Livelihood Diversification in Borana Pastoral Communities of Ethiopia- Prospects and Challenges

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Abstract

This paper analyzes the livelihood of the Borana pastoral communities of Southern Oromiya in Ethiopia. The study employed Participatory Rural Appraisal and survey methods. Stakeholders' consultations were carried out at community, district, and regional levels.

The study shows that livestock mobility would continue to ensure high productivity due to changing environment, change water and feed sources, better pasture supply, etc. However, mobility is curtailed by combination of factors such as population growth and settlement in remote grazing areas, existence of claims by different ethnic groups on rangelands, the impartial impact of drought, increasing settlement to get social services, and the declining number of cattle holding per household.

In both pastoral and agro-pastoral communities, the contribution of livestock and livestock products to the household's income is the highest for the rich and smallest for the poor owing to the size of livestock they hold. The destitute households have no livestock. Yet the number of poor households is increasing due to drought. The livelihood of the pastoralists diversified into crop production, petty trades, wage, remittance, firewood and charcoal production, and incense collection.

The study revealed that the agro-pastoralists are poorer than the pure pastoral communities indicating that farming has been adopted to cope with food insecurity caused by declining livestock herd. But the income discrepancy between the social groups is significantly high. The rich could generate four folds of the income the poor earns.

Finally, the researchers recommended that the need for mobility in the use of range resources in order to cope with the ecosystem vulnerability should be understood by the federal and regional governments. Appropriate land use planning for appropriate use of rangeland and delimiting cropland from rangeland is an essential intervention in a participatory manner.

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1. Background of the Study

The study was conducted in Dire District of Borana zone in Oromiya region in Ethiopia in year 2005. The study was commissioned by the Pastoral Community Development Project, which is instituted under the Ministry of Federal Affairs.

The development objective of the study was to inform the policy makers, donors, and development practitioners on areas and strategies of improving sustainable livelihoods of the pastoral communities in Ethiopia and reducing their vulnerability to disasters.

The research approach took account of stakeholders and development partners in the pastoral areas in a participatory manner. The participatory social analysis used in this study will be instrumental in the future to properly design and implement interventions for sustainable development.

Participatory research methodologies such as Participatory Rural Appraisal (PRA), Participatory Community Dialogue (PCD), and household survey were applied using standard data collection tools. Participatory tools such as focus groups discussions, semi-structured interviews, mobility mapping, proportionate pilling, ranking and scoring, observations, key informants interview, participatory community dialogue, and woreda and regional-level conferences were used. Different social groups such as women, elderly persons, adult and youth pastoralists, minority groups, traditional and religious leaders, and Kebele administrations participated in the research. Moreover, household survey was conducted to collect quantitative information in the pastoral communities. Besides, limited household survey was conducted in order to complement the information obtained through participatory methods.

2. Methodology and Processes

2.1 Study Area and the Community

The study was conducted in Dire *Woreda*, Borena Zone of the Oromia Regional State. *Dire Woreda* is located at about 665 KM south of Addis Ababa. *Dire Woreda* has 31 *Kebele* Administrations (one town and 30 rural *Kebele*s). It has population of over 142,000 people. *Dire Woreda* is categorized as lowland. The major means of livelihood of the people are pastoralism and crop production. Livestock husbandry contributes the lion's share to the livelihood of the people. Crop production is recently introduced means of living in the study *Woreda* and expanding in all pastoral communities in Oromia. The role of other means of livelihood such as trade is also growing in the pastoral areas.

Three communities were selected from 31 communities for the study. These were *Haralo, Dhasi*, and *Gollolcha*. Communities in *Haralo* are practicing both livestock and crop production. The rich households are mainly depending on livestock while the poor households depend mainly on crop production. On the other hand, the communities in *Dhasi* and *Gololcha* rely more on livestock husbandry than crop production. Crop production in both communities is a recent phenomenon. Official classification of the communities, say by the Woreda development Committee, puts *Dhasi* and *Gololcha* as pure pastoralists although crop production is gaining importance in these communities, too.

2.2 Participatory Methodologies

The participatory methodologies used in the study include Focus Group Discussions (FGD), Semi-Structured Interview, case studies, mobility mapping, wealth ranking, ranking and scoring, proportionate pilling, Harvard Framework of Gender Analysis, Venn-diagram, and community dialogue. The process of undertaking the study was recorded by video and digital cameras.

Focus group discussions using semi-structured interviews were held with four social groups namely, elders and traditional leaders, women, youth and adult pastoralists, and *Kebele* administrations in each community. Case studies were also conducted with minority groups, urban pastoralists, and some selected pastoralists. Mobility mapping was used to understand the pastoralists' movement within and outside of their community. Wealth ranking was used to identify wealth classes among the communities. Proportionate pilling method was used in order to determine the

proportions of various factors from the total cases. It was used in gender division of labour, household economy, income and expenditures, wealth classes, etc. Daily routine calendar was used to assess the gender division of labour. Harvard Frameworks such as activity profile and access to and control over resources and benefits were used to analyse gender relations. Venn -diagram was used in order to identify institutions in the communities. Community dialogue (conference) was used as a means of creating awareness on pastoral community development issues and existing gender relations.

Finally, digital documentation of the whole process was made using video and digital camera. The *Woreda* level consultation workshop was organized to create awareness of the process of the study in a wider area and give the study a wider perspective. During the *Woreda* level consultation workshop, the consulting team also introduced mechanisms of preparation of action plans.

A regional conference was organized based on the results of the study in Dire Woreda. Representatives from Oromia Regional Offices, Oromia Pastoral Area Development Commission, regional PCDP, NGOs and pastoral Woreda representatives participated in the workshop. The Oromia region PCDP staff and Oromia Pastoral Area Development Commission participated in the organization and facilitation of the regional conference. They also participated in the workshop, which included group work on thematic issues relevant for generating socio-cultural systems and indigenous institutions, gender relations, social differentiations and policy perceptions of pastoral communities in different Woredas.

The conference contributed a lot to identifying uncovered issues relevant for the study in different pastoral areas of Oromia. The process also helped to create awareness about the problems of pastoral communities, the roles of indigenous institutions, gender issues, socio-economic problems of women and pastoral development interventions in general and PCDP in particular.

2.3 Household Survey

Besides, household survey was conducted in the three sample communities. A total of 92 households were interviewed from the three communities. Household survey questionnaire was administered for various wealth groups, female-headed households, and husband and wife of the male-headed households. The sample distribution shows that 34% of female-headed households and 39% poor households were covered.

3. Land Tenure

Land in the pastoral area of Oromia is classified into rangeland, cropland, forestland and water resource areas. The rangeland of the pastoral communities belongs to the clan. There are two categories of rangelands in the community. Open graining area is most commonly accessible to all members of the community and other mobile communities. The second category of rangeland is the so called "*Kalo*" means reserved rangeland, which is managed at *Reera* level in Borana. The reserve is often fenced putting a confined area of land out of free grazing so that some pasture would be available during the dry season. It is also made available to calves, oxen, lactating animals, and weak animals which cannot go for *fora*[2]. Access to the reserve is discussed and decided by *Jarsa Reera* (the community elders), and only few animals are allowed to graze at a time so that the reserve is not depleted.

Crop farming is expanding in pastoral areas of Oromia. It is recently introduced in the pastoral communities of Borana. The farmland is locally called *Obru*. A community member could request the *Kebele* Administration to get a plot of land for crop production. Based on the request of an individual, the *Kebele* administration consults *Abba Olla- t*raditional village leader. Currently, local government administrations started playing role in limiting the expansion of cropland and resolving conflicts associated with cropland expansion. The kebele administration in consultation with the *Jarsa Reera* permits cultivation of a given plot for crop farming. The *Jarsa Reera* checks if the intended cultivation would affect grazing area, reserve pastureland, routes to grazing areas and water points and passes a no objection to the community/*Kebele* administration.

The farmland could be inherited to sons. In most agro-pastoral areas, land transaction exists. However, as the land in the pastoral community is fragile, continuous ploughing for a longer period of time is not feasible. Due to this one can use the plot for one or two seasons. As long as the first person abandons the plot, other persons could request the local administration and traditional leaders to use the land without the permission of the former user of the same plot. This is because the land belongs to the clan (the community) and the *Abba Olla* has the authority to relocate the land for another purpose.

Some years back, anybody could go and start faming without asking the *Abba Olla* or *Kebele* administration. However, recently, due to population pressure and high demand for cropland, the process of acquiring land for crop farming is administered by the *Abba Olla* and *Kebele* administrations.

