has monetary saving, the minimum and maximum range is all the same.

In Dollo Ado district, the mean monetary saving for beneficiary households is 2726 birr, which is twice higher than that of Filtu district. Furthermore, the amount of savings range from 500-7000birr. On the other hand, the mean savings of non-beneficiary families in the same district is 2112 birr with the standard deviation of 1799 birr. For these households, the ranges of minimum and maximum savings are 60-5000 birr respectively.

Even though, pastoralists are far from the cash economy, in the above case, there are considerable amount of cash savings. The cash savings is more pronounced in Dollo Ado district, both for beneficiary and non- beneficiary households. This cash savings minimize the likelihood of forced sale of livestock among the pastoralists during drought and the subsequent food shortages. In this respect, Tsehay and Mengistu (2002) argued that, most of the clients of micro finance services have experienced improved their saving habits. The amount in saving seems to be higher among the rural clients (83.6%). In the contrary CSA (2001) in its Household Income, Consumption and Expenditure (HICE) survey stated that, Somali region has the lowest records in the household savings relative to other regions in the country and it is 0.70 percent and 0.87 percent for rural and urban households respectively.

From these results one can argue that, despite the absence of formal financial institutions, the saving habit of people is showing improvement. In the meantime, microfinance schemes increased the incomes and savings of beneficiaries. Moreover, it seems feasible to apply this in the areas like Filtu and Dollo Ado districts. This implies that, besides attitudinal changes towards savings, with specialized credit and savings organizations pastoralists can be integrated into the cash economy and beyond livestock, pastoralists can make savings in the financial terms.

4.7 Household Income Diversifications

4.7.1 Household Micro enterprises (petty trade)

Livestock number and its productivity are decreasing from time to time due to the recurrent drought, shrinkages of grazing lands, and the overall environmental degradation. Thus, large numbers of pastoralists are becoming food insecure due to the

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above reasons. The livestock productions need to be supplemented with non-livestock income generating activities that enable the poor to earn additional cash incomes. The profit generated from income generating activities can therefore be used to purchase food for the household consumption. Access to microfinance service is one strategy to adopt non-livestock incomes in the pastoral areas. The micro enterprises/petty trading in the rural areas boost the incomes of households and in turn contribute largely in solving the problems of food insecurity. Under this study, an attempt was made to compare the presence of micro enterprises, current capital, monetary values of fixed assets and monthly incomes between beneficiary and non-beneficiary households with district bases.

Table 4.10 Percent of sample households who own micro enterprise by district

Household own micro enterprises	Filtu district		Dollo Ado district	
	Beneficiary n=29	Non-beneficiary n=29	Beneficiary n=28	Non-beneficiary n=28
Yes	86	38	85.6	25
No	14	62	14.4	75
Total	100	100	100	100

Source: Primary data, Dollo Ado and Filtu districts -Somali Region, 2006

In the preceding table, 86 percent of beneficiary households in Filtu district have responded that they are micro enterprises/small business owners. Among the beneficiaries' small proportions of households, i.e., 14% do not have small businesses. As can be seen in the table 5.10, only 38 percent of non-beneficiary sample households in Filtu district own micro enterprises.

Like Filtu district, a significant proportion (85.6%) of beneficiary households in Dollo Ado district own micro businesses. In the contrary, in the same district about 75 percent of non-beneficiaries did not own household micro businesses. Thus, only 25 percent of these categories have owned such kind of businesses in their households.

Furthermore, an attempt has been made to assess the current capital, monthly incomes, and the values of fixed assets of these micro enterprises. This is because of the fact that, the income generated from these micro enterprises is dependent on the input capital and the business environment of the respective localities. This in turn determines the level of household incomes and food security. This implies that, the incomes earned from the micro enterprise enable the households to increase purchasing powers and access to food items required for healthy life.

Similar study in the Tigray region shows that, most of micro credits are used for activities related to petty trade. This study further indicated that, 34% of clients have reported small business as a source of their household income as compared to only 13 percent of non-clients (Geberehiwot, 2005) but increase in the number of petty traders increase competition and entrepreneurship in local communities. Furthermore, the increased number of petty traders will raise the chance of getting better prices for goods and services, which in turn generates better profit. A portion of profit generated from the petty business can be used for better diet and the remaining can be reinvested in local areas. Thus, the current capital, monthly income, and the monetary values of fixed assets of micro businesses of both beneficiary and non-beneficiary households are portrayed in the table below.

Table 4.11 Average current capitals, monthly income, and mean values of fixed assets by districts

Current Conditions of micro enterprises	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Average current capital	3166	1460	4065	1157
Mean monthly income	1094	1050	1271	755
Mean monetary values of fixed assets	967	369	3028	660

Source: Primary data, Dollo Ado and Filtu districts-Somali Region, 2006

In comparison, the average current capitals of the beneficiary sample households in Filtu district is estimated as birr 3166 where as the amount for non-beneficiary families is twice less than the above stated figure. As opposed to the current capital, there is no much difference in the mean incomes of beneficiary and non-beneficiary sample households in the Filtu district. In the mean time, there is greater variation in the monetary values of fixed enterprise assets between beneficiary and non-beneficiary households in the above-mentioned district.

