

Environmental rights and Pastoral livelihoods: The case of Borena and Kaarrayu pastoralists in Ethiopia.

Eyasu Elias

Centre for Environmental Studies , College of Natural Sciences , Addis Ababa University

Eyuelias@yahoo.com

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Abstract

Pastoralists in Ethiopia make an immense contribution to the national economy despite living in some of the most inhospitable and drought-prone parts of the country. Their traditional migratory lifestyle and knowledge of dryland resource management has allowed them to generally withstand drought and to maintain a healthy and biodiverse ecosystem in their communally-managed rangelands. However, Policies have favoured externally-imposed development schemes which often alienate and expropriate pastoral lands in favour of large-scale commercial activities. Resource alienation and curtailment of mobility has prevented pastoralists from accessing their traditional grazing and watering areas. Main reasons are commercial plantations, ranches and national parks have made pastoral households vulnerable to frequent droughts, food insecurity and famine. This paper illustrates the extent and forms of land alienation and its impacts on pastoral livelihoods through field research done among the pastoralist and agropastoralist communities of Southern Ethiopia. The research found that livestock numbers are declining dramatically, land degradation is increasing, and people are becoming more vulnerable to food insecurity. The internal responses employed by pastoralists have become inadequate in the face of the pressures and changes that take place too fast to allow for a positive adaptation. The study concludes that support is needed to scale up pastoralists' efforts to diversify their livelihoods. The recent land registration and certification process has ensured usufruct rights for farmers but these efforts have not been implemented in the pastoral areas. The need for protecting pastoralists' culture and practice of mobility is highlighted in order ensure effective use of the dispersed dryland resources through giving legal backing to customary institutions.

Keywords: pastoralists, mobility, land alienation, dryland, vulnerability, coping, Borena, Karrayu, Ethiopia

1. Introduction

Pastoral communities represent 10% of Ethiopia's population (which is about 72 million) and approximately 40% of the land area of Ethiopia is considered to be under pastoral production (Helland 2006). The pastoral populations tend to live in the drier and hotter lowlands of the country: these include the whole of Somali region (accounting for 57% of the pastoralists in Ethiopia) and the Afar region (26% of Ethiopian pastoralists). The *Borena* and *Karrayu* pastoralists in *Oromiya* Regional State (ORS) together account for about 10% of the total pastoral communities in Ethiopia (Figure 1). The remaining 7% of Ethiopian pastoralists inhabit the lowlands of the Southern, *Gambella* and *Beni Shangul* regions (Yacob 2000; Sandford and Habtu 2000). Pastoral production makes an immense contribution to the national economy by raising 40% of the cattle, 75% of the goats, 25% of the sheep, 20% of the equines and 100% of the camels (Yacob 2000). The total direct economic contribution of pastoralism to the Ethiopian economy (through the production of milk, meat, skin, hides, etc.) is estimated at US\$ 1.53 billion, which accounts for about 6% of the agricultural GDP per annum (Berhanu and Feyera 2009).

However, despite their economic contribution, there has been a fundamental misunderstanding of the pastoral production system in Ethiopia (like in many other countries in Africa). There is a general perception among policy makers that pastoral lands are underused and therefore should be brought under the plough or put to other uses such as ecotourism. Such misperceptions have subjected pastoral communities to political and economic marginalization. Policies have favoured externally-imposed development schemes which often alienate and expropriate pastoral lands in favour of large-scale commercial activities. Resource alienation and curtailment of mobility has made pastoral households vulnerable to frequent droughts, food insecurity and famine.

The aim of this study was therefore to generate important empirical evidence that would form the basis for pastoralists' engagement with policy makers. Building on an existing body of knowledge and institutional experience, we explore the forms and causes of land alienation and its impacts at pastoral livelihoods and the environment. The internal responses and coping strategies employed by pastoral communities have also been explored in the case study sites and policy and research implications are highlighted.

2. Study methods

2.1 Description of Study sites

The study was conducted among the *Borena* and *Karrayu* pastoral groups in ORS in 2007 (Figure 1). These two pastoral communities reflect many of the pastoral land rights problems and the predicaments of pastoral

livelihoods in the country's socio-political system today. The study covered three *woredas*¹ *Borena* (Yabello, Liben and Dire) and the whole of Fentale *woreda* among the *Karrayu* in the East *Shoa* zone. It is believed that the *Borena* and *Karrayu* pastoralists are represent the two main Oromo pastoral communities in Ethiopia (see Sanford and Habtu 2000). They, thus, share a common form of customary social and political organisation including the customary land right administrations and resource governance systems. The study wanted to concentrate on these two pastoral communities because they represent much of the pastoral land right problems and the predicaments of pastoral livelihoods in today's socio-political system of the country.