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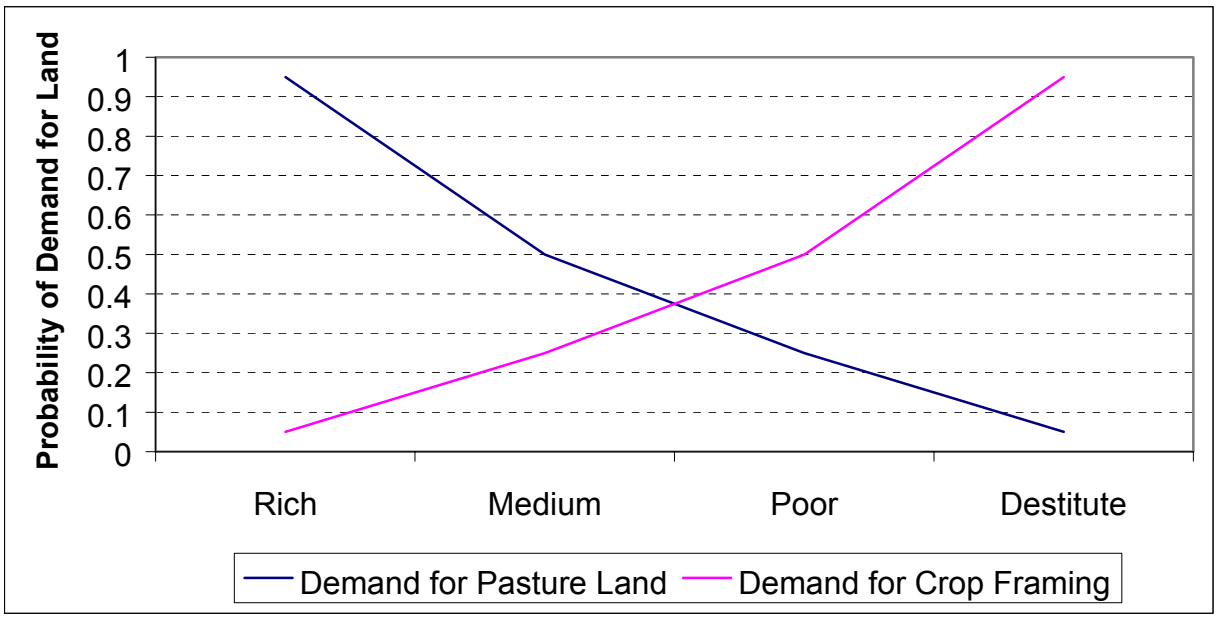
[2] *Fora is a local expression for mobility of livestock with a limited number of pastoralists to search for water and pasture for limited period of time.*

Land renting in most of the pastoral communities is not yet started. This is mainly because of the fact that the land is used for livestock grazing. This type of land use is basically communal type and no one claims it as a private property. On the other hand, crop production has a risk of failure due to shortage of rainfall in the pastoral communities. Hence, receiving land on contract form for crop production is not a feasible business. As a result, the land contracting policy of the regional government seems not feasible in the pastoral areas of Oromia.

On the other hand, the pastoral communities do not have information on the land certification policy of the regional government. However, according to the pastoral communities, land certification of the cropland could be feasible whereas, the land certification of the rangeland is not possible. This is because the rangeland belongs to the clan. The land certification will lead to privatization of the land, which is not feasible in the pastoral communities. Privately owning the land would restrict livestock mobility and creates pressure on the rangeland and hence affects the pastoral livelihood system. As a result, the policy of landholding certification as it is applied in the non-pastoral areas cannot be applied on the rangelands.

According to the information obtained from key informants, there is divergence in needs over plots of land for crop production and for livestock husbandry (Fig. 1).

Figure 1: Relationships between the Demand for Pasture and Crop Production among Wealth Groups in Borana Pastoral Area



Source: Based on discussions with Borana Pastoralists (2005)

The rich households who own large size of livestock require larger area of pasture. On the other hand, the poor and the destitute households require plots of land for crop

production. The later started crop production on wet lands where such plots are conducive both for livestock and crop production. There is negative relationship between the two wealth classes on land use system in the rural pastoral area (Figure1). It was also found out that people residing near towns are putting larger areas under cultivation and these people were often not pastoralists.

Cropland is expanding in the studied pastoral communities. It was recognized that the community members perceive cropland as a resource under the disposal of the head of the pastoral household, often men. Expansion of cropland by intruding into pasture areas has been considered as threat to livestock production. Apparently, it is the productive land, which is put under cultivation reducing pasture production. Yet, due to the opportunities crop production provides to the households in terms of employment, income generation, food supply, etc., several pastoralists have started tilling land. The survey results shows that about 50% of those who have land own less than one hectare while the average holding is two hectares. A bout 75% of them have less than two hectares while only 2% have five hectare, which is maximum size reported in the survey.

As shown on Figure 1, the controversial view on expansion of cropland is a matter of equity. The rich who have large herd size wishes to have larger rangeland size to feed the livestock. On the other hand, the poor who in most cases lost their animals due to drought would like to increase their income portfolio by expanding cropland. Some other members provide economic and ecological reasons of refuting the expansion of crop farming in the pastoral areas. They argue that crop production is a risky undertaking in the pastoral area due to recurrent rainfall. Compared to livestock production, crop production is more vulnerable to environmental risk. According to the Dire w*oreda* conference participants, the probability of good crop harvest is two to three times in eight years whereas livestock may suffer from drought once in eight years. With proper management of the animals, a cow can produce 4-5 calves during this period.

Cultivation of cropland is a means used to put land under private holding as far as the individual tiller belongs to the same community. When he leaves the community, it becomes communal property. Another critical issue in this regard is an attempt to expand boundaries by fencing the plot beyond the cropland to hold pasture reserves privately. Some communities have already started taking action to limit such an expansion and protect common interest of the communities.

Both at community, w*oreda* and regional conferences, it was indicated that cropland ownership could be certified to the household tilling the plot. Moreover, there was a consensus to follow appropriate land use planning for each community so that crop farming can be delineated from pastureland. This approach would reduce the contradiction between crop and livestock production and minimize the danger of ecological hazard since the pastoral areas are already environmentally fragile. It is also indicated that in areas where irrigation is feasible, e.g. in Fantale area, crop

production should be augmented by irrigation. Any such intervention should, however, be participatory including the pastoralists.

4. Rangeland and Natural Resources Management

Despite the recurrent drought in the area, the communities perceive that the livestock population increased over the past few years. On top of this, the declining rangeland productivity reduced the carrying capacity. Policies needed for enhancing rangeland management would be successful if they are based on the indigenous knowledge of the community.

The traditional rangeland management system involves classification of the grazing area into open grazing areas and reserve pasture areas (*kalo*). The classification helps as means of rationing feed for animals that should not be trekked to a far distance or used as a means of minimizing risk of feed shortage during dry season. The area is said to be fenced implying that it is not available to livestock for grazing unless permitted by *Jarsa Reera*. The large free grazing pastureland is often overgrazed due to large number of livestock in the area. According to the survey result conducted in the Dire *woreda*, 98% of the respondents recognize that rangeland productivity is poor. They have indicated different reasons for the worsening situation (Table 1).

Table 1: Proportion of Respondents indicating Causes of Decline in Rangeland Productivity (%)

Reasons for poor productivity of rangeland	Percent of respondents
Declining traditional rang management system	27
Increased livestock population	48
Bad climatic factors including soil erosion	25
Total	100

Source: Household survey in Dire woreda of Borana (April 2005)

Another important rangeland management practiced by the community was bush clearing and burning. The community recognizes the importance of tree species for medicine, shelter, income generations (such as incense and *Gum arabic*), conservation of soils, etc. In communities such as *Dhasi*, forest products, mainly incense, is collected and sold by men and women pastoralists. But the thorny bushes destroy grasses and affect the pastoral livelihood. The community attributes the vast encroachment of bush to the rangeland to the banning of bush burning during the *Derg* regime. With meager implements/equipments and vast coverage of the bush, it has been a challenge to control the bush encroachment. Besides improving rangeland productivity, bush burning was used as a means of livestock pest management. As a result of banning of bush burning, ticks infestation increased. This led to increased incidence of mastitis. It has been indicated that the rate of milking cows with four functional teats is about 40%. The remaining proportion of cows has one to three

functional teats. As a result of mastitis and reduced rangeland productivity, livestock productivity in terms of milk yield drastically declined.

The communities indicated that bush burning is catalyzed by the grass underneath of the bushes, which is not available today. As a result, the communities perceive that bush burning would not be effective as it stands now. On the other hand, they are not ready to commit loss of grasses by burning the existing *kalo* (reserves) and areas where there is pasture due to the fact that the livestock rely on this pasture and there is no sufficient reserve to feed the animals until the burned part rejuvenates.