Similarly, the average current capital of micro enterprises for the beneficiary households in Dollo Ado district is 4065 birr, which is by far greater than the amount for the non-beneficiary households. The mean monthly incomes of these micro enterprises vary across beneficiary and non-beneficiary families. Unlike the current capital, there is no

much difference in the monthly incomes of micro businesses in the beneficiary and non-beneficiary sample households in the same district. Moreover, the average monetary values of micro enterprises' fixed assets in the two households are birr 3028 and 660 respectively.

The above result shows that, even though there are no institutions supporting the business activities in the study areas, the tendency to carry out small businesses and diversify incomes among the pastoralists and agro-pastoralists is promising. It can further argue that, there are opportunities to reduce vulnerabilities which lead to food insecurity by diversifying household incomes with the help of microfinance services. The high engagements of pastoralists in the petty trades also clearly show that, these communities are not only good at livestock husbandry but also good at trade. Thus, providing microfinance services to pastoral communities it can be an entry point for building the household asset bases and reducing vulnerabilities to drought and other shocks which entails food insecurity.

4.7.2 Crop Production

Besides livestock production and micro level businesses, pastoral households are currently engaged in crop production to support their family in food supplies and to smooth consumption. In these areas crop production heavily depends on the rainfall (for Filtu district) and access to lands in the riverbanks and irrigation pumps (for Dollo Ado district). This means that, in Filtu district agro-pastoralists are practicing rain fed agriculture where as small-scale irrigation in Dollo Ado district.

As indicated in the above table, the mean hectare of land for the beneficiary sample households in Filtu district is smaller than that of non-beneficiary households. The standard deviations of farm sizes for beneficiary and non-beneficiary sample households are 1.3 and 2.3 hectares respectively. In this case, the non-beneficiary land holdings are by far greater than the beneficiary households.

The minimum size of farmland among the non-beneficiary is very small which is equivalent to 0.12 hectares. Like Filtu district; the land sizes among non-beneficiaries in Dollo Ado district are larger than that of beneficiary households. Hence, the mean land size is 2.8 hectares and 3.38 hectares for beneficiary and non-beneficiary households respectively. Moreover, the standard deviations of the land size among these groups are 1.1 hectares and 1.7 hectares in the beneficiary and non-beneficiary sample households respectively. For the non-beneficiary households land holding ranges from 2 hectares to 5 hectares which are small as compared to the non-beneficiaries.

According to CSA (2003) in Dollo Ado district, 48 percent of agricultural households occupied a farm size of 0.51 hectares to 2.0 hectares. Furthermore, 33.5 percent of households have a land size of 2.01 ha to 10.0ha. This finding shows that, in these areas and other pastoral areas as well there is no scarcity in agricultural land.

In the pastoral areas where there are no extension services, farm inputs and other facilities, access to agricultural land may not guarantee increased production and the consequent household food security. Furthermore, access to microfinance in this case, may not lead to large size land acquisition. The important thing that may contribute to food security is the way agro-pastoralists produce and the varieties they produce. Moreover, due to the recurrent drought, the quality and quantity of livestock is

diminishing from time to time hence when the pastoral and agro-pastoral households obtain cash either in credit or gift forms they most preferably resort to petty trading rather than restocking. That is why most of the beneficiary households have engaged themselves into petty trading than livestock and farming. On the other hand, the non-beneficiary households have larger land sizes in both districts which imply agricultural land is acquired not only for cultivation but also for pasture during drought. Thus, non-beneficiaries are enclosing lands to generate income by selling pasture to large livestock owners or livestock traders. This is clearly shown by the preceding table that, the land size and the quantity of production are not compatible; hence all farm lands are cultivated. This means that, a portion of land is used for pasture when the demand for the same is high. These kinds of practices are the sources of conflict in the study areas especially along the banks of Dawa and Genale rivers in both districts.

Agro-pastoralists cultivate food crops to minimize the number of livestock they have to sell to buy cereals. In this study, questions concerning the types of varieties of crops grown and the quantity harvested in the last season by the sample households were asked and the responses are portrayed in the following table.

Table 4.13 Types of varieties grown and the mean harvest (in quintals) in the last season by households

Varieties grown	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Maize	19	7	8	7
Vegetables & fruits			5	4
Wheat	5			
Beans	17	4	7	3
Mean harvest	4	7	9	8

Source: Primary data, Dollo Ado and Filtu districts -Somali Region, 2006

Table 4.13 reveals that, maize is the most commonly grown in both districts followed by beans. Vegetables and fruits are grown in Dollo Ado district where as wheat is grown only in Filtu district. As can be seen in the table above, out of 20 beneficiary households who have farm land in Filtu district, 19 of them grew maize, 17 grew beans and only 5 grew wheat in the last season respectively.

