

Traditional coping strategies of pastoralists in response to drought. A case study in Afar and Borana, Ethiopia

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Resumen / Abstract / Résumé

Trabajo de campo fue realizado para estudiar las estrategias para enfrentar la sequía por comunidades pastoriles de Afar y Borana, Etiopía. La información fue recabada mediante entrevistas individuales y discusiones semiestructuradas grupales con gente local en ambas áreas de estudio. La gente de Afar sostiene su producción mediante instituciones indígenas llamadas Medaa y Adaa. Medaa es el nivel comunitario de mayor jerarquía para la toma de decisiones que aborda los aspectos de resolución de conflictos, manejo de recursos naturales, asistencia mutua (Titihatia), relaciones externas y situaciones de emergencia (sequías). Adaa es el mecanismo cultural que implementa las reglas establecidas por el Medaa. El sistema Geda administra los dos grupos. Bajo el Abba Geda (jefe) existen diferentes consejeros y líderes comunitarios, algunos son para los rituales, seguridad social, disputas y casamientos y manejo de agua. Las tierras de pastores, recursos hídricos y la movilidad en periodos normales o de desastre son gobernados por el sistema Geda. UAM, ©2004

Palabras clave:
pastores
sequía
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Etiopía

A field study of traditional coping strategies of drought was conducted in pastoral communities of Afar and Borana. Information was collected from the local people in both the study areas through interviewing knowledgeable individuals and semi-structured group discussions. The Afars sustained their production system through the indigenous institutions Medaa and Adaa. The Medaa is the highest decision making body encompassing issues such as conflict resolution, natural resource management, mutual assistance (Titihatia), external relationships and emergency situations (drought). Adaa is the cultural mechanism that implements the rules set by the Medaa. The Geda system administers the two groups. Under the Abba Geda (chief) there are different councilors and village leaders. Some of the councilors are for rituals, for social security, for disputes and marriage and for water management. Grazing lands, water resources and mobility in normal or in periods of disaster are governed by the Geda system.

Key words:
pastoralists
drought
coping strategies
Ethiopia

Le travail de terrain décrit dans ce texte a été réalisé pour étudier les stratégies qui permettraient d'affronter la sécheresse, de la part des communautés pastorales d'Afar et de Borana, en Ethiopie. L'information provient d'entretiens individuels et de discussions semi-structurées en groupe, avec les habitants de ces deux zones d'étude. Les personnes d'Afar maintiennent leur production moyennant des institutions indigènes appelées Medaa et Adaa. Medaa correspond au niveau communautaire de plus grande hiérarchie pour la prise de décisions. Il aborde les aspects de résolution de conflits, gestion des ressources naturelles, assistance mutuelle (Titihatia), relation avec l'extérieur et situations d'urgence (sécheresses). Adaa est le mécanisme culturel qui impulse les règles établies par le Medaa. Le système Geda administre les deux groupes. Au-dessous du Abba Geda (chef), il existe différents conseillers et leaders communautaires, entre autres pour les rituels, la sécurité sociale, les disputes et mariages et la gestion de l'eau. Les terres de pâture, les ressources hydriques et la mobilité sont gouvernées par le Geda.

Mots-clés:
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Introduction

Pastoral communities constitute roughly 10% of the Ethiopian population inhabiting mainly the peripheral areas of the country. The main pastoral communities are the Somali (53%), Afar (29%) and Borana (10%) living in the Southeast, Northeastern and Southern parts of Ethiopia respectively and the balance (8%) are found in Southern Gambella and Benshangul regions (Sandford and Habtu, 2000). The Afar and Borana together consist of 39% of the pastoral population of Ethiopia. The large majority of the people living in Afar and Borana areas of Ethiopia are pastoralists, deriving their income and sustenance mainly from rearing livestock. The lowlands of Ethiopia including Afar and Borana are sources of livestock for export, and have significant role in the national economy. Pastoralism is a way of life, which is well suited to the arid and semi-arid parts of Africa. Their adaptation to a marginal and unpredictable environment has made living in the drylands possible. There are, however, aspects of pastoral adaptation that are difficult.