Another critical challenge on rangeland productivity is expansion of termites. The conference participants discussed on the issues of how to improve rangeland productivity. The consensus builds on the knowledge of proper rangeland management that reduces degradation and increases plants growth during certain period of the year. Accordingly, delineation of the rangeland into *bona* (winter) and *ganna* (summer) rangeland areas was suggested. This classification is applicable in areas with bimodal rainfall pattern such as Borana. Such a land use plan enables vegetation growth using the precipitation of the alternate seasons. Application of this suggestion together with the proper land use planning to integrate crop and livestock production would be essential for improvement of the livelihood of the pastoral community of in Oromia.

5. Community - Livestock Mobility

Herd mobility is the main strategy used by pastoralists to manage risk and use the range resources communally and efficiently. Mobility takes two forms in the pastoral system. The first one is mobility of the satellite herds called *Godaansa Fooraa* and the other type is called *Godaansa Warraguda.* The movement of camel away from the semi-permanent residential areas in Fental is done by young boys. In fact, camel herd are more mobile than the cattle or shots.

i. *Regular Mobility (Godaansa Fooraa)*

Regular mobility is the most common type of mobility in which certain family members move with their livestock from their permanent place to other neighboring communities or *Woreda* to search for pasture and water. In areas where traditional wells are available, shortage of pasture is more critical reason for the regular mobility.

During the regular mobility, the *Ollas* send a team called *aburu,* often men, to identify locations suitable for mobility in terms of availability of pasture and water, the carrying capacity of the rangeland- including estimated duration of stay if the livestock is moved to the place, absence of livestock diseases in the area, the willingness of the hosting community, etc. Based on the feedback of the *aburu*, decisions are taken on the direction of mobility, what types of animals and who will move with the animals. The division of the animals will be based on the indigenous knowledge of the

community. It considers the capacity of the animals to travel the anticipated distance, the available resource at homestead, the animals more importantly needed at the semi-permanent settlement either for their power or to provide milk for the people. Accordingly milking animals will be distributed between the two places based on the number of people who depend on them and how many milking animals are available.

Most of the time *forra* movement takes place during rainy season to lowland areas where there are no permanent sources of water. After exploiting the pasture and floodwater in the new area, they either change the place to other places or go back to permanent water sources. This shows that duration of stay at a given place depends on the length of rainy season, particularly in areas like Borana where the place they use as fallback areas are devoid of any permanent water sources. Opportunistic grazing is the strategy they use.

At *forra* area, there is division of labor among the people who move with the animals. The young boys go for herding, while the adult men work on construction of *kraals*, watering the animals and other labor intensive work related to herding. The elders, who usually commute between semi-permanent homestead and *forra* will take care of the health of the animal, negotiate with the host community to settle down herders and the animals. Women construct huts, cook food and undertake all the household activities.

Children, women and aged persons remain behind. Among the agro-pastoral groups there is a new development that considers labor allocation for both herding and farming. Those people who do not have enough labor will depend on others. Someone who remains at home will take care of the farming activities for both households, while the other person will take care of the herding activities at *forra*.

According to Borana elders, mobility of herd and the whole family is compatible with a pure pastoral production system. However, some Borana started cultivation. At the same time, they started enrolling their children in the few schools available. Furthermore, there are few social services such as human and livestock clinics that are not mobile. The solution for this was movement of part of the herds with few family members as discussed above.

The participants of group discussions disclosed that herd mobility is declining through time. They have given different reasons for the decline in the distance satellite herds' move from the semi-permanent settlement in search of pasture. These include land annexation, population growth and settlement, ethnic conflict, cultivation, absence of water in the remote *forra* areas, and the declining trend of Borana customary laws that forces the excess herds to move.

With the above constraints on the mobility, and absence of a viable alternative production system that can fit to the ecology of pastoral system, the crises that might affect the system could be serious.

ii. *Drought Year Mobility (Godaansa Warraguda)*

The second form of mobility is the movement of the family and whole herds that occurs when there is acute drought or conflict. This type of mobility is called *Godaansa Warraguda.* This type of mobility follows rainfall or movement to permanent water sources, the nine *Tulla* (*tulla salgan)* in Borana area. According to people who participated in the SSI, *Tulla* areas are protected from cultivation, and the pasture can accommodate many herds for quite some times without any irreversible environmental change.

The pastoralists were asked to give their views on the general prospect of herd mobility. They unanimously agree that in any case herd mobility continues as water and grazing cannot be found at a given place throughout a year. Mobility reduces overgrazing and degradation. Other important reason is that animals require changes of places to gain weight, conceive, and grow properly. Movement to lowland areas is important for this purpose.

iii. Effects of Mobility

The major purpose of mobility of the pastoral communities with their livestock is to save lives of the livestock from death that could have occurred due to drought. In most of the cases, the pastoral communities get success in achieving this objective. However, negative effects could also occur as a result of mobility. These are:

- Mobility of the community and their livestock to the hosting community creates great pressure on resources such as grazing areas and water. Host communities are affected negatively due to the competition over resources.
- Environmental degradation could occur when there is over population of livestock in one place.
- Diseases such as Foot and Mouth Disease (FMD) could be transmitted from the mobile livestock to the host community livestock or vice versa.
- Mobility could also lead to abandoning of farmland. This happens when one stays away for three to four months from the semi-permanent place, his farmland could be abandoned. This could bring shortage of food for the family.
- Mobility has expenses in preparation of food in two places for mobile family member and for those staying at home.
- High livestock death during mobility could occur.
- Ethnic conflict occurs usually between the Borana and Guji, between Oromo and Somali or Afar people over resources that often claimed several lives.
- Nutritional imbalance as milking cows move away due to shortage of pasture. This often negatively affects the children and women who remain in the semi-permanent area.

As discussed above mobility of livestock also have effect on the host communities. The survey result in Borana also confirms that conflict over resources, competition for

resources, and hence natural resources degradation as well as disease transmission between animals are the major consequences of mobility (Table 2).

Table 2: Effect of Mobility on the Host Community

Type of Effect	Percent of respondents
Conflict over resources	6
Competition on grass and water	49
Livestock disease transmitted	14
Natural resources degradation	29
Supplied livestock and livestock products	2
Total	100

Source: Household survey in Dire Woreda (April 2005)

6. Marketing of Livestock and Livestock Products

In Borana pastoral area, livestock and livestock products are marketed at *Dubluk* and *Mega* markets. Friday and Saturday are the two market days at *Dubluk* and Mega, respectively. Livestock prices have increased over the past years although there are price fluctuations. This price improvement is attributed to promotion of the export of live animals to the Middle East countries. Livestock export system has been facilitated by the government and private exporters started purchasing livestock from the two market centers.

The woreda towns form the major market centers for the pastoral communities. In Dire woreda for instance, livestock markets are located at *Dubluq* (69 km), *Mega* (70 km) from *Dhasi* community. Moreover, women in *Dhasi* community transport milk to *Moyale* for sale. Milk attracts better price at export route of Moyale. When the quantity of milk produced is small as it is the case during dry seasons, women collect milk through contribution and sell it in *Moyale*. This is an informal association of women in which they contribute a fixed amount of milk in reciprocity so that they increase the volume of milk transported and increase the income per trip, owning to the long distance to *Moyale* market. Although there is shortage of milk, even for consumption, during dry seasons, the supply is sufficiently large during rainy season. This considerably reduces the demand for milk. Hence, there is a strong need for introduction of milk processing facilities such as milk processing machines starting from milk churner. Similar situations hold in other pastoral woredas of Oromia.

With increased drought, market is needed not only for sales of livestock and livestock products but also for exchange of goods at profit. For instance, *Gololcha* community is one of the most drought affected communities during 1999/2000 as a result of which the number of livestock of the community declined by more than 50% and the proportion of the poor increased considerably. These people need to engage in different income generation activities. However, there is no market in the vicinity. They get marketing service at *Dubluq* and Mega markets, located at more than 60 and 40

km respectively. In the pace of increased market integration in the pastoral areas, increased proximity and frequency of markets would be essential. Due to the long distance to market places, sales of livestock products particularly milk takes place among the pastoral communities. In most cases, however, milk is given to neighbors freely.

It has been indicated that generally there is lack of market for most of the livestock and livestock products. Recently, there has been market created for young bulls and male goats in the big markets such as *Mega* and *Dubluq*. This has created incentives for pastoralists to buy some animals, keep them for some months and sell them to make profit. For other kinds of livestock, there is no market and the pastoralists look for better markets even crossing the national border. There is no market for hides and skin. Some communities indicated that they use the hides and skin at home due to lack of market whereas some reported to sell a piece for Birr 2.00.

Although the government considers the livestock marketing to Kenya as illegal, the pastoralists have preference to exporting livestock through *Moyale* to Kenya as they earn better prices from such markets. However, such an export is not formally allowed. The pastoralists feel that they would prefer to use the Kenyan market for their livestock after fulfilling custom regulations. The terms of trade for livestock and other commodities are not in favor of the pastoral communities.