In Dollo district almost equal proportion of beneficiaries and non-beneficiaries have grown maize in the last season. In the similar manner, nearly similar proportions of these households have grown beans in the period under consideration.

Generally, the size of land holding and the quantity produced are not related. Dollo district is relatively performed better in the quantity of crops harvested than Filtu in the last season. Most of the agro-pastoralists produce cereals crops for consumption but fruits and vegetables are produced to generate cash incomes. These fruits and

vegetables are produced by ruminant agro-pastoralists because of the availability of water for irrigation and proximities to border markets (in Kenya and Somalia).

The low crop production was attributed to the recurrent drought, inadequate agricultural trainings and inadequate agricultural extension services in the areas. Similar studies in the region shows that, lack of rainfall, lack of fertilizer, lack of agricultural technology and crop pests were the frequently mentioned reasons for the poor production(Devereux, 2006). This study further shows that, one farmer from Doboweyn district that form 1.25 hectares of land harvested a total of 400kg (300g maize and 100kg sorghum). Kejela (2005) found that, the pastoral and agro-pastoral communities of Afar and Somali regions are not getting any agricultural extension package. There is no development agents assigned in communities, no training has been provided for the pastoralists and agro-pastoralists on farming and other pastoral systems.

Besides these reasons, the poor crop production in the region is also attributed to low prices of agricultural products which are created by blanket distribution of food aid. The food aids distributed to households are sold in the market with cheap prices and the local harvest can not compete with these low prices, thus producers are disincentive in producing sufficient amount of food, both for consumption and for sale.

The finding implies that, pastoralists are not dependent on a single source of income rather they tend to diversify their source of incomes by producing both cereal and cash crops. There is a need to enhance technical skills on farming and inputs to improve farm yields which is possible via the provision of credit services to the pastoralists and agro-pastoralists. It also implies that, crop production and livestock can be integrated in such

a way that, crop residue can be used for fodder for livestock which in turn rise livestock productivity and reduce vulnerability to pasture stress during dry seasons.

4.8 Household Food Consumption

4.8.1 Household Expenditure on Food

The household level of income, family size and age and sex composition determines household food consumption. To arrive at the food expenditure per household, the adult equivalent was calculated and the annual food expenditure was converted into per adult equivalent per annum. The table below shows the food expenditure per adult equivalent per year.

Table 4.14 Mean and Percentage Expenditure on Food per Adult Equivalent per Annum by District

Expenditure on food per adult equivalent per annum	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Mean(in birr)	1338	967	1986	1180
Percent of total income	56.7	48.8	62.4	61.8

Source: Primary data, Dollo Ado and Filtu districts, Somali Region, 2006

In the table above, there is greater variation on the food expenditure per adult equivalent between beneficiary and non-beneficiary households in two study districts. The mean expenditure on food per adult equivalent per annum for beneficiary and non-beneficiary

in Filtu district are 1338 birr and 967 birr respectively. Similarly, the mean expenditure on food per adult equivalent per annum for Dollo beneficiary households stood 1986 birr, where as that of non-beneficiaries is 1180 birr.

Like that of income, the expenditure on food per adult equivalent for the beneficiary in both districts is higher than their counterparts. A study conducted by MoFED (2002) on the poverty profile of Ethiopia revealed different results. According to this study, the food expenditure per adult equivalent per annum in the rural Ethiopia in the year 1999/00 was 774 birr. The above stated result is much higher than that of the national rural average expenditure on food per adult equivalent per year.

Moreover, another study conducted in Somali region also revealed that similar results to that of the national average food expenditure. This report stated that, the average amount of expenditure on food, drinks and related items in the rural parts of the region was 633 birr/person per year (IPS, 2000). Furthermore, a study conducted on the impact of microfinance in improving household food security in Tigray region revealed that, 66.67 percent of the households interviewed have responded that there are improvements in their households' food security (Gebrehiwot, 2005).

The higher expenditure on food per adult equivalent results from high household incomes. The research finding implies that, there is low poverty incidence in the study areas which is more pronounced in the microfinance beneficiaries. Hence, introducing microfinance services in the pastoral areas is panacea in reducing food insecurity.

4.8.2 Calorie Consumption

The per capita calorie consumption is one indicator of household members' food security. When food shortage is a common occurrence, the level of calorie intake is an important welfare indicator in countries like Ethiopia. When calorie consumption by a household is adjusted for variations in age, sex and household composition, it clearly reflects the household consumption level. The calorie consumption can be accounted for by converting conventional household sizes into household adult equivalent. Thus, the table below shows the per capita calorie intake, which is adjusted for household size and composition and expressed in the form of adult equivalent per day.

Table 4.15 Percentage Distribution of households by daily adult equivalent calorie intake

Kcal per adult equivalent per day	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Below 1650	10.7	17.8	3.6	17.9
2200	25	53.6	32.1	42.9
2750	21.4	17.9	25	17.9
Above 2750	42.9	10.7	39.3	21.4

Source: Survey data, Dollo Ado and Filtu districts, Somali Region, 2006

As can be seen from the above table, the proportion of sample population who fall in the lowest calorie intake is low for the beneficiary households from both districts. The lowest calorie is indicated by the food poverty line based on 1650Kcal. Households fall in this category are labeled as destitute. In this case, there is almost similar proportion of

destitute households in the non-beneficiary sample households in the two districts, which are 17.8 percent in Filtu, and 17.9 percent in Dollo Ado district.