The two study areas have been characterized by frequent droughts with high animal mortality followed by famine and high death rates in the human population. Drought has been, and still is a prominent factor in Afar and Borana pastoralism. Failed rains and poor rainfall affect pastoralism through shortfall of fodder and water. The impact of drought can be considerable. In Borana, for instance, the 1984-85 drought contributed to depressing animal population growth by driving calf mortality rate as high as 90% (Cossins and Upton, 1988b quoted in Helland, 2000). Other threats to the pastoral production system are population growth, privatization of grazing land and water resources, and farming. National and international policies and associated development interventions to promote and sustain pastoral livelihoods have by and large failed. These processes have led to sedenterization, weakening of local institutions and traditional cultures, degradation of natural resources and growing vulnerability to ecological, economic and cultural stress.

The development initiatives in pastoral areas are today mainly headed by non governmental organizations (NGOs). Since pastoral development is a complex issue, many NGOs give priority to development initiatives mainly among sedenterized

agropastoralists, and supports to pastoral development are limited and declining. As pastoralists are among the most vulnerable groups, this is a worrying trend, and pastoral development issues should be put back in the agenda seeking solutions and alternatives.

In pastoral drought prone areas in Ethiopia, the indigenous coping strategies at times of disaster are being eroded by external factors such as continuous relief food assistance, thereby leaving communities to be dependent on external aid. The purpose of the study was to improve self-reliance and reduce dependency of foreign food aid. The objectives, therefore, were:

- Identify coping strategies in response to drought and indicate strategies to be strengthened to make people less vulnerable to drought.
- Increase awareness at the community, project management and staff level about the importance of people's local knowledge and traditional coping strategies.

Methodology

A field survey was conducted in pastoral communities of Aba'ala district (North Afar) and Dire district (Borana) from 17th September to 13th October 2001. Information required for the study was gathered from key informants, focus groups of men and women, elderly people and clan leaders. The informants were also people working in local government offices, pastoral development related projects, ministries and organizations of pastoral activists. The focus groups were from the pastoral communities representing different socio-economic groups and age categories. Separate discussions were held with men and women groups.

Checklists were prepared and used to collect information about the production system, people's description of drought, effects of drought and coping strategies. The team has tried to get first hand impression and information from the local people through focus group discussions in both the study areas. In addition, previous studies done in Afar and Borana were used as references. The results of this study are mainly based on information from local people in the two study areas.

The study area and production system

The rangelands of Ethiopia support more than five million people and are the main source of livestock and livestock products in the country. The Afar Region is situated in the northeastern rangelands of Ethiopia and the livelihoods of the Afars in these extensive rangelands are mainly dependent on pastoral livestock production. The area is characterized by arid to semi-arid climate.

The Afars are the second largest pastoral communities in the country with a total population of 1.1 million, of which over 90% (about 990,000) are primarily pastoralists that depend on livestock (Yemane, 2000). Livestock are sources of food, income and security, insurance and above all means of livelihood. The pastoralists using their traditional organizations manage their livestock and other rangeland resources. In general, the Afar pastoralists in the study area raise mixed species of livestock, usually camels and cattle and keep supplementary herds of goats and sheep. Settlement and involvement in agriculture in the early 1960s by the neighboring Tigryan highlanders in Aba'ala (Diress, 1999) and the experiences from the acute drought of 1984/85 resulted in a major transformation of some pastoralists into agro-pastoralists. They undertake crop production to supplement the income from livestock in order to reduce the risks of drought. The cropping system in the village is rain mainly fed supported by flood irrigation. Sorghum and maize are the main crops.

Borana is located on the south-most part of Ethiopian lowlands occupying a total land area of 95,000 km² (Kamara et al., 2000) and the Borana population in Ethiopia is probably between 300,000 and 350,000 (Helland, 1997). The area is mainly flat plains which form the main part of the rangeland and occasional occurrence of mountains and depressions are present. Pastoralists largely inhabit the area and resource use on the rangelands has been communal with crop cultivation and private enclosures that appear to be increasing in recent decades. Today, although Borana is still a predominantly pastoral society, it seems that very few people are able to subsist directly from the products of their herd. The climate of Borana is arid and semi-arid. Rainfall is bimodal with the long rainy season occurring during March-May and the short during

October and November. Spatial and temporal variability in both the quantity and distribution of rainfall characterizes the area with an average annual rainfall varying from 353 mm to 873 mm per annum (Kamara et al., 2000). The region has been experiencing ecological and economic crisis (Coppock, 1994). Drought is recurrent, affecting the whole region or occurring in localized areas. The area has also been suffering from population increase, conflict between the Borana and Geri of Ethiopian Somalis, sedenterization and farming, grazing land shrinkage, disputes related to private lands, and unfavorable market trends. Private lands are alien to the communal land ownership, as Boranas did not have indigenous rules designed for dealing with private land issues (Oba, 1990).