However, the pastoral communities reported that there is positive change in prices of livestock during the last decade due to the promotion of livestock marketing to the Middle East countries. In Borana, livestock traders come to *Mega* and *Dubluk* markets to purchase and transport goats to export markets. It has been indicated that prices of animals increased and in some instances doubled. It was indicated that an ox worth of Birr 600-700 before 10 years worth Birr 1000 to 1500 today. Moreover, the price of a goat increased from about Birr 40 to 100. This being a positive change for pastoralists, the prices of consumer goods and food items also increased. For instance, maize price increased from about Birr 60 to 150 per quintal. The agro-pastoralists view the increase in grain prices as an advantage whereas the pastoralists who depend on market for purchase of food consider the change as negative. The impact of the change on gender relation is not direct. As such there is no change in the control of income from sales of animals and grain. The impact can only be assessed within the household context in that the change in prices affects the income of the household and this has influence on the nutrition and productive roles played by women.

7. Livelihood of the Pastoral Communities

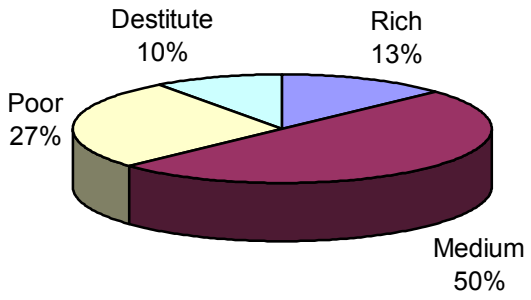
7.1 Well-being Classification

In the pastoral communities, the households have been classified into rich, medium, poor, and destitute. According to the key informants at Dhasi community, about 13

percent of the households are rich, 50 percent medium, 27 percent poor, 10 percent are destitute. The magnitude of poverty in the pastoral area is high. In some communities, about 60% of the households are identified as poor.

The wealth class differentiations are not based on minority and majority concepts, which have influence through access to resources. However, the minority group (the Watta) is often poor and depends on hunting for their livelihood. They also live on contributions rendered based on certain events. The Watta group is small in number and feels like subordinate in the Borana community. Dawe people in Bale pastoral area are also minority with limited social interaction with others. Another minority group is the Tumtuu, people whose livelihood is based on blacksmith, using traditional tools to make implements for use by the community. The number of this group of community is very small and they are often poor. From gender point of view, female-headed households depend on the boy child or the support of the clan of their husband for survival. Handcrafts are practiced by women often for home use.

Figure 2: Proportions of Households by Wealth Class at Dhasi Pastoral Community



Source: Field Work in Dire Woreda (April 2005)

Compared to the wealth classes in the agro pastoral community of *Haralo*, the proportion of the households falling in the medium wealth category in pastoral community is high, i.e. the largest share within the pastoral community. It is the destitute which forms the largest proportion in the agro pastoral communities. This clearly indicates that those involved in farming are relatively poorer than the pure pastoralists.

The wealth status is determined by sources of income and major occupations, which determine the livelihood of the household. Livestock production is the most important source of income. Hence, the number of cattle, camels, goats or sheep is a good indicator of the wealth status in the community. Moreover, the nature of occupation such as trading and the income generated through such an employment is also an indicator of wealth group. The rich devotes only limited time for trading although the

business of relatively larger capital used for buying and selling livestock for making profit. The poor and the destitute, on the other hand, have limited capital to run business. As a result, they involve in brokering rather than direct trading. Wage labor involvement is an indicator of poorness in the study community. Indicators of wealth classes in the *Gololcha* community are given in Table 3.

The number of female-headed households is comparatively high in the pastoral areas. In *Gololcha* community, for instance, the proportion of female-headed households reaches about 30%. There was argument that female-headship is not a criteria for wealth ranking since the status of those female-headed households would be similar to what the husbands had, as far as she has a children. But it is apparent that many of the female-headed households are poor or destitute.

Table 3: Wealth Indicators for *Gololcha* Community Pastoralists (Average Values)

Indicators	**Rich**	**Medium**	**Poor**	**Destitute**
Number of cattle	50	28	8	2
Number of camel	10	5	2	1
Number of mule	1			
Number of donkey	5	3	1	
Number of chicken				4
Number of goats/sheep	30	20	10	5
Participation in trading and wage work (% of HH)	25	30	50	75
Income from trading (Birr per year)	2600	1560	520	260
Value of animas sold (Birr)	7250	5950	750	0
No. of cows milked	15	6	2	1
Value of milk (Birr)	2520	1008	336	168
Total livestock income per year (Birr)	9770	6958	1086	168
Percent of HH in the community	10	25	35	30

Source: Own Fieldwork in Dire Woreda (April 2005)

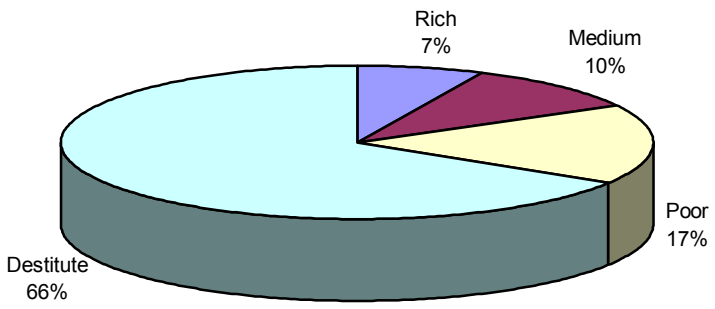
On the other hand, in *Dhasi* pastoral community, the rich households own up to 150 cattle, 2 camels, 40 goats, 2 donkeys, a mule and 2 hectare of farmland whereas, the medium households own up to 80 cattle, a camel, 20 goats, a donkey, and 0.5 hectare of farmland. The poor households own up to 12 cattle, 5 goats, 2 chicken, and 0.25 hectare of farmland. The destitute households own a goat and up to 5 chicken.

Camels are introduced in the production system and only 20% of the households own them. Increasing the number of camels is a response of the pastoral communities to changing ecology and feed availability. It seems logical to rely more on browsing animals as the rangeland is often covered by bushes and trees and make economic use of them. Since bush clearing is expensive in terms of capital and labour requirement, combined efforts of bush control and livestock species adapted to the ecology would help improving the livelihood of the community.

In Haralo agro-pastoral community, over two-third of the households are classified as destitute. This was due to the high number of people who settled during the Derge

régime. From the total of 714 households, about seven percent are considered as rich, 10 percent medium, 17 percent poor, and 66 percent as destitute. The rich households in *Haralo* agro pastoral community own up to 40 cattle, 50 goats, 10 camels, 5 donkeys, a mule, and 5 hectare of farmland. The medium households in the same community own up to ten cattle, four goats, a camel, two donkeys, and three hectare of farmland. The poor households own less than five cattle, and ten goats. The destitute households own no livestock. The proportion of households in terms wealth groups is shown on Figure 3.

Figure 3: Proportions of Households by Wealth Groups (%)



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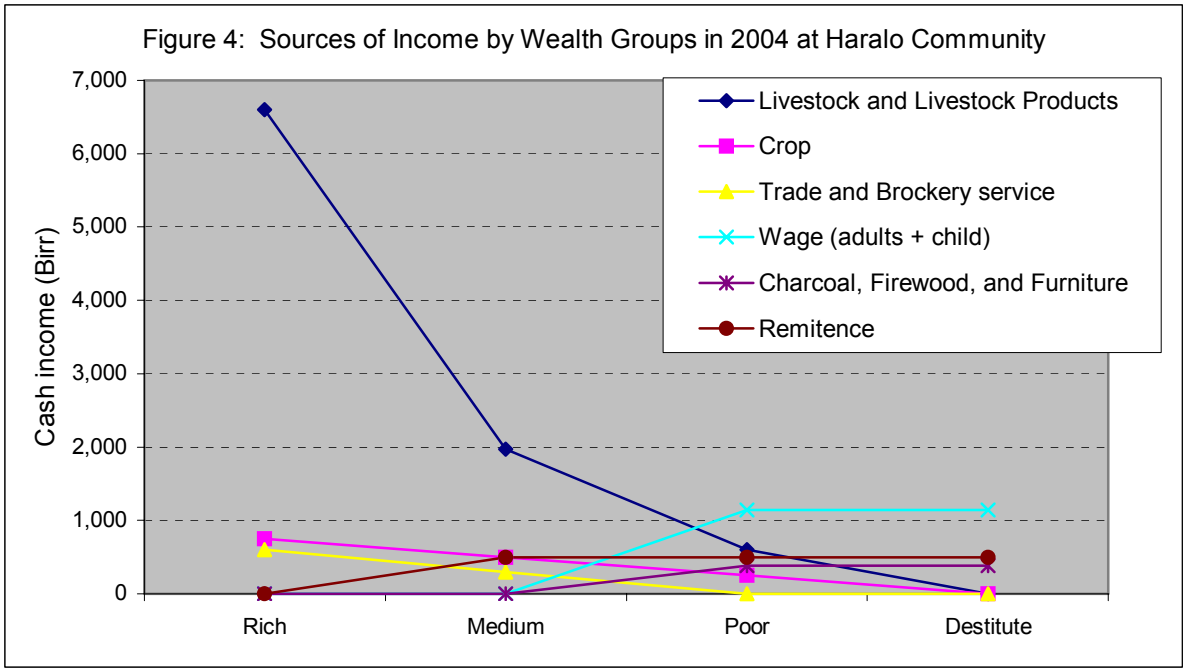
Source: PRA in Dire woreda (April 2005)