According to MoFED (2002), there are three categories in determining the household food poverty line. These include the food poverty line based on 1650 Kcal; the food poverty line based on 2750 Kcal (moderate poverty line) and the minimum requirement for subsistence (2200 Kcal). On the bases of these categories, larger proportion of beneficiaries from both districts fall in the above 2750Kcal consumption per adult equivalent per day. In the contrary, the non-beneficiary sample households in both districts fall in the 2200 Kcal which is based on the minimum daily Kcal requirement for subsistence or it indicates the proportion of population on the poverty line. This implies that, 53.6 and 42.9 percents of non-beneficiary households from Filtu and Dollo respectively are on the poverty line as compared to 25 and 32.1 percents for the beneficiary households. This result confirms the finding of Devereux (2006) which states that, Somali region is ranked at top of the list on calorie consumption with an average per person of 2109 kilocalories per day. Taking 2100 Kcal per person per day as a cut-off level of food security, this suggests that the microfinance beneficiary households in both study areas are relatively the most food secure.

As far as the result is concerned, most of the non-beneficiary households are on the poverty line where as larger proportion of beneficiary households is above the poverty line. This clearly shows that the prime objectives of microfinance services are to lift poor people out of abject poverty and it seems that, this program is achieving its intended purpose.

The differences between beneficiary and non-beneficiary households imply that, microfinance beneficiaries are relatively better-off in their household incomes as well as asset diversification which definitely lead to better calorie consumption. More importantly it implies that, since most of the beneficiaries are involved in trade, they could generate better income than non-beneficiaries and these incomes created better purchasing power.

4.9 Household Coping Strategies

4.9.1 Coping Strategies Often Used During Food Stresses

Household food security can be measured through individual/household calorie acquisition, individual intakes, dietary diversity and household coping strategies. Under this study, two measures were emphasized- the individual calorie acquisition and the household coping strategies. The individual calorie intake was treated in the previous section and the household coping strategy will be treated in this section.

Based on this, the most knowledgeable women in the household regarding food preparation and distribution within the household was asked a series of questions to understand how households are responding to food shortages. The questions were focusing on the consumption related coping strategies. The following table portrays the responses of sample households.

Table 4.16 Distribution of Coping Strategies often used During Food Stress by beneficiary and non-beneficiary households (percentage)

Coping strategies	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Household consumed less preferred food	-	6.9%	-	-
Household reduced quantity of food served to men	6.9%	3.5%	-	3.6%
Women reduced own food consumption	10.4%	3.5%	25%	25%
Household reduced quantity of food served to children	6.9%	17.2%	-	7.1%
Members of the household skipped meals	6.9%	20.7%	-	10.7%
Members of the household skipped meals for a whole day	-	3.5%	-	3.6%
Total	31%	55%	25%	50%

Source: Survey data, Dollo Ado and Filtu districts, Somali region, 2006

The above table shows that, 31 percent of sample households in Filtu district have used different coping strategies in the last seven days. In the above category women have reduced their own consumption followed by reducing the quantity of food served to men, children and skipping the meals.

In the contrary, non-beneficiary respondents from Filtu district have used all coping strategies with varying extents. Among these respondents 20.7 percent of the households skipped meals followed by reducing the quantity of food served to children. These households further responded positively for the use of less preferred food. Less preferred food in this context is the types of food that the people do not eat during normal circumstances such as forage/wild foods.

In Dollo Ado district, out of 28 beneficiary households 25 percent have used only one of the coping strategies. In these households women have reduced their own food consumption. In comparison, out of 28 non-beneficiary households in Dollo Ado district half of them have used all types of coping strategies except eating less preferred food. With respect to this, 25 percent of households' women have reduced their own food consumption followed by skipping meals.

The comparisons made between beneficiary and non-beneficiary households shows that, the beneficiary households have used less coping strategies relative to non-beneficiary households. This result is in line with the previous study on the impact of Microfinance services on the poor households and the report stated that, about 65.5 percent of rural borrowers have enjoyed diet improvement (Tsehay and Mengistu, 2002). The study further indicated that, small proportion of client households have experienced a season of hunger during which the household is forced to eat less food. Another study between the clients and non-clients of microfinance services in Tigray region found that, 54 and 49 percents of client households experienced improved quality and quantity of food consumptions relative to 38 and 32 percents of non-clients households (Gebrehiwot, 2005).

This implies that, access to microfinance services enable households to reduce the magnitude of coping strategies such as consuming less preferred food (a sort of diversifying consumption to supplement diets when face food scarcity which is conducted, where wild food, wild animals and opportunities for fishing are available), reducing food served to different household members as well as skipping meals for days. This is because households diversify assets; increase incomes and smooth consumption during food stress. Thus, clients are less vulnerable to shocks than non-clients. Another conclusion which can be drawn from this is clients have developed a sort of social networks than non-clients that enabled them easily borrow cash/commodities from relatives, shops and from each other.