The different production scenarios included were pure pastoral system, agro-pastoral system and urban commercial activities. Sandford and Habtu (2000) define pure pastoralists as those who derive most of their livelihood from keeping domestic animals in conditions where most of the feed that their livestock eat is natural forage rather than cultivated fodder and pastures. Agro-pastoralists are different from pure pastoralists because they also cultivate crops and are less dependent on livestock than pure pastoralists. These production scenarios are fundamental to unpack the core issues of pastoral land rights. It is hypothesized that land right concerns will vary across different land use types. The study sites and the different thematic issues they represented are summarized in Table 1.

2.2 Sources of Data and sampling procedures

The study involved informal and formal surveys at community and household levels in the *Borena* and in *Karrayu* areas in 2008. The community survey (with elders) involved a semi-structured questionnaire to generate qualitative information on pastoralist land rights concerns. Group discussions, semi-structured interviews and consultation meetings were held with pastoral elders and their council leaders to explore pastoral land rights problems, such as the various forms of land alienation that are currently taking place in the selected sites, the internal and external pressures confronting the pastoral land use systems, and adaptations and adjustments to cope with such pressures. Individual interviews and group discussions were further enriched and substantiated in an official consultation meeting with representatives of elders from all the districts in the *Borena* zone.

The questionnaire was administered with 400 households (300 in *Borena* and 100 in *Karrayu* area). The sites were systematically selected to represent pastoral land right concerns (e.g., conflict, privatization of rangeland, existence of ranching) and capture the diversity and dynamics within the system. The different production scenarios included were pure pastoral system, agro-pastoral system and urban commercial activities.

Sample households disaggregated into three wealth categories (rich, medium, and poor) identified based on the local indicators of wealth. Livestock asset ownership was the main indicator of wealth in all locations. In *Borena* a rich person is someone who owns 10 cattle or more and is engaged in urban commercial activities to diversify sources of livelihood. In *Karrayu*, ownership of 15-20 camels and some 30 heads of cattle makes a family wealthy. In most cases resource poor households constituted those who own no livestock at all or only 2-3 heads of animals.

The medium group falls anywhere between these two extreme ends.

Based on these criteria, key informants have stratified the residents of the selected *Kebeles*² into the three wealth categories. The list of residents was obtained from the *Kebele* archives. Based on the local indicators of wealth, the great majority (70%) of pastoral households have fallen under the resource poor category in both *Borena* and *Karrayu* sites while the rich and medium resource groups accounted for only 10 and 20%, respectively. A proportional random sampling procedure was followed to draw the required samples from sampling frame of households disaggregated by three wealth categories. About 15% of the total samples were female headed households in order to capture gender-based differences in access and use rights of environmental resources.

A focused questionnaire instrument was designed to capture the household livelihood strategies and the differential effects of land alienation across wealth categories. We hypothesized that the impact of land alienation on the household economy would vary depending on the household's wealth status, i.e., its livestock herd size. The survey data was subject to analysis using the SPSS model (Statistical Package for Social Sciences) for the comparison of means and frequencies across locations and wealth groups.

¹ A *woreda* is an administrative unit in Ethiopia equivalent to a district administration in other parts of the world.

² *Kebele* is the lowest administrative unit in the government structure in Ethiopia