Description and occurrences of drought

Afar

Afar pastoralists describe drought in three main categories, mild, average and acute.

Mild: This occurs when the short series of showers (Konaitu-October to November, Debaba-December, Dedaa-January, Dira-February and Sugum-March/April) fail to come after the Kerma (Main rainy season-July to September) even if the previous Kerma is good.

Average: If there is only partial rain in the preceding Kerma following the situation explained above under mild, this situation is expressed as average drought.

Acute: In addition to the mild condition, if there is total absence of the preceding Kerma, this situation is expressed as acute drought.

Based on the descriptions given above, the droughts occurred in Afar during the last three decades are classified as follows:

A. From 1982 to 1985 (Kedda 77)-"Acute drought". The word Kedda in Afar language means big. This was the time period where the most serious drought appeared in the area. A tremendous number of camels, cattle, goats and sheep as well as people died. The prices of cattle and camels went

down to the extreme low level, as low as birr 10 (US\$ 1.20) for a sheep and goat, and 50 (US\$ 6) for cattle and camel per animal. Many wild animals also died. People were forced to leave their areas and migrate to relief centers.

B. From 1993 to 1994 (Unda 77)-"Average drought". The word Unda in the Afar language means small. In this period people did not move out of their territory. They moved animals to Zone 4 (Teruu, Yallo, Dermaa and Gugubido) that was not hit by drought and people migrated with their animals to this zone. They lost about half of their animals. People give names to drought situations in comparison with the drought they faced in 1982-1985. That is the reason why they call the drought that occurred in 1993/4 as Unda 77.

C. From 1994 onwards-"Mild drought". Drought occurred not in all years but in few, and was mainly characterized by late start and early cessation of the main rains in addition to the absence of short rains. These resulted in shortage of grazing/browsing and water to animals and subsequent reduction in milk yield and off take rate from cattle and sheep. The end result was therefore food shortage for many pastoral households mainly during the late dry season known as Hagii (hottest dry season) in May/June.

Borana

Rainfall in Borana is bimodal with the long rainy season occurring during February-May and the short during October-December. Considering the extent and occurrences of these rains, Borana pastoralists categorize drought as mild, average and acute.

Mild: If there are rains in some areas in both the long short rainy seasons, which means people will be able to move to these places with their animals, this situation is referred as mild.

Average: If the absence of both the long and short rains does not cover the whole area and few places have rains, which means people will be able to move with their herds to these feed places, it is described as average.

Acute: If there are neither long nor short rains during the previous and preceding years, and drought covers all that totally restrict mobility, it is described as acute.

On the basis of the above classifications, the pastoralists described drought occurrences based on the calendar of the traditional social institutions (i.e., Abaa (chief) Geda stays in power for eight years and that period of time will be named after the chief). They described drought in light of what happened since the last five Gedas as follows.

A. Geda Goba (1969-1976)-"Average drought". During this period there was average drought in Borana. Prior to the drought, there was a conflict among clans that displaced the community. Because of this, in places from where people and animals evacuated there were grasses and in general good amount of feed for the animals. The drought did not actually cover the whole of Borana. There were some places that had rains and grasses for animals. People moved their animals to these places.

B. Geda Jilo Aga (1977-1984)-"Acute drought". Both short and long rains did not come and covered the whole of Borana. The drought stayed for three years without rainfall. Therefore people were unable to move from one place to the other for grazing and water. There was no food. People were unable to get milk and meat from animals. Many animals died.

C. Geda Boru Guyo (1985-1992)-"Mild drought". In this period, the drought affected few parts of Borana. People were able to move from place to place with their animals.

D. Geda Boru Medaa (1993-2000)-"Average drought". During this period there was average drought. People moved to Arero where there was better grazing. Later on there was rain at Yabello, which was used for grazing at latter stage of drought even for other communities.

E. Geda Liben Jelbessa (2001-). This is the first year of this Geda. There was good rain during March-May. But the effects of the previous droughts still persisted.