4.9.2 Severity of Coping Strategies

Drought and other calamities, which cause food shortages, affect different households differently. Moreover, as we have seen in the section above, different households use different mechanisms to cope with distress (see annex 5). Under the table in the annex 5, large proportions of beneficiaries in the two districts fall in number 9 which means they were not applied any strategies to over come the food shortages (they responded for 'never'). This implies that these households were not food insecure and their coping mechanisms were minimal. Furthermore, the distribution of beneficiary households along the indices of coping strategies decreases. When we compare the beneficiaries in the two districts, Dollo district is more food secure than Filtu district (89.3%and 51.7% respectively). Despite access to the microfinance services, relatively large numbers of households in Filtu district were applied different coping strategies which indicate their

level of food insecurity. In the table 4.15 we have seen that, 10.7 percent of these households were below the poverty line and another 25 percent were on the poverty line.

In the non-beneficiary households from the study areas, 17.2 and 28.6 percent of respondents from Filtu and Dollo respectively were not applied any one of the coping strategies. The majority of respondents have applied different strategies intensively and the problem was relatively severe in Filtu than in Dollo. This result confirms the findings of Assefa (2005) in that, 60 percent of sample clients reported that they have affected by the last drought and they have adopted different coping mechanisms. Different related studies on the same subject matter revealed that, 80 percent of clients and 87 percent of non-clients have cut down their number of meals during food shortages (Gebrehiwot, 2005).

From the above result, it can be argued that both beneficiaries and non-beneficiaries of microfinance services are not equally affected during food shortages. From the above findings, the non-clients are severely affected by the droughts and the subsequent food shortages. This is because of the fact that non-beneficiaries were constrained by financial problems. From this result it seems plausible to conclude that, provision of financial services changes the lives of the poor credit recipients.

Chapter 5. Summary of Findings, Conclusion and Recommendations

5.1 Summary of Findings

The objective of the study is to investigate whether there are differences in income sources, household incomes, child education, expenditure on education, asset values, food expenditures, food consumption and coping strategies between microfinance beneficiaries and non-beneficiaries or not. Based on these, the research findings are summarized as follows:

- The major sources of household incomes for the microfinance beneficiaries, in both districts, are small businesses. In Dollo Ádo district the result is more pronounced i.e.62.8% of the respondents generate income from small business. In Filtu district 38.9% of beneficiaries are obtaining their income from small businesses as major sources, where as the sources of incomes for the non-beneficiaries is wage labor,
- The beneficiary households in both districts have more income than non-beneficiaries. For instance, in Dollo Ado district the income gap between the two categories of households is 653 birr (mean monthly income) while, the gap in Filtu is 97 birr,
- Microfinance beneficiaries are better in educating their children especially girls. In Dollo Ado district 30% of girls at school age from beneficiary households are not currently attending school as compared to 42% of non-beneficiary households. In Filtu district 27% and 45% of girls from beneficiary and non-beneficiary households respectively are not attending school. Moreover, beneficiary households in both districts are spending more money on children education than non-beneficiaries. The result showed that, Dollo beneficiaries are currently spending on average 155 birr per student annually as

compared to 114 birr for non-beneficiaries. Similarly, in Filtu district beneficiary households on average spend 147 birr per student and this figure is higher than the non-beneficiaries by 21 birr per student,

- The estimated values of household assets are more pronounced in the beneficiaries. In the two districts, there are larger values for house and building and livestock. In Filtu the values of house and building is much higher than their counter parts (9541 birr and 2160 birr respectively). The trend is similar in Dollo Ado district,
- In Dollo district, out of 28 beneficiaries 19 households have monetary savings, while 5 for the non-beneficiary households. This shows that there is significant gap in the household savings. On top of this, out of 29 beneficiary household in Filtu district 16 have monetary savings, where as only 1 household out of 29 non-beneficiaries have monetary saving. With regard to mean amount of saving per household, the result revealed 2726 birr for Dollo beneficiaries and 1318 birr for Filtu beneficiary households,
- 86% of beneficiary households in both districts have micro enterprise as compared to 25% and 38% for Dollo and Filtu districts respectively. The mean monthly incomes from these micro enterprises are more pronounced in the beneficiary households especially in Dollo Ado district (1271 birr and 1050 birr for beneficiaries in Dollo and Filtu respectively). In comparison, the mean monthly incomes of micro enterprise for non-beneficiaries in these districts amounts 755 birr for Dollo and 1094 birr for Filtu district,
- The findings for household food expenditure per adult equivalent per annum indicated that, there are significant differences among the beneficiary and non-beneficiary households in both districts. For Dollo district, on the average beneficiary households spent 1986 birr, where as non-beneficiary households spent 1180 birr per annum. For