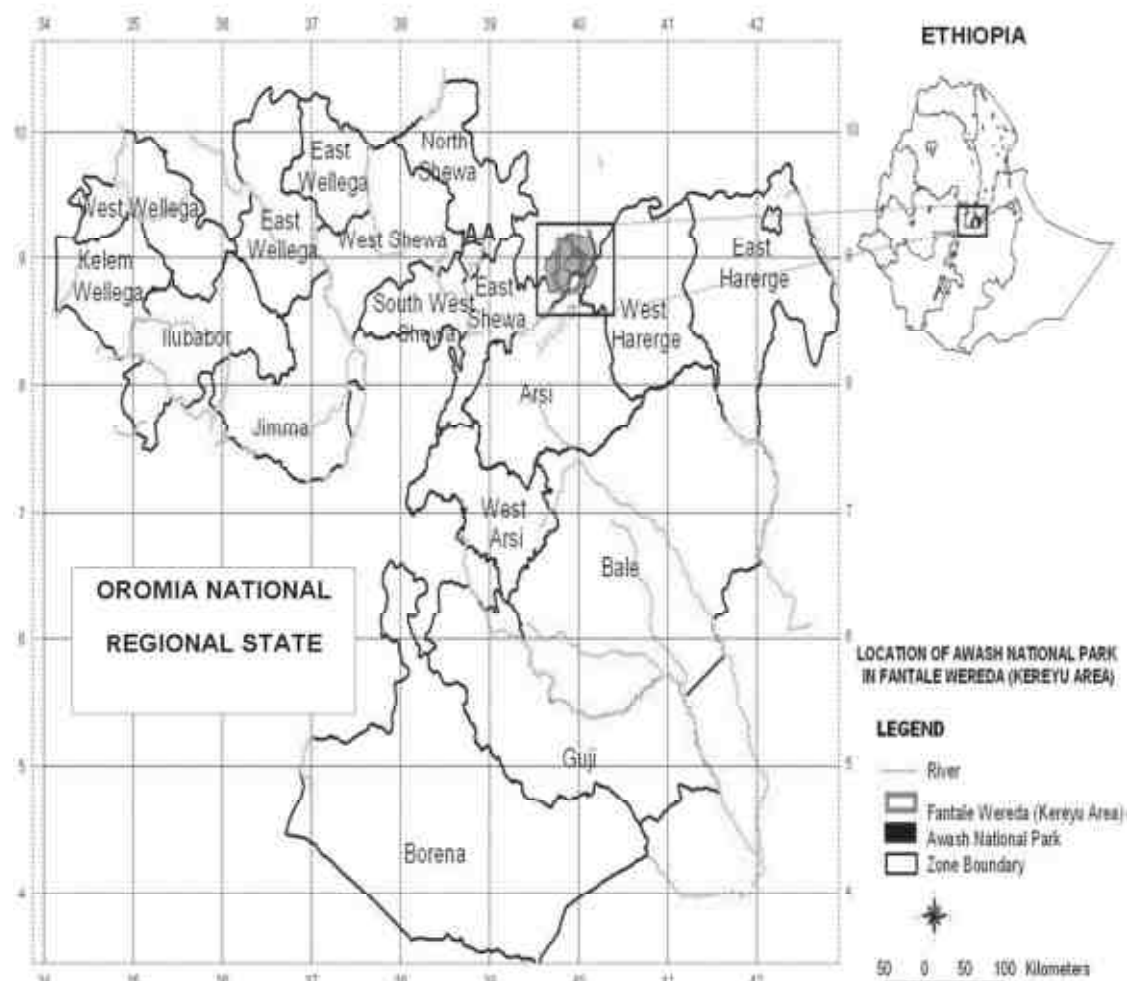


Figure 2. Location map of Borena and Karrayu in Oromiya Regional State

3. Results and discussion

3.1 Extent and forms of land alienation

The household survey revealed that 100% of the *Karrayu* and 79% of the *Borena* households have lost their grazing and watering resources to non-pastoral uses. The causes of this loss of land are many and complex, but the main ones include alienation by the state for commercial production, national parks and ranches for wildlife conservation; and border disputes involving tribal conflicts. There are many traditional grazing and watering resources that are no longer accessible to pastoralists (Table 2). More than 90% of respondents indicated that they have experienced some fundamental changes in their mobility and grazing patterns through losing their traditional migration sites. Land alienation and destitution are most severe among the *Karrayu* pastoralists. All households interviewed (100%) expressed bitterness and anger over the loss of grazing sites and water points to centrally-planned development schemes. The irrigation potential and the unique animal and plant biodiversity around the Awash River (AR) have attracted commercial agriculture and the establishment of wildlife conservation parks. In the sections below we outline in more detail some of the reasons for this resource loss.

3.2 Forms of land alienation

3.2.1 Ranches

In *Borena area*, 60% of the respondent households reported that they have lost their prime rangeland due to the establishment of private ranches. Today, there are about five big ranches in the *Borena* rangelands occupying about 33,000 ha of the rangeland (Table 3). This is contrary to the general perception that ranches have been abandoned in the *Borena* rangelands. The area represents some of the best grazing and watering resources in the rangelands.

The establishment of ranches on communal grazing lands has displaced pastoralists from their prime grazing lands. Most often, the areas allocated to private or group ranches were the best parts of the rangelands. The remaining areas were either too degraded or infested with encroaching weeds (see below). Loss of key grazing

and watering resources has exacerbated environmental degradation and weakened drought survival strategies on the remaining land.