7.2 Sources of Income

The households' income during the year 2004 was estimated for the four major wealth groups of *Haralo* agro pastoral community. The major sources of income for the rich and the medium households are livestock and livestock products, crop, and trade and broker service. According to the key informants during the focus group discussions, the rich households could earn about Birr 3,600 from sales of milk and butter, Birr 2,500 from sales of bulls, and about Birr 500 from sales of goats in the year 2004. The amount of income earned from the same sources by the medium households declined. The trend shows a declining slope between the rich and destitute wealth groups. The medium households earned Birr 720, 1000, and 250 from sales of milk, bulls, and goats respectively. The poor households earned Birr 500 from sales of bull and Birr 100 from sales of goats in year 2004 (Figure 4). Those generating small income from livestock depend on wage, crop production, remittance, collecting and selling of firewood and charcoal, and relief food.



Source: Fieldwork in Dire Woreda (April 2005)

Women have control over the income generated from sales of milk and butter. Women also involve in the collection and sales of firewood and charcoal, deciding on who to dispose the income for purchases of consumables. Men control and decide on the largest portion of the income since men sell high value livestock and trade incomes.

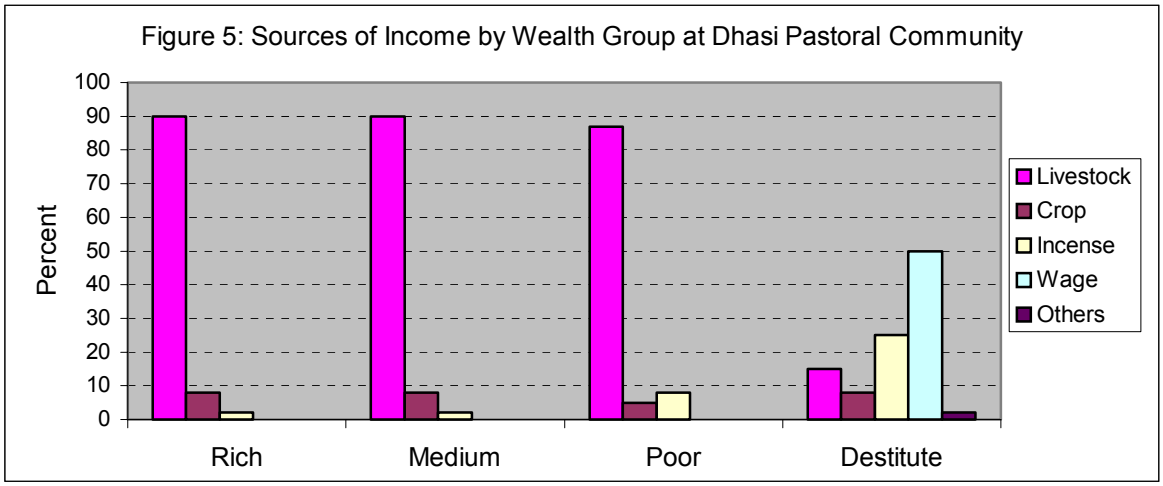
The annual total cash income of the rich household is estimated at Birr 7,800 which is equivalent to USD 900 per household. The total annual cash income of the destitute households is estimated to be Birr 2,020 or USD 233 per household per year. Assuming the average family size of six, the per capita income could be estimated at USD 150 for rich and USD 38.88 for destitute households. The figures give a rough indication of their income situations due to suspicion that the values of own products consumed are not adequately captured.

7.2.1 Livestock and Livestock Products

The major sources of income for the *Dhasi* pastoral communities are livestock and livestock products, crop production, gum and incense, and wage. As shown clearly on Figure 5, the contribution of livestock reaches as high as 90 percent in the annual income of the rich, medium, and the poor in the *Dhasi* community.

This shows that livestock husbandry plays the greatest role in the livelihood across the wealth groups in the pastoral communities. However, livestock and livestock products' contribution to the livelihood of the destitute households is insignificant. Only about 15

percent of the annual income of the destitute households is generated from livestock and livestock products.



Source: Fieldwork in Dire Woreda (April 2005)

Similarly, in *Gololcha* pastoral community, livestock production is a major means of livelihood of the pastoral communities. Accordingly, it generates about 63 and 57% of the means of livelihood for the rich and medium groups, respectively. The contribution of the livestock production system declines, as the household gets poorer. It constitutes only 33% of the poor household's income and 15% of that of the destitute (Table 4).

Table 4: Means of Livelihood at *Gololcha* Pastoral Community (Percent)

Sources of Income	**Rich**	**Medium**	**Poor**	**Destitute**
Livestock production	63	57	33	15
Crop production	14	13	11	5
Trading/business	23	26	26	24
Remittance	0	4	0	0
Wage employment	0	0	30	47
Social support	0	0	0	9
Total	100	100	100	100

Source: Fieldwork in Dire Woreda (April 2005)

The destitute also relies on social support from the community as well as food aid from the governments and NGOs. This accounts for 9% of the means of earning for these people. Income from remittance refers to the income the households receive from relatives working elsewhere including Moyale and Kenya. Both women and young men involve in working outside the community to generate income. It was also indicated that this type of activities were also a response to the poverty caused by drought.

The income discrepancy between the social groups is significantly high. As shown in Table 5, the rich could generate four folds of income the poor could earn. The amount

of income generated by the destitute is below Birr 1500. Taking an average family size of 6 persons per household, the annual income per person would be Birr 550 for the poor and Birr 230 for the destitute groups. Since the poor and the destitute account for 65% of the community, the magnitude of poverty in this community is considerable.

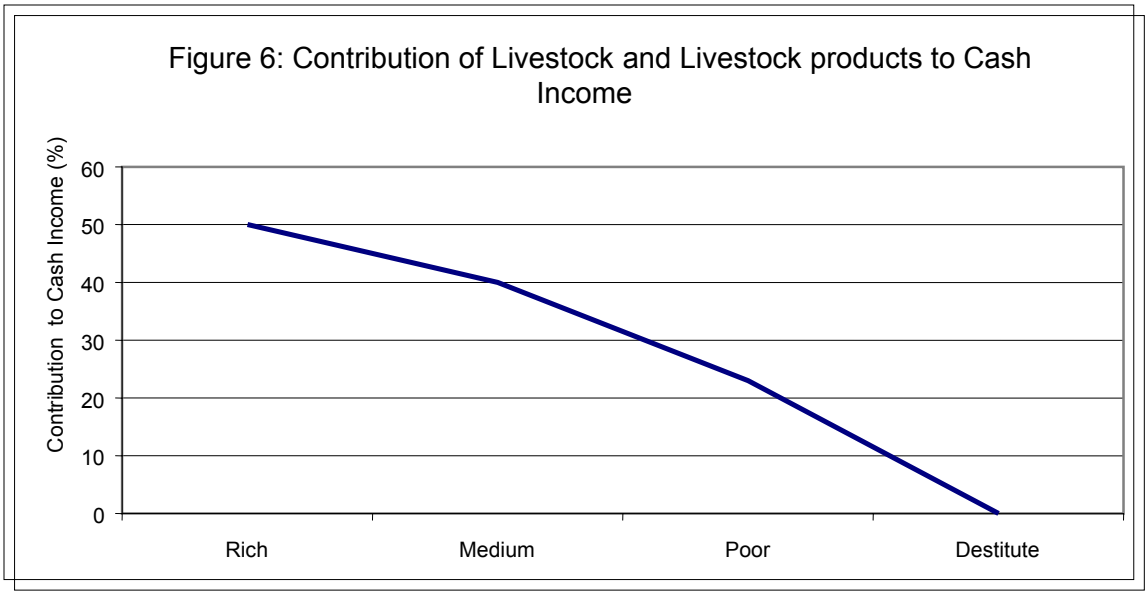
Table 5: Estimated Incomes from Different Sources (Birr)

Sources of Income	Rich	Medium	Poor	Destitute
Livestock production	9770	6950	1100	200
Crop production	2180	1600	350	65
Trading/business	3640	3200	850	325
Remittance	0	500	0	0
Wage	0	0	1000	650
Social support	0	0	0	130
Total household income	15590	12250	3300	1370

Source: Fieldwork in Dire Woreda (April 2005)

Income generation through production of livestock and crop is under the control of men. Women also contribute to household income through involvement in productive activities such as livestock and crop production, trading and wage work.

