

Livelihood Vulnerability and Coping Strategies among the Karrayu Pastoralists of Ethiopia

Sileshi Mengistu

*Department of Civics and Ethical Studies, Arba Minch University, Ethiopia, e-mail:
sileshi.mengistu@amu.edu.et*

Abstract:- For the past several years pastoral societies have experienced severe vulnerability to recurrent risks, shocks and trends that caused extreme livelihood deterioration and poverty. In order to sustain their survival pastoralists across the Horn of Africa have developed different adaptation and coping mechanisms. The way livelihoods changed, adapted or failed to adapt the challenges posed by the economic and ecological environment determines the food security status of the household. The purpose of this study was to investigate the types of vulnerability and coping strategies among the Karrayu pastoralists of Ethiopia. Primary data collected using interviews, focus group discussion and personal observation. Policy documents, books and journal articles referred to get secondary data. The finding indicates drought, flood, range land degradation, farm land fragmentation, animal disease and conflict are the major sources of vulnerability in the study area. Depending on the economic status of the household the major coping mechanisms employed by the community include: migration, consumption reduction, consumption of wild fruits, selling asset and selling fire wood or charcoal.

Key words: *livelihood, vulnerability, coping strategy, food security, karrayu*

I. INTRODUCTION

For years different attempts made to answer the question what causes household poverty. Today there is a better understanding of these causes (Frankenberger and McCaston 1998). In the 1970s food security considered in terms of food availability at national and international level. The conventional conception of food security puts food at the top priority of human needs (Degefa, 2005). However, this view was challenged after observation of the experiences of the food insecure people. During the 1984/85 famine in Darfur region of Sudan, the main concern of the people under famine was to preserve their livelihood (Maxwell, 2001). Researches carried out in the late 1980s and early 1990s showed that the then conception of food security needed revision. The researches indicated that food security is not the ultimate goal of poor people; there are beyond food reasons in their decision to balance between food security and livelihood sustainability. People would prefer to be hungry today than to lose their livelihood asset (Maxwell and Smith, 1992). Sustainable livelihood as a concept has been in use since the 1980s following the shift in food security analysis from 'food first' to the 'livelihood perspective' (Degefa, 2005). A livelihood is considered sustainable based on its capability to withstand and cope with vulnerability without losing its capability and causing massive environmental deterioration (Scoones, 1998). The risk of livelihood failure determines the degree of household's vulnerability to socio-economic insecurity including income, food, health and nutrition. Therefore, livelihood security implies secure ownership and access to socio-economic and natural resources and the capability to survive shocks and vulnerabilities (Chambers, 1989). Thus, food security constitutes a system of broader livelihood security and sustainability, in which the management of risk and vulnerability are critical elements. A household is food secure not only because it satisfies its food requirements but also because it developed the capacity to keep up the food availability in the face of risks and vulnerabilities (Maxwell, 2001). The ways livelihoods are changed, adapted or failed to adapt the challenges posed by the economic and ecological environment determines the food security status of the household (Swift and Hamilton, 2001). Food security is therefore explained by the sustainability of livelihoods adopted by households or individuals. Vulnerability implies the degree of peoples' exposure to threatening conditions in their socio-economic and natural environment. Vulnerability can be considered as the measure of livelihood sustainability. A sustainable livelihood has the resilience to cope up and resist risks and shocks. External shock and household's capacity to cope with the shock are two intertwined dimensions of vulnerability (Chambers, 1998). People are more vulnerable if they are affected by events outside their control. A particular shock can affect different households differently depending on their access to social, economic, natural and political resources. Coping strategies are the bundle of responses to declining food availability and entitlements in abnormal seasons of the years (Degefa, 2005). In other words, it is a mechanism employed by households to survive when faced with unexpected