The community, the original owners of the land, was not consulted when the land was illegally taken from them. Instead they are charged huge fees per head of cattle to be allowed access to the ranches in the event of extended drought. One pastoral elder near *Dambala Wachu* ranch expressed his anger and resentment as follows:

'We feel cheated and exploited that our land is given out to a few rich people, while we, and with birth rights to the land, are left displaced. It is shocking to know how feudalism is still alive in Borena.'

3.2.2 Commercial enterprises

Traditionally, the fertile floodplains of the Upper Awash Valley (UAV: Figure 2) 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 AR. 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.

However, 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.

The loss of water is most severe for the *Karrayus* as they have lost rights to access the AR. The sugar plantations are not willing to provide livestock corridors to the AR in case the animals damage the cane plantations. In order to compensate for the loss of access to the AR 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. The absence of proper waste disposal by the estate has been questioned on both practical and moral grounds (Ayalew 2001). This has triggered hostilities and conflict between the enterprise and the community. The community has expressed their grievances and resentment by disconnecting the safety valves of irrigation canals and grazing livestock over cane plantations, and sometimes by killing enterprise employees.

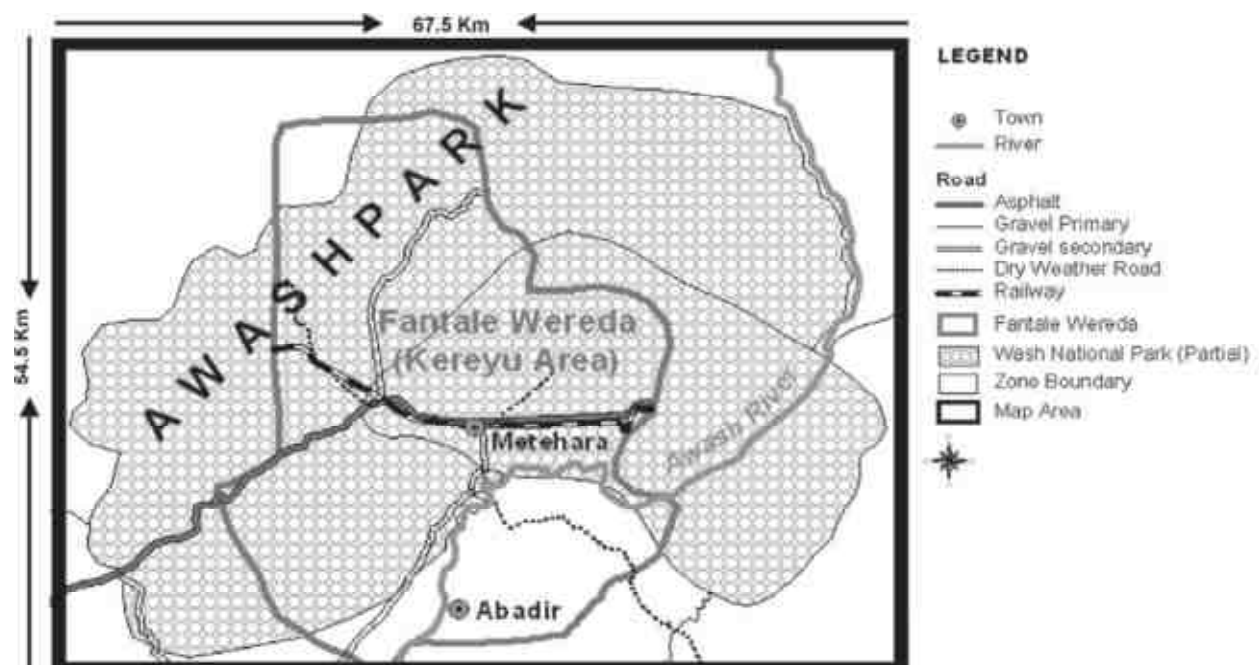


Figure 3 Map showing Awash River, Awash National Park and sugar enterprises established on prime grazing lands of *Karrayu* pastoralists

3.2.3 National park (*Karrayu*)

The Awash National Park (ANP) 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). It is not only the total area lost to commercial farming that is a serious problem for pastoral production,

but also the quality of those lost grazing resources. Furthermore, part of the eviction involved the destruction of sacred ritual places and funeral sites. Elders point to the fact that the sites between *Abadir* and *Nura Era* were where the *Karrayus* used to celebrate their annual *Gadda* ceremony².