The major source of income for the rich households is livestock. Cash income sources for the rich households include sales of livestock (cattle, goats, and camels), milk, and butter. Income generated from such sources account for about 50 percent the income of the rich households. On the other hand, the sources of cash income for the medium households include sales of livestock and livestock products such as cattle, goats, milk, and rent of camel and donkey. About 40 percent of the cash income of the medium households is generated from livestock and livestock products. The poor households earn about 23 percent of cash from sales of heifers and milk. But, the destitute households who accounted for about two-third of the households generate no cash income from livestock and livestock products. Generally, the contribution of livestock and livestock products to the household's income declines from the rich to the poor and becomes zero for the destitute households (Figure 6).



Source: Fieldwork in Dire Woreda (April 2005)

7.2.2 Crop Production

Land put under cultivation has been considerably increasing over the last ten years. The major cause of increase in the cropland is increased poverty due to death of animals. Those who could not generate sufficient income from livestock production opted for crop farming. Gaining experience from them, fellow community members started farming, leading into increased dependence on crop farming for food supply and income generation. The practice of crop production is a reaction to climatic hazard as a coping strategy. The rainfall period is short and the soil is fragile. Intruding cropland into pastoral area is also jeopardizing livestock production. Crop production is expanding on plain areas with higher moisture content and more of fertile soils. In deed this is the most productive rangeland for the livestock production. This is the major cause for strong competition between livestock and crop production.

Crop production is getting momentum as a means of income diversification. Besides, pastoral communities are involving in trading of live animals, “fattening” animals for sale, brokerage, and petty trading. These practices have increased over the last ten years. Apparently, depending just on livestock production is no more the sole means of livelihood for the pastoral community. Women’s participation in this type of business activities is increasing. The income earned in this practice improved decision making power of women. Income is also raised by involving in urban businesses such as running small business including retailing and renting houses for different purposes.

Income from crop production in the pastoral communities is less than fifteen percent of the annual income of the rich, the medium, and the poor households. Income from crop production is unreliable due to the unreliability of rainfall in the pastoral

communities. The key informants reported that crop production fails in three of four years i.e. probability of 75% due to shortage of rainfall.

Although, rainfall is unreliable, rain fed crops such as maize and haricot beans are produced in the agro pastoral communities. At *Haralo* community, crop production for the rich and medium households account for about one-third of the total households' income in a year. Similarly, crop production contributes about 27 percent to the poor and destitute households' income per year. It was learned that the contribution of crop to the households' income in agro pastoral communities is below one-third.

Women and girls have considerable contribution in crop farming and hence generate income for the household. Women, however, control only the proportion of grain consumed at home and sometimes sell small portion of the harvest, with husband's consent.

7.2.3 Trade and Commission Service

Involvement in trade of different types is the second most important means of livelihood for the rich and medium groups of the community. It is also the third most important source of income of the poor and second most important means of livelihood for the destitute households that allocate most of their labor time to these activities. The destitute groups relay more on income generation activities other than farming and pastoralism. The implications of such a diversified income source are the existence of different intervention scenarios to improve the livelihood of the pastoral communities besides livestock production.

Incense collection is another activity that generates income for the pastoral communities in *Dhasi*. It is often the poor and destitute who involve in such income generation activity since it requires a lot of labour. However, the production and marketing system of incense is very traditional. The producers could be organized into cooperatives and improve their production and marketing activities so that they could fetch better income from incense production.

The rich and the medium households the agro-pastoral community generate additional income through livestock trade and broker service during market days. In Dire woreda, they travel to *Dubluk* and *Mega* markets two days in a week. The cash income generated through such activities accounts for about 17 percent of the annual income of the rich and the medium households. The poor and the destitute households do not earn income from trade and broker service. The poor are constrained by lack of capital to engage in trade. It can be learned from this that asset ownership could lead to developing self-confidence for the households to diversify their sources of income. Women are involved in the trade activity but at a smaller scale.

7.2.4 Remittance

Remittance is another source of income for the medium, poor, and destitute households. It contributes about 10, 13, and 20 percent to the household income of the medium, poor, and destitute respectively. Some of the households in W*oredas* bordering Kenya have relatives who migrated to Kenya for labor work. The migrants send remittance to their families. On the other hand, though limited, some of the family members of the pastoral communities also move to towns to work and generate income. This system of supporting families is a continuous process. The contribution of remittance to the annual income of the destitute households is as high as 20 percent. It is the second largest source of income next to crop production for the destitute households.

7.2.5 Wage

Wage is another important source of income for the destitute households in *Dhasi*. The destitute households get employment from the rich and medium households of the same community. The destitute households get employed in fetching water, farm works, involved in fencing barn, and other similar activities for the rich and medium households. Wage employment opportunities in the nearby towns is limited.

It was also found out that some of the poor and the destitute households in the agro-pastoral communities earn additional income from wage. The rich and the medium households employ the poor and the destitute for ploughing, weeding, and harvesting activities. Through this, they pay wage for the labor work. Apart from this, the poor and the destitute households hire their children for the rich and the medium households and earn wage from their children's labor. The earning could be in cash or in kind. Sometimes, they serve as herdsmen and get live animals. This is also means of restocking the herds of the poor households.

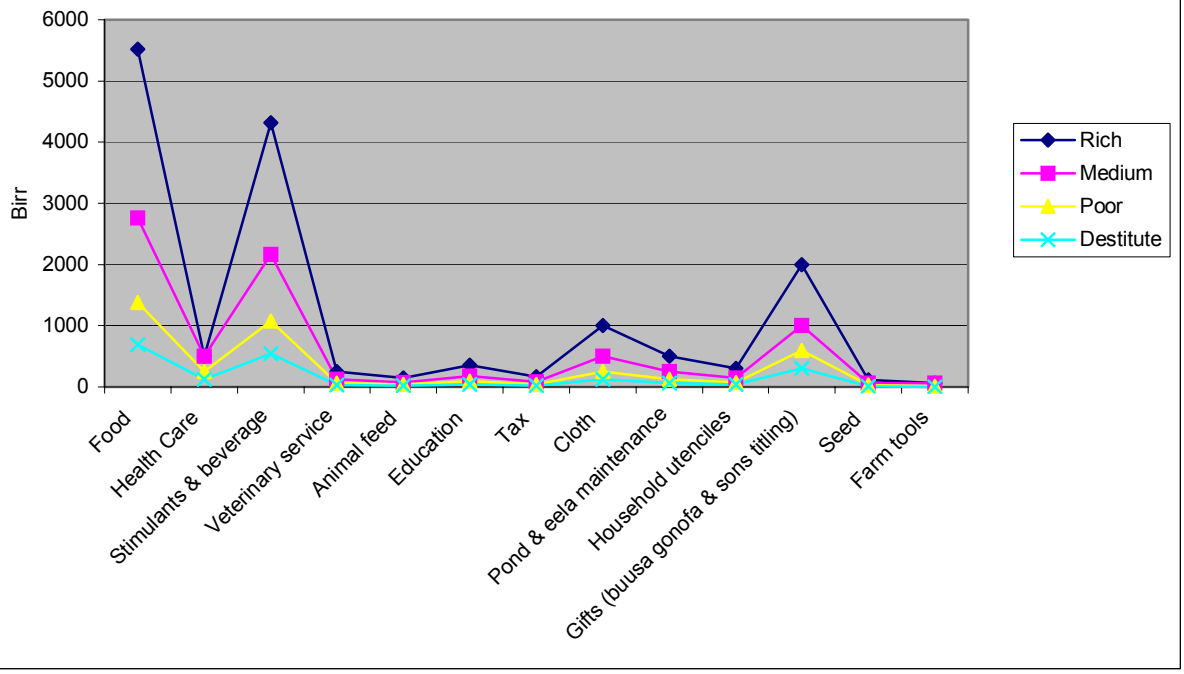
7.2.6 Firewood, Charcoal, and Wooden Furniture

The poor and the destitute households also earn cash income from sales of firewood, charcoal, and wooden furniture. Women are major participants in these activities. The income from such activities accounts for four to seven percent for both poor and destitute households. Some handcrafts men produce furniture from wood and earn income. This activity is performed by men. In Borana, the poor and destitute households supplement their income from sales of forest products and wage while the rich and the medium households do not involve in such income generating activities. This indicates that poverty contributes to environmental degradation as people try to cope by cutting trees and making charcoal. On the contrary, in Hararghe, for example, all social groups including the better off agro-pastoralists consider selling of charcoal as means of cash income generation and involve in this activity.

