

Food Security Situation in the Pastoral Areas of Ethiopia

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1. Food Security and Livelihoods

According to the World Food Summit plan of action of 1996, *food security* is generally defined as “ all people, at all times, have physical and economic access to sufficient safe and nutritious food for a healthy and active life”.

The two major elements/components of food security are availability and accessibility. Availability refers to the quantity and quality of food at any given time in the form of local production through agriculture, fishing, animal husbandry, wild foods (fruits and hunting) as well as imports and exports through the market system. Availability of food is highly correlated to the following factors:

- Natural factors such as change in climate affecting both crops and livestock.
- Displacement caused by conflict, affecting production.
- Widespread illness, such as malaria and HIV/AIDS, affecting labour capacity.
- Disruption of market dynamics.
- Government policy either favouring or affecting food security.

Accessibility refers to entitlement of food primarily through production, purchase, trade, exchange, and claims. It is influenced by market factors and the price of food as well as by purchasing power related to livelihood situation.

Livelihoods are a means of making a living. They comprise ways in which people access and mobilise resources which enable them to pursue goals necessary for their survival and long-term well being. Livelihoods are affected by natural, policy, social, economic, physical, and human factors.

At times when an individual, household, or community is unable to avail and access food for the above mentioned reasons then the situation could be described as a state of *food*

insecurity. Food insecurity is also an underlying cause of malnutrition and in extreme cases results in mortality. A high degree of food insecurity when compounded with other undesirable factors can threaten livelihoods. High risks of food insecurity and livelihoods can be expressed in terms of malnutrition, morbidity, and in extreme cases mortality.

Malnutrition is a high degree of manifestation of food insecurity. The causes can be immediate or underlying. The two immediate causes are related to inadequate food intake, expressed by low quality and quantity diets, and disease that can reduce appetite, absorption, and loss of nutrients from the body. The other major underlying causes of malnutrition are related to the household food situation, the health environment, and the care and social environment. The household food situation refers to meeting the food requirement through different food and income sources. These include own production, purchase from markets, trading, gifts, and wild foods, as well as illegal means such as theft. The health environment refers to access to health services, clean water supply, sanitation, and housing. Caring behavior in the family, including childcare and allocation of food in the family, and political and social networks in the community also contribute to the care and social environments.

2. Food Security Status of Pastoral Areas/Communities

The Ethiopian pastoral areas are estimated to occupy about 61-65% of the total area of the country and are home to 12-13% of the total population. In addition, out of the total estimated livestock population of the country, the pastoral areas constitute approximately 30% of the cattle, 52% of the sheep, 45% of the goats, and 100% of the camels (MOA, 2000). However, recent livestock population estimates obtained from the pastoral areas raise these figures to 49% of the cattle, 47.5% of the sheep, 51.5% of the goats, 100% of the camels and 12.9 % of the equines.

Livestock in the pastoral areas are the major source of food (milk and meat) and income, as well as a source of employment. They also serve similar purposes and functions for people living in urban and rural towns adjacent to the pastoral areas. Livestock contribute a significant amount to the national economy. In terms of gross national product, the contribution of livestock to the agriculture sector and the national economy is 40% and more than 20% respectively.

However, the pastoral production system and in particular the food security and livelihood situation is highly threatened because of different man-made and natural risks. Some of the major risks and challenges the pastoral communities in the country are facing include: i) expansion of sedentary agriculture; ii) expansion of agricultural projects; iii) expansion of national parks inside the rangeland; iv) emergence and expansion of agro-pastoralism; v) encroachment of unwanted plant species; vi) conflict over rangeland resources; and vii) recurrent drought.

2.1 Expansion of sedentary agriculture

The lower limit where sedentary agriculture is not viable and the upper limit for the start of the rangeland areas are the escarpments receiving 500-700 mm of annual rain. These areas are considered marginal for rain-fed agriculture. However, due to various reasons including population pressure the rangelands are being encroached by sedentary agriculturalists, mainly crop cultivators. This has been the case in the different pastoral regions including the Afar, Somali, South Omo of SNNPRS, the Borena zone of Oromia Region, Gambela, Ben- Shangul and Gumz. A large part of the rangelands considered to be prime grazing land has been under constant pressure and threat from the adjacent highland agriculturists bordering the rangelands.