The south-west part of the ANP area was inhabited by the *Karrayu* and the *Ittu Oromos* and the *Afar* inhabited the north-eastern part. These groups coexisted with each other and the wildlife for centuries, each group having its own territory for grazing and watering their livestock. The park was enclosed as a wildlife sanctuary in 1961 (to conserve the unique animal and plant biodiversity), but without properly understanding the needs and priorities of the pastoral communities. They have lost the major dry season grazing areas and access points to the Awash River water (locally called the *Melka*). This has triggered conflict among the pastoral groups and between pastoralists and the park administration (several households are still living within the park).

The park administration complains that the pastoral communities are troublemakers who threaten the protection of the park. But the core of the problem lies in the policies that tended to rely on land use segregation and forceful dispossession of land, ignoring the rights of the local communities. Local elders, on the other hand, argue that the park has failed to protect the ever dwindling wildlife under which pretext it has been pushing human inhabitants out of the area. They further say that before the establishment of the park, the wildlife coexisted with the livestock (Ayalew 2001). On this account, a *Karrayu* elder stated:

'We know how to rear cattle and how to live with the wildlife. Our cattle are more familiar with the Oryx than the cars of the government are to the Oryx. Our spears are less harmful than the guns of the government and the foreign hunters. We are forbidden to live in harmony with nature while hunters are allowed to kill the wildlife in our own land.'

This view prevails among all pastoral groups in the area (i.e. the *Karrayus*, the *Ittu* and the *Afars*), who have been trying to invade the park area since the 1984/85 drought. Conflict and animosity is mounting between the ANP administration and the community. The ever-increasing livestock density and human population on the already degraded rangeland outside the park has forced people and cattle to illegally encroach the park area for grazing/browsing, watering and settled cropping. Today, much of the park area, including the core wild animal reserve, has been converted into grazing land.

3.2.4. Inter-ethnic conflict

A significant number of pastoral households in *Borena* (35%) have indicated that boundary claims and ethnic conflict with the *Gabra/Gari* are a cause for the loss of access to prime grazing lands. The conflict has been intensified following the regional border demarcation and referendum in 2003. In the past, the two groups have entered into conflict with each other partly due to different land use strategies. Whereas the Somali groups moved as a family, the *Booran* land use by the *foora*-herd management is intermittent. When the *Borans* moved out of the wet season grazing areas (i.e. the south-eastern rangelands) and into the dry season rangelands, the Somali groups (*Gari* and *Gabra*) occupied the wet season rangelands, but resisting the return of the *Borans*.

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Through the 2003 referendum, the rangeland was given to the Somali ethnic groups and decided to be administered under Region 5. *Borans* have lost the whole of the eastern rangeland which accounts for about two-thirds of the *Borana* rangeland and with it some of the deepest known wells, namely, the *Goof* and *Lael* wells. To make the situation even worse, the *Borans* were denied access to the *Dawa* River water and the good pasture along the river bank, which was previously used as a major dry season grazing area. *Dawa* River water is believed to be a remedy for the infestation of ticks and lack of access to this water has meant heavy infestation of animals with ticks. In cows the infestation of teats has caused increased incidence of mastitis. The majority of cows have only one to three milk producing teats, which severely reduced the milk yields.

Among the *Karrayu*, border conflict with the *Afar* in the east and the *Argoba* tribes in the north has become a serious threat to *Karrayu* access to the eastern rangelands and the Awash River. Resource shortages and access rights are among the root causes of this conflict. There is constant conflict with the *Afar*, resulting in killing and looting of animals. Key informants in this study told us that about 200 cattle were looted from *Karrayu* herdsmen when they were herding their animals near the *Afar* border in May 2007. The case was presented to the heads of the respective regional states, as well as the Prime Minister's office, but has not yet been resolved.

Spontaneous clashes between the *Karrayu* and the *Argoba* tribes have been growing increasingly tense. Having lost their prime grazing lands (for reasons discussed above), the *Karrayus* are now being pushed into *Argoba* territory in the undulating hillsides of the *Bulga* River and the *Harolee* Plain. Traditionally, the *Karrayus* used to migrate to *Choppa* Mountain and the *Harolle* Plains during the wet season. The *Argoba* and *Karrayus* are now in

constant dispute over land rights; in recent years this conflict has developed into serious clashes with casualties on both sides.

The ORS through the Oromiya Pastoralist Development Commission (OPDC) plans to develop a large-scale irrigation scheme in the area, which has enticed the *Argoba* agro-pastoralists who have vested interest in this fertile flood plain. The result has been a furious fight between the *Karrayu* and the *Argoba* tribes. The fight escalated as the *Argobas* penetrated into *Karrayu* territory claiming land for settlement along the *Adama-Methara* highway. The *Argoba* agro-pastoralists are fighting for the pasture and water around *Haro Qarsa* and neighboring *Kebeles*. Recently, the *Argoba* settlers occupied a *Karrayu* village called *Korki* and set up a small town there, which exacerbated the conflict. The situation is tense and delegates from the *Amhara* and ORS are trying to resolve it.