livelihood failure (Ellis, 2000). Most of the time it is associated with natural and civil disasters like drought, floods hurricanes, pests and civil war. For the past several years pastoral societies have experienced severe vulnerability to recurrent risks, shocks and trends that caused extreme livelihood deterioration and poverty. In order to sustain their survival pastoralists across the Horn of Africa have developed different adaptation and coping mechanisms. Misguided development interventions, drought, conflict and political marginalization have undermined the sustainability of pastoral system of production (Devereux 2006.). The frequent perpetration of damage by natural and human forces has limited the productive capacity of the system (Wassie, 2009). Pastoral communities are highly vulnerable to food insecurity. Vulnerability to food insecurity is caused by underlying causes, external shocks, and internal capacities to cope. Underlying vulnerability is very much associated with structural conditions, rendering some populations more vulnerable to acute food shortages, such as poverty, lack of basic services, etc. External shocks are associated with the actual emergency or stress factors, such as recurrent drought, floods, earthquake, conflict, displacement, etc (Beruk, 2003). After studying Somali pastoral societies in Ethiopia Devereux pointed out that the extent of vulnerability is determined by the coping mechanism available for households than the drought itself (Devereux 2006). This implies that the poor and rich section of the society can be affected at different level depending on their available coping strategies. However, there are some factors that deteriorate the coping mechanisms of pastoral households in general. Especially those factors that restrict the mobility of people and animals play a significant role. These factors include confiscations of vast pastoral land to mechanized agriculture; parks and game reserves; restrictions on trade and movement; poverty and poor investment in social services and infrastructure (ODI, 2009). These restrictions on mobility of animals and people may also lead to intensification of conflict and natural resource degradation which accentuate the vulnerability trap. In recent decades however, it has been witnessed that pastoralists' strategies have been significantly stressed and pastoralists' resilience in the face of drought-related shocks has been progressively undermined. The loss of productive assets and increasing household food insecurity due to drought has become defining features of pastoral communities in Ethiopia. Vulnerability to food insecurity may be caused by factors such as land degradation, recurrent drought, population pressure and low agricultural productivity (Bushell, 2009). This study was conducted to understand the sources of vulnerability and the coping strategies among the Karrayu pastoralists. Therefore, this study was intended to answer the following questions:

1. What are the major sources of livelihood vulnerabilities in Karrayu pastoralists?
2. What are the coping strategies the Karrayu pastoralists use to mitigate these vulnerabilities?

II. MATERIAL AND METHODS

2.1 Description of the Study Area

The Karrayu are transhumant pastoralists located in eastern lowland arid and semi-arid part of the country and inhabit the Matahara plain and the surrounding of Mount Fantalle, in the Upper Awash River Basin (Dulla, 2013). Administratively the Karrayu are under Fantalle district of East Shoa Zone in Oromia Regional State. The capital town of the district called Matahara is located 193 Km east of Addis Ababa on the main road to Djibouti bordered by Boset district in the West, West Haraghe Zone in the East, Afar region in the North, and Arsi Zone in the South. The total land coverage of the district is estimated about 133963.66 hectare. While the area is dominantly inhabited by Karrayu Oromos there are also groups like Ittu, Somali, Amhara etc. The district lies in the lowland area located in the middle of the Rift Valley region. It is composed of flat land and big hills of volcanic nature with an altitude which ranges between 980 meters on the plains and 2007 meters at the peak of Mount Fantalle. The area is covered with barren hillsides, scanty bushes, and Acacia trees which are undergoing deforestation.

2.2 Material and Methods

The study was conducted among the Karrayu of Gola and Galcha villages. In conducting the research focus group discussion (FGD), observation and key informant interview techniques were employed. A time line was used to record changes over time of events such as the occurrence of droughts and diseases, flood, trends in availability of natural resources, human and livestock population, prices, etc. The time line was important to understand the dynamism of vulnerability over time. The time line method was used with groups of key informants who are elders of the Karrayu community. Content-analysis was employed in analyzing the contents of documentary materials such as books, journal articles, and the contents of all other verbal information gathered from community leaders. As such content analysis was employed to understand, the nature and causes of vulnerability and coping strategies among the Karrayu societies.

III. RESULT AND DISCUSSION

The pastoral production system is highly endangered because of human intervention and natural risks. Some of the major risks that challenge the pastoral communities include: expansion of agro-pastoral, sedentary and commercial agriculture; expansion of national parks inside the rangeland; encroachment of unwanted plant species; conflict over natural resources; and frequent drought (PFE, 2002).

3.1 Vulnerability and coping strategies among the Karrayu pastoralists

The sustainability or vulnerability of livelihoods depends upon the interplay between access to various forms of assets, the existing context (history, trends and vulnerability, shocks), the mediating processes (institutions, organizations, and social relations), the activities, and the resulting livelihood strategies that a household pursue (Carney, 1998).

The vulnerability context which includes the trends in population and natural resources (like soil erosion, range land degradation, water pollution, farm fragmentation) and shocks including; drought, flood, conflict, human and animal diseases are determinant in analyzing livelihood sustainability (Ellis, 1998). The factors that constitute the vulnerability context are important because they have a direct impact upon household's asset status and the options that are available to them in their effort to build successful livelihood outcomes (DFID, 1999). The people inhabiting in Gola and Galcha villages of Fantalle district are vulnerable to different stresses and shocks that are threatening their survival. While some of these threats emanate from the agro-climatic nature of the area, their magnitude and their damage on human and animal life is explained by socio-economic factors. In a participatory discussion undertaken with female and male groups of the two villages, the following trends and shocks are identified based on their severity to their livelihood.