8. Household Expenditure

The major types of expenditure of the pastoral households are purchase of food items, medical care, stimulants and beverages, gifts such as *Buusaa Gonofa* and son's titling ceremony, clothes, veterinary service, education, pond and wells development and maintenance, etc. The estimated households' expenditure during 2004 is shown on Figure 7. The rich households in *Dhasi* pastoral community spent about Birr 15,246 for the different types of expenses during year 2004. The two major expenses were purchases of food and stimulants (khat and cigarettes) and beverages, which is Birr 5,520 (36 percent) and Birr 4,320 (28 percent), respectively.

Figure 7: Household Expenditure of the Pastoral Communities in Dhasi



Source: Fieldwork in Dire Woreda (April 2005)

In all cases, the largest proportion of household's expenses is on food. Household expenses also relate to consumables such as salt, sugar, spices, etc. and non-consumables such as kerosene. Expenses that have little or no effect on livelihoods of the community are growing. The poor and destitute also spend relatively large amount on tobacco and khat. It was observed during the field study that the habit is common to male and female social groups although the male pays, as he is the one controlling most of the income of the household.

Household expenditures of the four wealth groups during the year 2004 were also estimated using focus group discussion at *Haralo* community. The major household expenditures include purchase of food, clothes, health care, veterinary services, government tax, education expenses, *Jila* (Titling a son), marriage, seed and farm tools, transport, house construction, Khat, beverage consumption, guests receiving, wage payment, *Buusaa Gonofa*, developing wells (*eela)*, and social services such as funeral. The proportion of expenditures by wealth group is shown in Table 6.

The major expenditures went to Jila (titling of a son) followed by food consumption and marriage. The Jila though expensive is not a regular expenditure. Traditionally, the first son is titled by the clan. For such occasions, the parents prepare festival while the clan members give cattle for the son as a gift, which could be taken as a start up capital for later use as a man while a woman grew-up poor and die poor as she is not getting any gift, denied of inheriting her parents and have no right to own, transfer and pass the matrimonial property, save her immense contribution to the creation of wealth be it in her parents or her own household economy. This is the situation that justifies the pronouncement of identifying women as the poorest of the poor. They consider that the son belongs to that clan. Due to this, it is socially obligatory for the rich households to give gifts for the son of the clan. The value of such expenditures could be as high as Birr 4,000 for the rich households. Marriage is another social obligation where each member of the clan contributes for the bride.

Table 6: Proportion of Household Expenditure by Wealth Groups (in %)

Expenditure	**Rich**	**Medium**	**Poor**	**Destitute**
Food	18	14	21	16
Clothes	5	4	4	3
Health care	2.5	2	2	0
Veterinary service	2.5	2	1	0
Tax	1	1	0	0
Education	13	12	0	0
Jila (Titling a son)	20	31	39	46
Marriage	10	13	27	32
Seed and Farm tools	6	4	0	0
Transport	1	1	0	0
House construction/maintenance	1	1	1	0
Khat	2	2	2	1
Beverage consumption	4	3	2	2
Receiving Guests	2.5	2	0	0
Wage	4	0	0	0
Buusaa Gonofa	2.5	4	0	0
Developing wells (*eela*)	5	4	1	0
Total	100	100	100	100

Source: Survey in Dire Woreda (April 2005)

Buusaa Gonofa is another mutual support for the misfortune clan members. Clan meeting is organized every season to assess the misfortunes among the community members. Based on the type and extent of problems, the clan leaders decide to contribute and help the misfortune households. The clan leaders order its members to contribute cattle for the poor and the rich households contribute what has been decided. Refusal of the clan leaders order will bring confiscation and giving more number of cattle for the misfortune households. Including the values of contributions given in kind, the rich may spend about Birr 19,000 in a year.

9. Household Food Security

Seventy five percent of the grain consumed by the rich households in *Dhasi* pastoral community is covered from purchases and 25 percent from own farm production. Similarly, about 83 percent of the grain consumption of the medium household comes from purchases while only 17 percent of the grain consumption is covered from own production. This implies that the pastoral households are net grain buyers.

In terms of food security, the rich and the medium households have access to adequate food through out a year. However, the poor households are food insecure for six months. Similarly, destitute households are food insecure for the whole year. Those food insecure households use strategies such as reduced meal frequency from three to two times a day, use wild food, and get help from rich households.

9.1 Food Consumption

Despite the incomes generated from different sources and own food supply by the pastoral community, food insecurity and poverty is prevalent. It is only the rich, which is only 10% of the community, who can normally feed itself through out the year. The medium group can normally feed itself for only eight months (Table 7). During the food insecure periods, they survive by involving in certain coping strategies such as reducing number of meals. When there is food shortage, reliance on livestock blood as food increases, reducing productivity of the animals and in some instances risking their lives. Those who have only few animals do suck the blood every three days or may ask their neighbors to offer them some animals for this purpose.

The poor and the destitute are in a dangerous position in terms of nutrition. The frequency of meal is inadequate and composition of their meal is poor. Although the culture of the society enables them to access food from their neighbors, this option can no more serve as social security since the society cannot afford supporting the increasing number of the poor in the society. There is a fear that the traditional social supports may deplete the assets of the owners.

Table 7: Consumption Rate and Self Sufficiency in *Gololcha* Community

Particulars	Rich	Medium	Poor	Destitute
No. of food sufficient months	12	8	3	2
Meal frequency	3	3	2	1
Frequency of animal slaughtering (Goats) per year	3	3		*
Milk consumption (times per day)	3	3	2	*
Sugar (kg/week)	2	1	0.25	
Cattle blood (*Hiddachuu*), frequency	Every evening	Every evening	three days a week	Rarely

** They often get from neighbors but not regularly. The destitute can also ask for cattle blood.*

Source: Fieldwork in Dire Woreda (April 2005)

9.2 Coping Strategies

The different wealth groups have different coping strategies and priorities. The first option available to the poor and the destitute is wild food, which is consumed only under crisis situation. They then desperately look for alternative coping strategies such as social supports from their communities, then food aid from external sources. For such social groups, cutting of meal frequency from the current level puts them to a level of starvation and hence considered not as better option. Hence, further cutting of meal frequencies then migration are taken as a last resort (Table 8).

On the other hand the medium and rich categories of the society have the options of selling small ruminants, sell their cattle and start to starve. The opportunities of asking for social support and food aid were not indicated. This makes the information given credible and reliable, as the communities were not biased for seeking outside benefits.

Table 8: Coping Strategies of Different Wealth Groups in *Gololcha* (Ranking)

Coping strategies	Rich	Medium	Poor	Destitute
Income sharing/mutual support			2nd	2nd
Selling of sheep and goats	1st	1st		
Selling of cattle	2nd	2nd		
Reduced meal frequency	3rd	3rd	4th	4th
Eat wild root (*Burii*)			1st	1st
Food aid			3rd	3rd
Migration			5th	5th

Source: Fieldwork in Dire Woreda (April 2005)

In *Haralo* agro pastoral community, the rich and the medium wealth classes were food self sufficient in year 2004. The rich and the medium classes consumed food for three months from own production and purchased food for nine months. They sold part of

their livestock and purchased food items. That means the rich and the medium classes had access to food through production and purchasing for the whole months in the year. On the other hand, the poor and the destitute had access to food for four and three months respectively. According to the focus group discussions carried out at *Haralo* community, the poor and the destitute households had food shortage for eight and nine months respectively. For the poor and the destitute households, producing and selling charcoal and firewood, working as laborer in the neighboring towns, reduction of meal frequency to one time a day, and begging are the major coping strategies exercised.