Filtu district, on average the adult equivalent food expenditure per annum in the beneficiary households is 1338 birr which is 371 birr higher than that of non-beneficiary households,

- The adult equivalent calorie consumption demonstrated that, 3.6% of beneficiary households from Dollo Ado district consumed low calorie (below 1650 Kilo calorie) which is far below the poverty line (2200Kcal). For the non-beneficiary in the same district the rate is 17.9%. And for Filtu district, 10.7% and 17.8% from beneficiary and non-beneficiary households respectively have consumed low calorie. Moreover, 39.3% of adult members from Dollo beneficiary and 42.9% of adults from Filtu beneficiary households have consumed above 2750 kilocalories. These findings indicated that, beneficiaries are more food secure than non-beneficiaries, and
- From the above findings we can deduce that beneficiary households in both districts have used less coping strategies during food shortages. This implies that, only 25% of beneficiary households in Dollo Ado have employed coping mechanism during food shortage, while 50% of non-beneficiaries have used different coping strategies during this period. In Filtu district 31% of beneficiaries and 55% of non-beneficiaries have used different coping mechanisms. These findings showed that, the utilization of coping mechanisms are more in non-beneficiary households which further indicate that the food shortage is more prevalent in the non-beneficiary households.

5.2 Conclusion

Access to microfinance services improve and diversify the income of beneficiary households. The comparisons made between the incomes of beneficiary and non-beneficiary households show that there is a significant difference among beneficiaries.

Furthermore, the assessment made on the income diversification strategies of the two categories demonstrate that, the beneficiary households have been more engaged in non-livestock activities than non beneficiaries, especially in the petty trading sector which include butcheries, tea shops, vegetables and fruits among others. This means that, small business is the main source of incomes (38% and 62% in Filtu and Dollo Ado districts respectively) for the beneficiary households.

Lack of microfinance services could be a constraining factor to income diversification, which can be an important risk management strategy for pastoral households. Furthermore, microfinance services are used to spread risks when catastrophe situations occur. Such circumstances may not affect the diverse income generation activities of households equally and severely.

Traditionally, there is a heavy reliance on livestock among pastoralists, but from the findings of this study one understands that access to microfinance services can result in reduced vulnerability and minimized food insecurity. The comparisons on expenditure on food and non-food items for the sampled households show that, the beneficiaries are by far better than their counterparts.

This preliminary study in the two Somali districts, Dollo Ado and Filtu, demonstrate that, microfinance has enabled households to educate their children. This also indicates that, improved incomes will encourage pastoral families to invest in the education of their children. This is clearly seen by the fact that, the expenditure on education has been significantly high among the beneficiaries.

The other important conclusion that can be drawn from this study (see chapter 4) is that, improving access to microfinance services to the grass root pastoral communities can increase the opportunities of household savings. This is rectified by the fact that, a greater number of beneficiary households have monetary savings relative to their counterparts. In addition to the greater number of households who have savings, the amounts of savings are also more pronounced in the beneficiary households. Thus, the lesson to be drawn in this regard is that, there is positive attitude for saving and credit systems among the studied pastoral and agro-pastoral communities.

As to the role of micro finance services on food security, beneficiary households have shown better calorie consumption. Moreover, most of the non-beneficiary households fall on the poverty line in terms of both income and calorie consumption. The improved level of income and the subsequent expenditure on food items led to better calorie consumption among the beneficiary households in the study areas. Thus, a significant number of beneficiary households fall above the required minimum Kilo calorie per day (2200Kcal).

Finally, the coping strategies used during drought and food scarcity circumstances are less in the beneficiary households relative to non-beneficiary households. It can be safely concluded that, access to microfinance services bring about better risk management by enabling households in spreading risks. In the meantime, the findings of this study strongly indicate that the severity of coping mechanisms during food scarcity decrease among the beneficiaries. Therefore, despite the small size of loans, access to microfinance services can be used to improve household income and the subsequent

food security status among pastoral and agro-pastoral Somali communities in particular and the regional state in general.

5. 3 Recommendations

Based on the preceding conclusion, the following recommendations are made:

- ✓ The current small size loans (200 Birr to 400Birr/household initial loan) should be increased to make sure that the turn over will be enlarged,
- ✓ The current coverage of beneficiary households (311 households in four districts) should be increased to reach as many poor pastoralists as possible,
- ✓ In order to be served by the microfinance services, prior needs of pastoralists should be identified and met. The fact that pastoralist households' needs vary seasonally, the micro finance delivery should be reconciled with these seasonal variations,
- ✓ Microfinance service delivery should be flexible in terms of repayment periods and frequency of repayment in such a way that during catastrophe circumstances (drought, conflict, etc) repayments should be postponed to the next wet season,
- ✓ There is a need to diversify collaterals that includes group guarantee, livestock size, and clan/community based collateral systems. In Somali society, clan serves as the most cohesive type of securities (social, economic, etc). In this society, there is a traditional collective responsibility for damages or losses caused by clan members. Therefore, the credit delivery system needs to be fit into this system. In other words, traditional clan leaders can take the responsibilities for loan repayments (collateral) because individuals are highly abide by the customary or clan laws,
- ✓ The credit facilities provided to the needy pastoralists should charge low interest rates during the initial implementation of the scheme. After the pastoralists

understand the benefits of microfinance services, there is a need to charge market interest rates,