3.3 Impact of land alienation on pastoral livelihoods

3.3.1 Loss of livestock assets

The most important kind of asset owned by the pastoralists is their livestock. The fact of being a pastoralist coincides with the fact of being owner and herder of livestock. However, the cumulative effect of the dramatic cut in the size of grazing lands and the loss of strategic pasture and water areas has already led to a severe decline in the size of the individual livestock holding and eventual destitution. In this study, it was found that the livestock herd size is not only declining over time but more importantly, a sizeable portion of the *Borena* (7%) and *Karrayu* (5%) households have owned no animals at all.

For purposes of illustration of the decline in livestock assets of households, comparison of cattle and camel ownership over time is given in Table 4. The data averaged for wealth categories shows that the number of animals owned by an individual household is only a tenth of what it was in the past. The survey data shows that some richer households in *Borena* used to own about 150 cattle, about 10 camels and a number of small stocks. In *Karaayu*, the livestock wealth was even higher with richer households owning over 400 cattle and 100 camels in the past. Even the poorest *Karrayu* family used to own 100 cattle and 35 camels. The average herd size in *Karrayu* today is 12 cattle and 16 camels only, which is a 90% decline in the cattle numbers and 80% decline in the camel numbers. It is not only the decline in livestock numbers but equally their productivity has diminished with deprivation and deterioration of the rangelands.

From this, we can observe the fact that pastoralists are worse off economically and hence, socio-politically today than in the past, particularly among the *Karrayus*. Many households had to sell their livestock assets to buy day-to-day necessities of life including food and medical needs. Such distress sale coupled with drought-induced loss explains the decrease in livestock asset of pastoral households. An example of this scenario comes from the case of *Jilo Huka* from *Dirre Woreda* of *Borena* (Box 1). The case shows the level of pastoral destitution and the transitory nature of livestock wealth.

Box 1. The case of *Jilo Huka*, an impoverished herder

Jilo Huka is a herder who lives in *Tadi Katello Kebelle* of *Dirre Woreda*. He is 65 and has got 5 children from two wives. Having owned over 400 heads of cattle, *Jilo Huka* was one of the richest pastoralists known in the *Borena* land. Over the years, the herd size diminished mainly due to drought and destitute sale to get basic necessities. The 1999/2000 and 202/2003 droughts were the worst droughts ever and wiped out almost all of his livestock wealth. Having lost his herd he tried an unsuccessful suicide attempt. But his son got mad and is now begging in the *Yabello* town. *Jillo Huka* is now hired as wage labourer to herd the animals of a fellow pastoralist, *Molu Tadi*, to earn a living.

3.3.2 Vulnerability to food insecurity and famine

In this study, we have found out that 85% of the *Borena* households and 93% of the *Karrayu* households face food insecurity irrespective of their socio-economic group. The majority of these households are in need of food for about five months a year. During these months, households had to subsist on selling their livestock assets and sometimes food aid programmes. The average food self-sufficiency period from their own production is only six months suggesting that even livestock rich households cannot subsist from their own production the whole year. Furthermore, about 15% of *Borena* and 20% of the *Karaayu* pastoralists are food insecure throughout the year. These are livestock poor households who also did not have alternative sources of income. These are households that are enlisted for food aid throughout the year, which signifies the seriousness of destitution among pastoral households in Ethiopia.

Food security for both pastoral households depends on the availability of milk, which again depends on the supply of adequate pasture and water for the cows. With the displacement of pastoralists from their prime grazing lands and the degradation of the remaining rangelands, animal production (mainly milk) has severely decreased leading to malnutrition and food insecurity.

Crop failure has become more frequent due to climatic shocks such as drought. Consequently, pastoral

households have been viable to chronic food insecurity and famine. Periodic drought or sub-normal rainfall is a characteristic of the lowland pastoral production systems. Even in climatically normal years, there are localized parts of the lowlands which suffer from drought. Many famines of various magnitude have affected the pastoralists, the most recent ones being the droughts of 1973/74, 1984/85, 1994-97, 1999/2000 and 2002/03. The famine of 2002/03 was one of the worst droughts in recent years, which has claimed thousands of animal and human lives in *Borena*, *Somali* and *Afar* regions that were hard hit. In some areas, about 80% of the entire animal population is estimated to be decimated (Yonis Berkele 2002).