10. Major Challenges to the Pastoral Livelihood

i. Increase in Population

There is population influx in the pastoral areas compared to the last ten years. One of the reason for population increase in Borana area is due to the Gari-Somali and Borana border conflict. The Borana claim that the Geri-Somali took large part of their rangeland and traditional water wells. Due to this some pastoral households moved to the neighboring Oromo communities and created over population. The increase in population can be signified by the increase in the number of *Ollas* from 10 to 58.

ii. Cross Border Trade Restriction

Informal cross border trade is also banned negatively affecting the income of the pastoral communities. As there is limited employment opportunity other than livestock production, low price of the livestock in the domestic market reduces the income of the pastoral community.

iii. Decline in Mutual Support

Another negative change in Borana is the declining trend of mutual aid among the clan members i.e *buusas gonofa*. Two types of community support systems stand out. The first one could occur by simple understanding of problems of individuals or relatives and provision of assistances. In this case, the rich may give one or more animals as a donation to the poor. He may also authorize the use of milk from a lactating animal without giving out the cow as such. The second type of support is when a member of the community appeals to his clan group for social support. Traditionally, the clan leaders assess the situations of the applicant and decide on the case. If the individual lost his livestock due to situations beyond his control, the leaders may decide that some cattle are given from the herd of one of the clan members. This tradition is getting weak due to increased number of poor people for whom such assistances are needed. There is a tendency that the clan members cannot accommodate such an increasing demand. Hence, the community members are relying more on the first type

of social support. However, such positive practices are diminishing over the recent years as some clan members started refusing the directives of the clan leaders and appealing to *Kebele* social courts. The kebele social courts reverse the decisions of the clan leaders and affected the mutual support system.

iv. Decline in Range Productivity

Reduction in rangeland productivity is the most important negative change the community members recognize. Due to increased bush encroachment, reduced rainfall, termite infestation, and expansion of cropland, pasture production is getting smaller and smaller over years. This resulted in continued *Fora.* The impact of reduced rangeland productivity on livestock productivity is obvious. It has direct implication on the household food security. As it affects the supply of milk and other livestock products, the product to which women and girls have access and control, reduced rangeland productivity has direct implication on gender based empowerment.

v. Decline in Livestock Productivity

On the other hand, due to frequent drought in the pastoral communities, livestock productivity declined in the past decade. Milk and meat production and productivity reduced due to the decline in rangeland productivity. Unwanted bushes invaded the pasture land which led to decrease in rangeland productivity. The 1999/2000 drought also highly affected the livelihood of the pastoralists. Large number of livestock died. For instance, there were certain households who lost a thousand of livestock due to the drought. It was reported in the STUDY discussion that some persons committed suicide, as a result of such a disaster. As a result of the loss of livestock, household income declined drastically and they became vulnerable to food insecurity. This led the vulnerable households to cutting trees as an alternative source of income affecting also the environment.

vi. Decline in Food Security

Changes in the food security situations and household incomes were perceived differently by different communities and social groups. The survey result from Dire woreda indicates that 79% of the respondents said that their income reduced during the last ten years. The income diversification considered as a positive change is also in response to this decline in income level. There is, however, variation among community members and across the communities. It has been argued in the *Haralo* community that the nominal income of the households increased due to increased price of livestock and livestock products. During the last ten years, rangeland productivity declined and as a result the milk yield declined. In *Dhasi* community, for instance, the daily milk yield declined form about four liters to 0.75 liters per cow. The decline in milk yield is apparently severe in that many of the pastoral communities do not get milk for consumption during dry seasons and some cows do not even produce milk enough for calves. Increased incidence of mastitis is also responsible for the reduced milk production. This has also forced changes in feeding habit of the pastoral

communities. The communities rely on grain consumption and drinking black tea compared to the situation before 10 years.

Because of the decline in livestock productivity and crop yield, the community feels that their food security declined. On the other hand, expenses for living drastically increased over the last 10 years. It was indicated that Birr 500 before 10 years would worth Birr 5,000 today. This means that the utility obtained by expending two cattle before 10 years would require 6 cattle today. Thus, because of increased living expenses and increased population, and reduced income, the community has perceived that they are less food secure than they were before 10 years.

vii. Decline of Pure Borana Breed

The communities also relate feeding and physiological development. For instance, the ribs of well-fed animals grow outwards and make broadened bow whereas ribs of poorly fed animals would grow more straight downwards, bending at smaller angle. The discussion reveals that the former shape existed before 10 years and the later one refers to the current phenomenon. Moreover, the pastoralists also recognize that the livestock is physically smaller today than it used to be. This could partially be attributed to change in genetic resources since the Boran breeds suffered from the effect of drought and pastoralists introduced small sized and more tolerant breeds from the neighboring communities. On the other hand, it would also be the effect of continued decline in rangeland productivity, which somehow reduced the carrying capacity of the land.

viii. Decline in Crop Productivity

Productivity of cropland declined over the last ten years despite the increased area under cultivation. For instance, maize yield declined from about 20 qt per ha before 10 years to 7qt per ha to day owing to erratic and inadequate rainfall. Hence, the income from livestock and crop production declined over the last ten years. This also contributed to household food insecurity.

ix. Increased Consumption of Items Having Addictive Nature

There are also changes in consumption of items of less nutritional value, expensive and addictive nature. The number of community members i.e. men and women, who consume khat and smoke or use tobacco has considerably increased. It appears that it is socially accepted. Moreover, beverages are increasingly consumed both in the community and in the towns by the pastoral communities. Despite the reduced income of the households and increased food insecurity, the increased use of these addictives is perceived as negative developments.

x. Other Negative Changes

Although the situations are not worsening, lack of improvement in the following issues was recorded. It was appreciated by the pastoral communities that the workload of

women is still high. In all the communities of the study, women should either travel very long distance to access flourmill or they have to manually grind. This costs women the time they could have used for some other important matters. Moreover, women's control over resources and benefits has been meager. Changes in traditional practices that affect the rights of women is not to the expected degree. Hence, women are highly vulnerable to the risk of HIV/AIDS.

Moreover, awareness on alternative use of the livestock wealth has not been created by the largest proportion of the pastoral communities. Alternative uses of such wealth based on business principle would help to diversify livelihood portfolio of the pastoral community, create risk management mechanisms, and adjust livestock populations to rangeland and water resources carrying capacities.

Limited provision of livestock and public health services in the vicinities of the pastoral communities is observed over the last ten years. Overall, livestock drugs and medicines are not available. Lack of training appropriate for pastoral community development staff, supply of appropriate crop, livestock and natural resources management technologies could be considered as negative.

11. Conclusions and Recommendations

11.1 Conclusions

i. Livestock mobility would continue to ensure high productivity due to changing environment, change water and feed sources, better pasture supply, etc.

ii. Mobility is curtailed by combination of factors such as population growth and settlement in remote grazing areas, existence of claims by different ethnic groups on rangelands, the impartial impact of drought, increasing settlement to get social services, and the declining number of cattle holding per household.

iii. There are negative consequences as a result of livestock mobility. These are resource competition, environmental degradation, transmission of diseases, abandoning of farmland, incurring additional expenses, high livestock death, and ethnic conflict, which claims human lives.

iv. Privately owning land, often in agro-pastoral areas, would restrict livestock mobility and creates pressure on the rangeland and hence affects the pastoral livelihood system. As a result, the policy of landholding certification as it is applied in the non-pastoral areas cannot be applied on the rangelands.

v. There is controversial view on expansion of cropland. The rich who have large herd size wishes to have larger rangeland size to feed the livestock. On the other hand, the poor who in most cases lost their animals to drought would like to increase their income portfolio by expanding cropland.

vi. In both pastoral and agro-pastoral communities, the contribution of livestock and livestock products to the household's income is the highest for the rich and smallest for the poor owing to the size of livestock they hold. The destitute households have no livestock. Yet the number of poor households is increasing due to drought.

vii. The agro-pastoralists are poorer than the pure pastoral communities indicating that farming has been adopted to cope with food insecurity caused by declining livestock herd. But the income discrepancy between the social groups is significantly high. The rich could generate four folds of the income the poor earns.

11.2 Recommendations

i. The land tenure system under the umbrella of specific clan that distinguishes the rangeland and cropland has important policy implication for the regional governments. Conflict between crop producers and large livestock owners is best managed through **appropriate land use policy** that is designed through participation of all stakeholders.

ii. **Mobility of livestock is a necessity** in the pastoral areas for the best economic use of range resources coping with the ecosystem variability. This should be understood by the federal and regional governments and accorded.

iii. **Partial sedentrization** is emerging due to increased risk of drought. Provision of public facilities such as construction of roads and infrastructure in the pastoral areas for easy transportation and operation can solve some of the problems of pastoral risks such as lack of market for cattle, and information sharing problems. School, health and water supply issues are growing concerns, which could be used as means of encouraging more sedentrized mode of life. Yet, the pastoral settings are different and similar policies of providing these services as it is the case in the highly populated highland areas cannot be applied.

iv. **Crop farming and participation in income diversification activities** such as petty trading is expanding in response to declining means of indigenous livelihood system as well as sedentralization. In all of the regions, the crop production in the fragile ecologies of the pastoral systems is not supported with appropriate technology and extension system. Crop farming in Borana area has been source of conflict between the poor who lost his livestock due to drought and those having large herd size. Appropriate land use policy and improving the rangeland productivity in a participatory approach is an important action to be made by the region.

v. Investment in rural infrastructure such as roads, community radio and means of communication in the pastoral areas is essential to overcome pastoral risks creating access to market livestock and livestock products, and information sharing for early warning.

vi. Small scale enterprises that can be performed by women that include milk processing, grain mill operation, trade of livestock, cattle fattening, handcrafts, and petty trade require technical and financial support.

vii. In an attempt to create asset basis for the poor and destitute households, women shall be targeted within the household context so as to gradually establish asset ownership by women and empower them.

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