3.1.1 Range Land Degradation

Range land is one of the most critically scarce resources upon which pastoral livelihood depend. In the pastoral practice, it is divided between dry and wet season range lands. Wet season range lands are those lands live stocks graze during summer time. Dry season range lands in contrast serve as a source of livestock feed during winter (*Bona*). Dry season range lands are found along river banks and other water bodies. Traditionally, the fertile floodplains of the Upper Awash Valley provided the best pastures and water resources for the Karrayu pastoralists during the dry season. They used to graze their animals in the Metahara, Merti and Illala plains during the dry season and water them in the Awash River. In the wet season, the Karrayus would move to the foothills of the Fentale and Choppa Mountains up to the borderlands of Bulga River near the Argoba's land. There was a natural balance among the people, natural resources and animals due to opportunistic migration between the dry and wet season grazing and watering sites (Eyasu and Fyera, 2010). In comparison to the past two or more decades, the informants from both Gola and Galcha villages disclosed that there has been deterioration of both wet and dry season range lands. Following the establishment of the sugar enterprises in the early 1950s, with their series of irrigated sugar cane plantations, the Karrayus were forced to leave the plains to inhabit the marginal lands around the hills that are less suited to pastoral production. They are now forced to move very long distances in search of pasture and water for their animals. Prior to the introduction of the development schemes, the Karrayus seldom moved more than 50 km from their place of residence (Ayalew, 2001). Now, they move with their camels along the Modjo-Ziway-Arsi-Negelle-Shashemene route, covering about 250 km during severe dry seasons.

Informants from both villages explained that the human population has been increasing dramatically. In addition to birth, over the last three to four decades other groups Somali, Ittu, Amhara etc have continued to migrate and settled in the traditionally Karrayu territory. The establishment of national park, sugarcane plantation, the expansion of towns, and the beginning of irrigated cultivation in the area attracted different workers from and outside of the district to these villages. The Awash National Park alone has expropriated about 75,000 hectares, while the state sugar farms have taken 15,000 ha. These sites represent some of the best dry season grazing areas along the Awash River. It is estimated that together the two development schemes have reduced pastoral grazing areas by 60% (Ayalew, 2001). This population pressure, according to the discussants, has brought an adverse effect on the natural resource of the area. Farm land expansion, deforestation for the purpose of house construction, and firewood selling are growing from time to time. Because of imbalance between the human and animal population, and the carrying capacity of the land, the grazing areas have been encroached and deteriorated. As far as wet season range land deterioration is concerned, the expansion of rain-fed farming, encroachment of unpalatable trees like *weyane* (*prosopis*), the expansion of house construction has reduced the wet season grazing areas. Furthermore, the establishment of Awash National Park on the vast land of their traditional wet and dry season grazing area; the alienation of access to the banks of Awash River especially in Galcha village and the ever expanding nature of Lake Basaka have reduced the space for livestock mobility. This in turn resulted in overstocking and overgrazing of both wet and dry season grazing areas. For

this reason, the discussants of both villages stated that many palatable grasses specific to cattle and sheep which were once abundant are either limited to few areas or disappeared totally. Grasses which are known by their local names like *Sambaleta*, *Daremo*, *Bardo*, and *Kunni* are now growing in few areas of both villages while *Chokorsa* and *Fungatuka* are found to be completely disappeared from their indigenous growing areas.

3.1.2 Farm Land Fragmentation

Unlike today, Ayalew observed that “those Karrayu who first started cultivation occupied as much as one or two hectares of land depending on the resources and abilities they had to manage farming activities” (2001: 331). The information from the district pastoral development office shows that except for few most of the cultivating households especially irrigation users have a plot of 0.25 hectare. Kelil Weday, an elder from Gola village reasoned that because of unreliability of the rain-fed farm, there has been a continuous subdivision of the irrigated farm plot among families and relatives. According to him, the exceeding population size of the kebele and the availability of limited irrigable land are catalyzing this farm fragmentation.