- ✓ Different income generation activities should be designed for different areas based on their local contexts. For instance, fodder production, fruits and vegetables production, shoat fattening and trading, dairy milk, zero grazing schemes and other petty trading activities can be emphasized in Dollo Ado district where as activities related to livestock trading, natural gums and similar activities should be focused in Filtu district, and
- ✓ Finally, participatory research is required to gain adequate understanding of the pastoralists' and agro-pastoralists' economies, cash management behavior, risk management strategies and indigenous credit systems to further complement the microfinance services.

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Annex 1. Structured Questionnaire for beneficiary and non-beneficiary Households

I. General Information

1.1 District _____

1.2 Kebele/Village _____

1.3 Name of the respondent _____

1.4 Sex of household head

1. Male _____

2. Female _____

1.5 Age of household head _____

1.6 Marital Status of household head

1. Married _____

2. Single _____

3. Divorced _____

4. Widowed _____

5. Separated _____

1.7 What is the size of household members in terms of gender?

1. Male _____

2. Female _____

3. Total _____

1.8 What are the compositions of household members in terms of age?

1. Adult (18 years and above) _____

2. Children (below 18 years) _____

1.9 What is the educational status of the household head?

1. Not read and write _____

2. Only read and write _____
3. Completed primary school _____
4. Completed secondary school _____
5. Completed Certificate _____
6. Completed Diploma _____
7. Completed First Degree _____
8. Above First Degree _____

1.10 What is the current occupational status of household head?

1. Herding _____
2. Farming _____
3. Wage laborer _____
4. Self-employed (run micro enterprise) _____
5. Civil servant _____
6. Unemployed _____
7. Student _____
8. Other specify _____

II. Household income and Expenditures

2.1 What are the major sources of your household income?

1. Salary (regular job) _____
2. Wage (casual work) _____
3. Livestock and it's by products _____
4. Agriculture _____
5. Business _____
6. Other (specify) _____

2.2 What is the total monthly income of the household? _____

2.3 What is your average household monthly expenditure on food? Birr

2.4 What is your average household monthly expenditure on non-food items? Birr

III. Child Education

3.1 How many children in your household are at school age? (5 __ 17 years)?

1. Male _____

2. Female _____

3. Total _____

3.2 How many of these children are currently attending school?

1. Male _____

2. Female _____

3. Total _____

3.3 How many of these children have never attended school?

1. Male _____

2. Female _____

3. Total _____

3.4 What is the highest grade level (number of years) that any of your children has completed? _____

3.5 Currently how much Ethiopian Birr per student you have spent for school?

IV. Household Asset Base

4.1 What are the estimated values of your household assets in Birr? In terms of:

1. House and buildings _____
2. Livestock _____
3. Land _____
4. Production durables _____
5. Consumption durables _____
6. Cash _____

V. Household Savings

5.1 Do you have savings?

1. Yes _____
2. No _____

5.2 If yes in Q5.1, what type of savings do you have?

1. Monetary saving _____
2. Jewelry saving _____
3. Grain saving _____
4. Other specify _____

5.3 If you have monetary savings, how much is your savings in birr? _____

VI. Household Enterprise

6.1 Does your household have micro enterprise?

1. Yes _____
2. No _____

6.2 If yes in Q6.1, what is the current capital of your household enterprise? Birr _____

6.3 What is the monetary value of fixed assets of your household micro enterprise?

Birr _____

6.4 What is the monthly income of your micro enterprise? Birr _____

VII. Household Food Production

7.1 Does your household have a plot of land for farming?

1. Yes _____

2. No _____

7.2 If yes in Q8.1, what is the average size of your farm land? In ha _____

7.3 What type of varieties did you grew in the last season?

1. Maize _____

2. Sorghum _____

3. Vegetables and fruits _____

4. Wheat _____

5. Beans _____

6. Other (specify) _____

7.4 What was the total harvest in quintals from the household farm? _____

VIII. Household Food Consumption and Coping Strategies

8.1 What is the food consumption in this household in the last seven days? (Pertaining to the quantity of foods prepared for consumption)

Food	Quantity	Unit
Maize		
Meat		
Milk		
Rice		
Pasta		
Wheat		
Bread		
Egg		
Fruits		
Beans		
Sorghum		
Vegetables		
Sugar		
Tea		
Other specify		

8.2 Food consumption in the last seven days;

8.2a. has the household consumed less preferred food?

1. Never _____
2. Rarely (only once) _____
3. From time to time (2 or 3 times) _____
4. Often (5 or more times) _____

8.2b. Have you reduced the quantity of food served in this household?

1. Never _____
2. Rarely _____
3. From time to time _____
4. Often _____

8.2c. Have you reduced your own consumption of food?