2. 2 Expansion of agricultural projects

Another problem that threatens traditional pastoral territory with that of sedentary agriculture is the constant expansion of agricultural projects. Since the last 50 years the Afar Region has lost close to 50-60,000 hectares of dry-season grazing area along the Awash River to various plantation projects. Similarly, the Keryu lost about 22,000 hectares for the Methara sugar estate. Specific examples that can be cited in Somali region include the Gode irrigation project with a potential of 27,000 hectares, and the Chinagsen, Serge, Elbaye and Biye dams with a potential of irrigating about 1000 hectares. In Afar, besides the existing irrigable land, an additional study has been conducted to use the rivers of Ewa and Awra for irrigation purposes. In South Omo (SNNPRS) the emergence of large-scale commercial irrigated agriculture using the rivers of Omo and Woyto could also have the same effect.

Construction of the Alwero dam with a potential of irrigating 10,000 hectares (MOWRD, 1999) of grazing land and a study to undertake similar irrigated agriculture using the rivers of Bonga and Itang could have a sizeable impact on the rangeland resources in Gambela region.

Besides their effect on existing traditional pastoral rangeland territories, the expansion of sedentary agriculture and large-scale projects can have a significant impact on the downstream users, especially in areas where irrigated agriculture using dams is practised. In all the above cases, at national level a sizable area has been converted and put into crop cultivation. According to the most recent land use/cover of the different pastoral Regions, the area categorised or converted to crop agriculture has shown a dramatic increase. These include 178,000 hectares (CEDEP, 1999) in the Afar Region, 390,000 hectares (Regional BoA, 1999) in the Somali Region, 1,332,900 hectares (Zonal DOAs) in the Borena Zone of Oromia Region, 58,503 hectares (SNNPRS, 2000) in South Omo of SNNPR, 32,452 hectares (Socio-economic Study of Gambela Region, 1996) in Gambella Region, and 38,717 hectares (WARDIS, 1998) in Benshangul Gumz Region. Using crude estimates, the total area of the rangelands that are in the process of being converted to crop agriculture could be approximately 1.9 million hectares.

2.3 Expansion of wildlife parks and sanctuaries in the rangelands

The reduction of the traditional pastoral territories and their conversion into wildlife parks and sanctuaries has greatly affected rangeland resources. Once the parks and sanctuaries are established the pastoralists are not allowed to graze and water their livestock at any time of the year, even during the dry period when feed shortage is critical. Moreover, the pastoralists, who are the traditional owners, do not receive or share any benefit from tourism. The traditional rangeland resources that have been converted into parks and sanctuaries are shown in table 1.

Table 1. Wildlife parks and sanctuaries in the rangelands area of Ethiopia

	Region	Area (ha)
I	Afar	
1.1	Awash National Park	7560
1.2	Yangudirassa national Park	47310
1.3	Alaidege Wildlife Reserve	18320
1.4	West Awash Wildlife Reserve	17810
1.5	Gewane Wildlife Reserve	24390
1.6	Mille Serdo wildlife Reserve	87660
1.7	Gewane Controlled Hunting Area	59320
1.8	West Awash Controlled Hunting Area	91360
	Sub-total	<u>353,730</u>
II	Southern Nations Nationalities and Peoples Region	
2.1	Omo National park	40680
2.2	Mago National park	21620
	Sub-total	<u>62,300</u>
II	Gambella	
3.1	Gambella National Park	50,610
	Sub-total	<u>50,610</u>
	Total	<u>466,640</u>

Source: EWCO, 1993

As shown in the table, a total of 353,730 hectares in Afar, 62,300 in SNNPR, and 50,610 in Gambella Regions, making a total of 466,640 hectares of range areas, have been converted to wildlife parks and sanctuaries.

2.4 Emergence and expansion of agro-pastoralism

Similar to other countries in the Horn of Africa, agro-pastoralism in Ethiopia has been spreading into purely pastoral rangelands as people have increasingly adapted to farming over the last few hundred years, particularly the last 100 years (Halt, 1989). Farming could be

considered both a response to food insecurity as well as an economic diversification (Gufu Oba, 1998). Therefore, agro-pastoralism could be taken as a form of farming system combining both livestock and crop production. The emergence of agro-pastoralism could be partly associated with the decline in range resources as well as decrease in both livestock numbers and productivity. This compounded situation may have forced pastoralist to resort to agro-pastoralism