But not all droughts cause famine. Famine implies a complete lack of access to food, feed and water for basic survival of people and cattle. In recent years, however, drought is translated into famine more frequently than before in pastoral areas. The droughts and accompanying famines were not entirely the result of rain failure and poor resource management. It can be argued that development induced land alienation and restriction of pastoral mobility is largely responsible for the drought and famine problems. In other words, to a large extent land alienation has weakened the capacity of pastoralists to cope with drought (through mobility) and exposed them to food insecurity and famine.

3.3.3 Environmental degradation

The impact of land alienation on the pastoral economy and fragile lowland ecology is rather dramatic (see Figure 3). The gradual curtailment of seasonal migration between wet and dry season grazing areas coupled with increasing livestock and human population has created pressure on the already fragile ecology due to overgrazing. Due to expropriation of dry season grazing and watering areas, the wet season grazing areas are continuously grazed throughout the year leading to severe degradation which is manifested in terms of loss of vegetation cover and soil erosion. Soil erosion has become a serious problem in areas that are exposed to constant trampling by animals which destroys the soil structures and aggravates water runoff. In *Borena*, soil erosion is severe around *Surupa* and *Fichawa* areas with the formation of gullies in many places. The result is lack of adequate pasture and decline in animal productivity. Regarding the level of land degradation in *Karrayu*, Ayalew (2001) notes the following quoting a pastoral elder:

“A point was reached where the area could no longer grow any vegetation, even if there had been abundant rainfall throughout the year. In the past we regulated the grazing intensities through seasonal migration that allowed the vegetation and the environment to rest and recover.”

Bush encroachment is another feature of range degradation, which is characterized by the invasion of undesirable woody species and unpalatable fobs and loss of grass layer. Bush encroachment is prominent in rangelands where grazing pressure is high. Estimates show that about 50% of the *Borana* rangeland is covered by unwanted bushes, mainly *Commiphora africana* (Gufu Oba 1998). It is believed that this species spread rapidly following the ban on the use of fire and due to seed dispersal through camel and goat dung. Traditionally, pastoralists use fire (i.e., rotational burning of the range) as a tool for range management to control undesirable plant species. Burning removes moribund grass, renews the pasture and reduces tree saplings. Following the official banning of fire, the woodlands have thickened, with tree regeneration out-competing the herbaceous layer.



Figure 3 an overview of the extent of land degradation in the Borena rangelands. Picture, E.Elias

4. Summary and Conclusion

Concerning the major question posed in the introduction and the hypothesis formulated, the study provides strong evidence to support the argument that land alienation is the root cause for much of the problems detected in the pastoral areas today such as environmental degradation, food insecurity, drought vulnerability and ultimate destitution. Policy misperceptions and knowledge gaps that have had significant influence on the policy thinking and planning have been highlighted. These problems include environmental degradation, food insecurity, drought vulnerability and ultimately destitution. At the root of these problems lies the fact that policy tends to be biased against pastoralism in favour of alternative economic activities such as commercial agriculture, wildlife conservation parks and modern ranches.

One could ask whether pastoralism will cease as a way of life. It is evident that the system is under a process of transformation as more and more people shift towards farming and diversification of economic activities outside pastoral production. The integration of marketing into the livestock economy is an important aspect in this process. The cases from *Borena* show that pastoral engagement in urban commercial activities is an important route for livelihood diversification and positive transformation of the system (Box 2). Such trends need to be properly understood, and indeed supported and scaled up so that pastoralists can be integrated into the market economy.

The study concludes that support is needed to scale up pastoralists' efforts to diversify their livelihoods. In this regard, recognition of group user rights is important since pastoral land rights are communal rights. The land policy discourse in Ethiopia, however, does not consider common property systems, preferring to deal with simple concepts of individual or state property (see Eyasu and Trench 2000 and Helland 2006). This cannot provide solutions for pastoral resource management. Therefore, it is essential to legitimize common property systems through land tenure legislation. This allows a broad spectrum of management alternatives, from the transfer of management responsibility to communities to joint management by the state and the community. Proper understanding of the ecology of the traditional pastoral production system and the complex customary arrangements for resource management is necessary to formulate appropriate land policies that secure the environmental rights of the pastoralists.

End notes:

Note i. A woreda is an administrative unit in Ethiopia equivalent to a district administration in other parts of the world.