1. Never _____
2. Rarely _____
3. From time to time _____
4. Often _____

8.2d. Have you reduced the quantity of food served to children in this household?

1. Never _____
2. Rarely _____
3. From time to time _____
4. Often _____

8.2e. Have members of this household skipped meals?

1. Never _____
2. Rarely _____
3. From time to time _____
4. Often _____

8.2f. Have members of this household skipped meals for a whole day?

1. Never _____
2. Rarely _____
3. From time to time _____
4. Often _____

Annex 2. Non-structured Questions for the experts

1. Name of the expert _____
2. Position _____
3. Qualification _____
4. When was this microfinance program started? _____
5. What were the major objectives of the program?

6. What were the main targets of the program?

7. How the credit was provided?

8. What was the credit size in different credit cycles?

9. What was the eligibility criteria used to select the target groups?

10. Who are your clients?

11. Which group among the poor do the microfinance program reach?

12. What are the natures of risks confronting poor clients?

13. How do microfinance services improve target groups capacity in maintaining household food security and protect against risks?

14. What sort of supports other than microfinance services do provide to the clients?

15. What is the importance of forming groups in microfinance clients?

16. How do you facilitate fund disbursements?

17. How do you facilitate credit repayment?

18. How do you collect savings?

19. What mechanisms do you use to deal with service charge intended to cover the transaction costs?

20. How do you maintain the sustainability of the program?

Annex. 3 Energy content per 100 grams of edible portions, selected foods

<u>Food</u>	<u>Kilo calories</u>
1. Maize, meal	341
2. Rice, milled	333
3. Sugar	400
4. Beans, dried	320
5. Egg, hen	140
6. Milk cow, whole	79
7. Goat, moderately fat	171
8. Poultry	138
9. Butter from cow's milk	699
10. Ghee	884
11. Onion	48
12. Potato	114
13. Tomato	46
14. Wheat flour	346
15. Sorghum, whole grain	355
16. Banana	116
17. Apple	61
18. Lemon	36
19. Orange	53
20. Mango	63
21. Melon, water	23
22. Papaya	39
23. Pineapple	57
24. Vegetables	900
25. Fish fresh water	95
26. Tea leaves	40
27. Coffee	56

Source: Computed from Plat B.S, 1962

**Annex. 4 Adult Equivalence Scale or weight for calculating Calorie Requirements
by Age and Gender**

<u>Age groups (Years)</u>	<u>Male</u>	<u>Female</u>
0-2	0.40	0.40
3-4	0.48	0.48
5-6	0.56	0.56
7-8	0.64	0.64
9-10	0.76	0.76
11-12	0.80	0.88
13-14	1.00	1.00
15-18	1.20	1.00
19-59	1.00	0.88
+60	0.88	0.72

After obtaining the above result, we multiply it by the average assigned for number of adults in the household (see below).

<u>Number of adults</u>	<u>Average</u>
1	1.0
2	0.946
3	0.897
4	0.851
5	0.807
6	0.778
7	0.757
8	0.741
9	0.729
10	0.719

Source: World Bank, 1993

Annex 5. Severity of Households Responses on the Coping Strategies

A simple way of calculating severity is weighting of 1 to the use of strategies such as eating less preferred food (table 4.16) and reducing portion sizes served to men, children, and women, a weight of 2 to skipping meals and weight of 3 to skipping eating all day. This means, the six questions asked on the coping strategies have four responses, each item was responded by the most knowledgeable women in the household on the preparation and distribution of meals for one week. Every previous question has four responses to be answered (never, rarely, from time to time or 3 to 4 times and often or more than 5 times).

Table 4.17 Percentage distribution of respondents on the severity of coping strategies

Severity of coping strategies	Filtu district		Dollo Ado district	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
9	15(51.7%)	5(17.2%)	25(89.3%)	8(28.6%)
10	2(6.8%)	1(3.5%)	-	-
11	1(3.5%)	2(6.8%)	3(10.7%)	3(10.7%)
12	-	2(6.8%)	-	-
13	1(3.5%)	3(10.4%)	-	3(10.7%)
14	2(6.8%)	1(3.5%)	-	-
15	3(10.4%)	2(6.8%)	-	4(14.3%)
16	2(6.8%)	-	-	2(7.1%)
17	-	1(3.5%)	-	1(3.6%)
18	-	1(3.5%)	-	3(10.7%)
19	1(3.5%)	3(10.4%)	-	-
20	-	-	-	1(3.6%)
22	-	1(3.5%)	-	-
23	-	4(13.8%)	-	-
24	1(3.5%)	1(3.5%)	-	-
25	-	-	-	3(10.7%)
26	1(3.5%)	2(6.8%)	-	-

Source: Primary data, Dollo Ado and Filtu districts -Somali Region, 2006

Note: Figures in the table represents the severity of coping mechanisms and the severity increases with the increase of numbers except the first figure where no coping mechanism is applied.

Declaration

This thesis is my original work, it has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.



Nur Abdi Mohammed, 2006

This thesis is submitted for examination with my approval as an advisor of the candidate.



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