3.1.3 Scarcity of Water Resources

Lake Basaka and Awash River are the major water bodies that cover the vast land of Fantalle district. While the former is not potable for both human and livestock, the latter is inaccessible especially to the community due to the fact that the sugarcane plantation of Matahara Sugar Estate has fenced off the area. The loss of water is most severe for the Karrayus as they have lost rights to access the Awash River. The sugar plantations are not willing to provide livestock corridors to the Awash River in case the animals damage the cane plantations. In order to compensate for the loss of access to the Awash River and to keep the Karrayus out of the estate, large ponds were dug by the sugar enterprise. But the estate’s processing plant releases contaminated water into the ponds, which humans and livestock alike are forced to drink, with serious health risks. This has been a major source of contention between the plantation and the community. Especially during dry season as the only borehole diminishes and water scarcity becomes the major problem of the community. In order to cope with this problem the community uses different mechanisms. Sometimes they break in and water their animal. They move to other areas especially to northern part of the district where they share border with Afar pastoralists. This causes conflict between the Karrayu and Afar pastoralists over scarce water resources. They also fetch water from the nearby town which mainly is a burden to women and children. A woman from Galcha village stated that “at this time transporting water from Matahara and Haro- adi towns becomes a back breaking task for women and children.”

3.1.4 Decreasing Livestock Resources

The most important asset owned by pastoralists is their livestock. Livestock resources in the pastoral lands of Ethiopia are not only the sources of food and cash income but also they signify the prestige and wealth status of the rearing household. In Karrayu communities while cattle and camel are main sources of food and prestige, shoats are considered as cash income and donkey serves for transportation of water and other commodities. However, the cumulative effect of the dramatic cut in the area of grazing lands and the loss of strategic pasture and water areas is a severe decline in the size of the individual livestock holding.

In comparison to the past two or more decades, the size and species composition of the livestock population have been decreasing. Grazers which were dominant once are being replaced by browsers because of change of vegetation cover. These days bush and shrubs are flourishing on the range land.

Concerning the decreasing trend of the livestock population, an elder from Gola kebele expressed the situation as follows:

Previously, people who owned 5 camels, 10 cows, 20 to 30 goats, and 20 to 30 sheep; that were few in most cases, were considered as the poor fellows of the community. But today those who own the same livestock size, who are very few, represent the richest members of the community.

Livestock disease is one contributing factor for the decreasing of animal population. The common diseases as identified by informants from the district veterinary service center include: internal parasites, pneumonia, calcium deficiency, anthrax, anaplasmosis, and external parasites etc which affect different livestock species. Most of these diseases occur during dry season when the animals lose their weight due to water and pasture scarcity. This implies that pastoralists are worse off both economically and socio-politically today than in the past, particularly the Karrayus. Many households have had to sell their livestock to buy day-to-day necessities, including food and medical needs. Such distress sales, coupled with drought-induced losses, explain the decrease in livestock numbers among pastoral households (Eyasu and Feyera, 2010).

2.1.5 Drought

In Ethiopia, where drought has become more frequent and cyclic, the number of the victims has been increasing from time to time. At present, more than 50% of the chronically drought affected population in the

country is from the pastoral areas of the country. The frequency of drought occurrence is greater than before, manifested once every two to three years and, at times, once every year, affecting either big areas or small pockets. Few years ago, drought in the pastoralist areas was a natural phenomenon that happened once in a long period, however, in recent past it occurs more frequently. Although the degree and impact of the drought varies across the pastoral groups, it remains a major cause of asset losses and resource degradation leading to poverty. It also increases vulnerability of livestock to death and equally threatens the pastoralist's livelihoods (PFE, 2002).

In arid and semi-arid regions drought is a major recurring risk (Devereux and Maxwell, 2000). Because of unfavorable climatic condition, which is explained by erratic and unpredictable nature of rainfall, there is a general agreement that drought is the norm of the agro-ecology. The drought that affected the area by 1973/74, 1984/85, and 2002/03 indicates that the area has been a common target of this risk. In relation to the past two or more decades, the magnitude and damage it perpetrates is increasing from time to time. According to the informants, in the past it used to occur once over a long time and the impact was not as devastating as it is now. These days, it occurs once in every two years and livestock death, disease and human starvation is common. The reason why pastoralist areas have not yet recovered from drought can be classified into four. These involves, change in land use in the past 60 years, the pastoral communities have lost about 2.6 million ha of their prime grazing territories, to different agricultural development interventions; Poor socio-economic infrastructure, Conflict over remaining key natural resources, Poor human resource development; and lack of policy support to the pastoral production system (Beruk, 2004). Social capital which refers to the exchange of support among members of a social group serves as a fall back when people are facing livelihood failure. In the culture of Karrayu community clan (*gosa*) is the most important sources of social capital. Sheik Muktar (the leader of the Geda system, an indigenous governance institution), stated that "clan is equivalent to insurance upon which members rely not only in time of crisis but also during festive times." According to him, every vice and virtue that happens to clan members is taken to be the affairs of the clan in general. Therefore, when people are suffering or preparing for festivals like marriage the clan members have a collective responsibility to contribute. During drought seasons the clan members contribute food grains and animals to the neediest members. The clan leaders known as *Damina* are responsible to facilitate the support.