Note ii. Kebele is the lowest administrative unit in the government structure in Ethiopia

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Table 1: Characteristics farming system types the selected study sites in Borena and Karaayu

Study sites	Farming system
<i>Diid Yabello</i>	Dominantly agro-pastoralist but highly affected by ranches and expansion of farm plots
<i>Surupa</i>	Commercial urban activities combined with farming but highly affected by ranches and conflict with the Guji Oromos
<i>Wachille</i>	Pure pastoralist zone but privatization by enclosing the communal rangelands is becoming a major cause of concern
<i>Bulbul</i>	Agro-pastoralist zone affected by the expansion of private closures
<i>Gidara</i>	Dominantly pastoralist and affected by the sugar plantations (<i>Nura Era</i> farm)
<i>Faate Leedi</i>	Agro-pastoralist highly affected and displaced by the sugar factory and the <i>Awash</i> Park
<i>Tututi</i>	Agro-pastoralist zone highly affected by land alienation by the state farms, conflict with <i>Argoba</i> tribe and Lake <i>Basaka</i> expansion problems
<i>Haro Qarsa</i>	The only pure pastoralist community in <i>Karaayu</i> but seriously affected by the <i>Awash</i> park and conflict with the <i>Arogoba</i> ethnic groups
<i>Banti Mogassa</i>	Pure pastoral system but displacements due to the ANP and conflict with the Afar group are major environmental concerns.

Table 2. Some examples of the grazing and water resources alienated from pastoral use in Borena and Karrayu.

Location	Grazing site no more used	Watering point no more used	Causes for resource alienation
<i>Diid Yabello</i>	<i>Chalalaka</i> (dry season), <i>Adona</i> (wet season) sites	<i>Modi Sooro</i> , <i>Buyii</i> , <i>Ariste</i> , <i>Hardimitu</i> and <i>Arboji</i> ponds	<i>Tuura</i> state and <i>Surupa</i> private ranches and conflict with the <i>Gabra</i> group
<i>Surupa</i>	<i>Diid Tuura</i> , and <i>Diid Hara</i> wet season grazing sites	<i>Harbor</i> and <i>Ariste</i> ponds	<i>Tuura</i> state and <i>Surupa</i> private ranches and conflict with <i>Guji</i> Oromos
<i>Wachille</i>	<i>Woyama</i> (wet season), <i>Udet-Dawa</i> (dry season) sites	<i>Dawa</i> River water and <i>Goof Leéal</i> and <i>Udet</i> Wells	Border demarcation and conflict with the Somali tribes
<i>Gidara</i>	<i>Merti</i> plain (dry season grazing site)	AR water	<i>Merti</i> State farm
<i>Fate Leedi</i>	<i>Merti</i> plain and park area	AR water	<i>Merti</i> State farm and ANP
<i>Tututi and Haro Qarsa</i>	<i>Choppa</i> mountain (wet season grazing site) <i>Harolle</i> plain (dry season grazing site)	Surface ponds and AR water	Conflict with the <i>Argoba</i> tribe and expansion of the salty <i>Basake</i> Lake
<i>Banti Mogasa</i>	<i>Illala Sala</i> plain	Ponds and wells in the Park area	ANP and Conflict with the Afar

Table 3. Major ranches operational in the Borena rangelands

Name of the ranch	Woreda	Area (ha)	Ownership, Purpose and management
<i>Diid Tuura</i> state ranch	<i>Yabello</i>	5,550	State owned and established for conservation of <i>Borena</i> breeds and production of heifers for the national breeding programmes
<i>Surupa</i> private ranch	<i>Yabello</i>	4,467	Privately owned ranch used for animal fattening for live export and domestic markets and Abattoir
<i>Diid Liben</i> private ranch	<i>Liben</i>	1,058	Privately owned for animal fattening for live export and domestic market
<i>Damballa Wachu</i> cooperative ranch	<i>Dirre</i>	15,000	Group ranch used for animal fattening by members only; the community is excluded
<i>Sarite</i> community ranch	<i>Teltele</i>	7,750	Community managed and used as fodder reserve for the dry season
Total		33,805	

Table4. Trends in household livestock ownership in Borena and Karrayu

Location/ Wealth group	Mean livestock numbers in the past (30 years ago)		Mean livestock numbers at present	
	Cattle (No)	Camel (No)	Cattle (No)	Camel (No)
<i>Borena</i>				
Rich	94	12	74	12
Medium	39	9	23	6
Poor	22	10	6	3
Mean	30	11	12	5
<i>Karrayu</i>				
Rich	176	111	36	30
Medium	108	79	19	23
Poor	109	35	6	5
Mean	133	79	12	16

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