According to an ILCA study (1984), there was little cultivation in the former Eastern Hararghe until the 1940s. In the 1970s, about 10% of the area was converted to crop cultivation. According to CEDEP (1999), 127,000 hectares (out of 339,688) in Teferi ber (Awbere) and 220, 000 hectares (out of 619,940) in Kebribeyah have been converted to crop cultivation. In both woreda the areas converted to crop farming range between 36-38% of the total available land. In addition, a survey conducted in the Ogaden area by Save The Children UK indicated that about 32% of the rural people in the area have become agro-pastoralists

In the Borena zone the practice of agro-pastoralism reached its peak during 1993-1994 and the 1995 drought in which most of the Boran lost their livestock. Currently, it is estimated that 2-3.4% of the lowlands of Borana zone is considered to be under cultivation (Gofu Oba, 1998). However, according to the current land use/cover of the zonal agricultural department, the land under cultivation is estimated to be as high as 14% of the total area.

The situation and trend is more or less similar in other Regions where the emergence of agro-pastoralism is evident. In the Afar Region, besides the commercialised irrigated crop agriculture, the Afar were and are engaged in both livestock and crop agriculture. With the assistance from the former North East Rangeland Unit (NERDU) and the current crop extension package coordinated by the Regional Bureau of Agriculture, over 3,700 hectares of land have been converted into crop cultivation, both rain-fed and irrigated (Regional BOA, 1999).

According to the respective regional and zonal agricultural offices (1999) the following data has been collected. In Gambella Region an estimated area of 32,452 hectares have been used to grow annual crops, mainly cereals. In the same Region, particularly in the Jikow woreda, which is primarily dominated by Nuer pastoralists, crop cultivation has reached about 1400 hectares (Socio-Economic study of Gambela, 1996). In Benshangul-Gumz the area

under cultivation is estimated at 38,718 hectares and in South Omo (SNNPRS) the estimate reaches 58,503 hectares (2.54% of the total area in the zone).

Indigenous pastoral/agro-pastoral communities are not the only ones that practise cultivation of marginal crop areas. Refugees crossing the borders and temporarily settled in refugee camps are also engaged in crop cultivation. Though the size of cropland cultivated per household is relatively small (since refugees are not officially allowed to cultivate areas other than the plot allocated in their homestead) the refugees' and returnees' involvement in crop cultivation is increasing rapidly.

Based on a CEDEP (1999) survey, the number of households involved in crop production in Kebribeyah woreda of Somali Region since the beginning of 1990 has reached 54%, while that of Teferiber woreda (Teferiber and Derwenaji) refugee settlement ranges from 15 to 20%. Similar results by CEDEP (1999) in Western Ethiopia, namely Gambella and Benshangul Gumz Regions, indicate that in the Pungido and Dima refugee settlements (GNRS) almost half the refugee population is engaged in crop cultivation. Similarly, in Sherkole refugee settlement, Benshangul-Gumz, about 10% of the refugee population is actively engaged in crop cultivation.

2.5 Encroachment of unwanted plant species

Encroachment of unwanted plant species has been considered a menace to the deterioration and decline of the pastoral rangeland. Though the degree may vary, evidence of this situation can be observed in most of the pastoral Regions. According to different sources (Gufu Oba, 1998) encroachment of woody bush species was aggravated in Borana rangeland after the 1960s and worsened following a ban on the use of fire. In the absence of fire, which pastoralists were practising on a regular basis, grassland are invaded by bushes, reducing grass cover and creating the deficiency of feed source for livestock.

Coppock (1994) reported that about 15 woody plant species are considered encroachers in the Borena rangelands. The rangelands of Arero, Moyale and Liben woredas have a relatively higher proportion of bush coverage. Major bush species in the rangelands include *Comiphora africana*, *Acacia brevispica*, *A. nilotica*, *A. drepanolobium*, *A. bussei* and *A. horida*. Among the different bushes rapid expansion of *Acacia drepanolobium* has been the most alarming. An

estimate by ILCA (1993) put the area under bush encroachment in the Borena rangelands at about 40%, while the remaining 10.5% of the total rangeland is considered to be in excellent condition (Gufu Oba, 1998) and is reserved for calves.

There are no accurate data as to the area and amount of unwanted plant species in the Afar Region. However, rapid expansion of *Acacia seyal*, *A. melifera* and *A. senegal* in the administrative zones of four and five as well as *Prosopis juliflora* in zones three and one is of a prime concern to the Region. Moreover, *Prosopis juliflora*, which was introduced as a drought livestock supplement feed and for soil conservation, is aggressively claiming prime irrigable cropland and rangelands adjacent to irrigated farms and water points estimated to occupy over 20,000 hectares (personal communication, FARM Africa staff in zone three of Afar region).