Recurrent shocks and negative trends have a natural tendency to severely limit the system's asset accumulation potential. One of the damaging impacts of such a trend is related to the observed degradation of the indigenous social support capacity of the system (Wassie, 2009). With the same observation the discussion with informants revealed that this social safety net has been waning due to recurrent drought and loss of livestock.

The specific coping strategies vary according to the wealth status of households. The common coping mechanisms available to the poor include: migration to the well to do families or relatives, charcoal and fire wood selling, and consuming wild fruits. The rich and well-to do households survive the situation by selling livestock; reducing consumption and income diversification. Due to the reason that there is high supply of animal sell at this time the bargaining power of the pastoralists reduces. Therefore they are forced to sell with lower price compared to normal time.

In developing countries, household food security studies show that livelihood diversification strategies are part of coping strategies by the rural people (Hussein and Nelson, 1998). Searching for new sources of income is the primary response. However, it could be followed by enforced asset sales which change the future livelihood patterns (Ellis, 2000).

In the discussion with female groups of Gola and Galcha villages, the beginning of cultivation as livelihood diversification has been changing their roles and their work load has become unbearable. In the past, moving with livestock in search of pasture and water was reserved for males. But now due to shift of male labor from animal rearing to cultivation, women started to replace males' former role. Especially, those females who don't have a capable son are required to travel a long distance with their livestock in search of animal feed and water. In line with this idea, it is stated that "diversification may alter institutional arrangements, although it may also be channeled through existing institutional arrangement" (Swift and Hamilton, 2000).

In this case the beginning of cultivation is exacerbating the problem of livestock resources, particularly cows. In the Karrayu and Ittu communities of Gola and Galcha villages' cows are considered as the possession of women. Milk and milk products and the income generated from the sale of these resources have been under the administration of women. Unlike the contention that diversification improves the independent income generating capacity of women, the Karrayu and Ittu women of Gola and Galcha kebeles have been losing their traditional income independence and resource administration role. This is because with the beginning of cultivation, especially those households who do not have oxen to plough their land are forced to trade-off cows for oxen which may exacerbate the problem of alternative food source during flood or crop failure.

3.1.6 Flood

Gola village is bounded by Awash River to the south and Lake Basaka to the west. From June to December (rainy season) both water bodies overflow to the surrounding area to cover much of the grazing and cultivable lands. At this time livestock mobility is restricted to few areas which affect livestock productivity and household food availability. Therefore, households are forced to move to other places with their animals until the water recedes. Sometimes unexpected flood causes massive damage to the community. Agro-pastoralists lose their crops along the banks of the river, animal and human life can be lost, and the food crisis is worsened. At this time, the people apply different coping mechanisms including sale of animals, consumption of deposited food crops, migration and selling fire wood.

3.1.7 Conflict

Conflict is a common phenomenon among pastoralists and it is caused by competition to control over scarce natural resources like pasture and water. Hostilities among the pastoral groups of Awash valley have been aggravated by land alienation and expropriation for Awash National Park and Metahara sugar plantations (Eyasu and Feyera, 2010). These interventions displaced the pastoralists from their traditional land which resulted in the shrinking of grazing lands and watering points (Getachew, 2001). Especially during drought seasons the Karrayu pastoralists migrate to neighboring areas for pasture and water to other bordering areas and at times it triggers sporadic conflict with other pastoral groups (Afar and Argoba) at *Arrolle* and *Dhadhacha Malka* and *Haro-Kersa* grazing areas resulting in killing, looting, and food insecurity in the area.

IV. CONCLUSION

The major sources of vulnerability that threaten the food security among the Karrayu pastoralists include: range land degradation, farm land fragmentation, drought, water scarcity, conflict, flood and decreasing livestock resources. Depending on the wealth status of the household the coping strategies vary across the society. Asset selling, consumption reduction and livelihood diversification are the common coping mechanisms among the rich and the well-offs. The poor members of the society on the other hand commonly use charcoal/fire wood selling, migration and wild fruit consumption.

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