In the Somali Region, the expansion of parthenium, a weedy plant species commonly known as congress grass, is rapidly encroaching into both rangeland and crop farms. Besides reducing the size of the range resources, this rapid expansion has had a negative effect on the composition and consumption of milk (from goat, cow and camels), causing a bitter taste in the milk produced. In some instances, pastoralists have abandoned consuming milk produced by animals fed on congress grass.

2.6 Conflict over rangeland resources

Inter-clan and intra-clan conflict causes loss of human life, loss of livestock, destruction of property, and further decline in rangeland resources. Intra-clan conflict usually lasts for a short period of time and is often solved through traditional social organisations. This usually happens within the big clans in the different pastoral Regions, including the Afar, Somali, Borena, the Nuer, and the different major clans in South Omo.

On the contrary, inter-clan conflict between two major pastoral clans has far greater consequences on property, lives, and resources. For example, the Afar and Issa are considered to be traditional enemies. As a result, use of the Halidege plain (zone 3 of Afar Region), which covers over 75,000 hectares of good grazing land, has reduced; it is currently considered a buffer zone for most of the year. Similar conflict occurs between the Borena and Somali, between the pastoral groups of Southern Omo, the Nuer, and other major clans.

2.7 Declining per capita livestock holding

Even though there are no quantitative and updated data on livestock population in the pastoral areas, the population tends to decline with shrinkage and degradation of the range resources and frequency of recurrent drought. This agrees with the results collected from the different woredas of the Afar, Somali, Oromia, and Gambela Regions. According to those results, the livestock population, in particular the cattle population, has been the most affected and the number has decreased, affecting per capita livestock holding. As a result, the livestock composition has altered to favour mainly goats, camels, and donkeys. Generally, there is a shift in vegetation composition from natural pasture to shrubs and bushes, with a corresponding shift in livestock composition from grazers to browsers.

Even though there are no actual backdated figures for comparison, per capita livestock holding is much lower, compared with the last 20-30 years. A similar study by Donaldson (1986) in the Borena zone indicated that the herd size from five encampments reduced by 30% between November 1983 and March 1985 due to drought. During bad drought years, losses among the poorest families can escalate up to 90%. Similarly in 2000, in Borena Zone of Oromia Region, a drought assessment team of the Southern Rangeland Development Unit (SORDU) and NGOs (2000) operating in the area estimated cattle mortality to be 28% in Yavello, 13% in Dire, and 14% in Teltele and Arero woredas.

Similar reports from the Somali Region indicated that the livestock mortality rate following the 1999/2000 drought ranged between 5-12% for camel, 30-80% for cattle, 30-60% for sheep, and 20-30% for goats in Gode, Afar, Qorahe and Warder zones (South East Rangeland Project, 2000). In South Omo, in the same year, the Agricultural Department reported estimates of mortality to be 80% and 25-30% in Hamer Buna and Kuraz woredas respectively. During the recent 2002-03 drought in Afar Region livestock mortality, particularly cattle, was estimated to be over 50%. From the above figures, it can be inferred that livestock mortality due to drought has a direct impact on declining per capita livestock holdings as well as per capita production and consumption.

2.8 Livestock health problems

Livestock disease is a major constraint to livestock production and a cause of food insecurity among pastoral communities. The wide prevalence of diseases such as rinderpest, Contagious Bovine Pleuropneumonia (CBPP), Contagious Caprine Pleuropneumonia (CCPP), and trypanosomosis results in high rates of morbidity and mortality. Livestock diseases coupled with nutritional stress account for 22% of calf mortality even in average rainfall years. Teat damage caused by tick bites has an important effect on milk production. Inspection of 560 randomly selected cows from 63 herds in four madda (villages) showed that 291 out of 2240 teats (13%) were badly damaged (Coppock, 1990).

During drought, certain diseases become critical in cattle. Shortage of pasture may force grazers such as cattle and equines to graze close to the ground, which may affect the mouth, teeth, and throat. This may further allow the passage of some diseases to the digestive system causing irritation and sickness. After cattle, sheep and goats are the second most important animals used as a source of food and income. A study conducted at Beke, Borena zone, between 1983-85 diagnosed CCPP as a major cause of mortality in 13% of sheep and goats (Coppock 1990).

Tsetse flies occupy between 135,000 and 220,000 km² in the west and south-west of the country, which represents 12-20% of the country's potential agricultural area (Slingenbergh, 1992). As a result of trypanosomosis, about 10 million head of cattle (one-third of the total livestock population of the country) are at risk. Trypanosomosis is also one possible cause of camel mortality; camels are the major sources of transportation, milk, and meat for the pastoralists of Afar, Somali and partly Borena.

As discussed in the above sections, degradation and shrinkage of the traditional pastoral territory, coupled with climatic change manifested by shortage of rainfall and recurrent drought, and compounded by limited policy support, has made pastoral communities in the country food insecure to the extent of threatening their livelihoods and making them dependent on relief handouts.

According to the joint government and UN appeal of 2003, a total of 204,115 (18% of the total population) in Afar and 360,000 (10% of the total population in Somali region) were considered chronically drought affected and food insecure. According to the appeal these people required not only food assistance but also other basic services, including water, health, agriculture, and capacity building.

Table 2. Food & non-food requirements for chronically drought-affected populations of Afar & Somali Regions.

Region	Total population	Chronically affected	Food (MT)	Water (USD)	Health & nutrition (USD)	Agri. (USD)		Capacity building (USD)
						Vet.	Feed	
Afar (A)	1,215,255	204,115(18)	24,404	452,543	180,120	73,243	1,182,965	1,123,786
Somali (S)	3,600,000	360,000(10)	39,078	219,579	396,141	23,381	327,926	561,893

Source: For chronically drought-affected populations, Afar and Somali Regional States, Second Five-Year Development, Peace and Democracy Programme, 2000/2001. Food and non-food requirements are extracted and extrapolated from Emergency Assistance Requirements & Implementation Options for 2003, a joint Government-UN Appeal.

3. Vulnerability of Pastoral Communities to Food Insecurity

Given the challenges and constraints outlined above, pastoral communities are highly vulnerable to food insecurity. Vulnerability to food insecurity is aggravated 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. Internal capacities to cope refer to peoples' capacities to cope with the shock, and depend on factors such as social networks, assets, and political status. Based on the above scenario, pastoral communities are currently vulnerable to food insecurity even with the slightest external shock.

The coping strategies pastoral communities have accumulated and practised through their indigenous institutions for generations (indigenous knowledge and resource

management) have been eroded due to several factors. Erosion of the safe coping strategies leaves only irreversible and risky survival strategies; their practice makes households even more vulnerable.

A food crisis is defined as unusual and severe food insecurity that threatens peoples' lives/livelihoods. It will depend on the underlying vulnerability of the affected population, the intensity and nature of the external shock, the duration of the crisis, the coping capacity of the population, and the response of government and humanitarian agencies.

4. Why Address Food Security Issues in Pastoral Areas?

Food security assessments in pastoral regions/areas of the country may result in the following responses:

- Provision of direct food needs/assistance to the population affected by the emergency;
- Livelihoods support to the population affected by the emergency;
- Capacity building support to partner institutions in their efforts to support the affected population;
- Advocacy to promote timely response by other actors including the government, NGOs, UN bodies, and donors.

5. Food Security Assessment

All food security assessments should have clearly defined objectives and cover assessment (before the onset of the programme), design and planning (throughout the programme), and monitoring and evaluation (throughout the programme and towards its end).

There are four types of food security assessments: i) initial assessment; ii) rapid assessment; iii) in-depth assessment; and iv) nutritional survey.

5.1 Initial assessment: this is expected to take 2-5 days and use existing information and knowledge to determine the need for further investigation or potential intervention.

The main objectives of the assessment are to analyse the causes, status, and trend of food insecurity.

5.2 Rapid assessment/multi-sectoral: this assessment may take between 5 and 21 days. It involves fieldwork in the affected area to determine the need for an immediate emergency response. The objective is to collect new data/information to fill gaps, identify priorities, and verify information. The assessment is done jointly with multi-sectoral staff involving public health, programme managers, logistics, and finance staff.

5.3 In depth assessment: this may take between 3 and 6 weeks and is carried out by a food and nutrition specialist to support decisions about long-term programmes. The objectives of the assessment are to carry out a comprehensive food security analysis of all affected livelihood groups and identify appropriate interventions both at programme and advocacy levels.

5.4 Nutritional survey: this may last between 3 and 6 weeks. The survey provides representative information on the nutritional status of a sample of the affected population. An experienced nutritionist using statistical packages should carry out the survey. Its primary objective is to determine the prevalence and extent of malnutrition and its effect on the sample community, and to design appropriate interventions to address malnutrition and its underlying causes.

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