Traditional indicators of drought

The study shows that local indicators to different stages of drought are not fully understood and not well integrated into formal systems. There are many important drought indicators practiced by both the Afar and Borana people. Indicators mentioned below are based on people's observations and expressions of the mild drought situation.

Plants indicators

- Commiphora species-sprout usually before the coming of rains but fail to do so if drought is coming.
- Dobera glabra-if rains are delayed or fail to come, it produces many shoots.
- Acacia tortilis-flowers abnormally before the rainy season if drought is coming.

Diseases and appearances of animals

- Ticks appear in three sequential forms-smaller size (locally known as Dekoi), middle size (locally known as Silmi) and then big size (locally known as Grandisa); and attack animals.
- Prevalence of Foot and Mouth disease (FMD).
- Smoothness of the hair and shininess of the body coat of the animals-if the hairs appear rough and the coat is not shiny drought is anticipated.

Effects of drought

Household food security situation

The pastoralists ranked the effect of drought on the different socio-economic groups with respect to its impact on household food security. For pastoral groups, wealth status of the household depends mainly on the number and composition of the animal herds (camels, cattle, sheep and goats). A drought will hit different socio-economic groups differently with regard to the food security situation at the household level.

The poor households are always the most vulnerable to all stages of drought. During acute drought, however, all socio-economic groups are seriously affected. In general, the wealth status (number of animals of each species each family possesses) of

the people decreased due to the various types of drought occurred during the last three decades. During mild and average drought situations the lower and very poor households are most affected followed by the middle class. In terms of livestock loss (number) the wealthy groups are affected most followed by lower and very poor groups during mild and average droughts. Wealthy households have the possibility to sell animals several times as the drought proceeds to buy grain and feed the household. Poor and medium households have no or few animals to sell and cannot respond or cope with the drought situation in the same way if the drought proceeds.

People describe the acute drought as an unmerciful and selfish situation whereby every life is on the verge of death. They also explain the food insecurity circumstances imposed by drought as survival under difficult situation. For example, in a good year people in the two study areas eat three meals composed of cereals and milk every day. However, reduction in number of meals and their composition is effected whenever there is shortage of food in the household. At the early to medium stages of drought, they eat bread (maize or wheat) and milk for breakfast, only milk if available for lunch and maize porridge for supper. Meat is only eaten at special occasions. During acute drought, priority is given to children and number of meals reduces to one. Children get some tea in the morning and grain porridge in the evening. Adult people usually go hungry.

People in general have increasingly come to rely on favorable market exchange between pastoral products and grain to maintain food security. In drought situations, however, the exchange rate typically becomes unfavorable to pastoralists to the extent that effects of drought on food security are exacerbated rather than alleviated by a strategy of market integration (Helland, 2000). This is simply because during drought periods pastoralists obliged to destock and supply more livestock to the markets and, therefore, the prices of animals decrease whereas the prices of grains increase. Therefore food insecurity prevails.

Livestock and rangeland

Livestock species composition has changed as an effect of drought. The number of cattle and sheep tremendously reduced although there was decline in all types of species. Cattle and sheep are easily vulnerable to drought because they are grazers not adapted to browsing. Lactation period reduced and resulted to a very little amount of milk and lactating animals did not give milk in average drought.

The pastoralists at Gorille village in Borana indicated that there is a change in livestock species composition. The Borana used to keep mainly cattle. However, the condition of the rangeland as a result of drought highly reduced the cattle population. In 1984-85, for instance, drought depressed animal population growth in Borana primarily by driving the calf mortality rate very high and reducing calving rate in the preceding year. The death due to drought of 45% of all mature cows over an 18-month period has been recorded (Coppock, 1993). Again, the 1984/85 drought, in the worst affected part of Borana, led to a well authenticated 60% decrease (mortality, slaughter and sales) in cattle number in sample herds over two years (Coppock, 1994). More recently, the 1995-97 droughts led to a 78% decrease in cattle herd size and 45% decrease in camel herd size among sampled households in the Somali and Borana areas of Ethiopia along the Kenyan border (Sandford and Habtu, 2000). The impact of drought on the animal population is therefore profound.

As a result, the Borana people started to keep camels in order to cope with prevailing ecological changes. The current trend of livestock species composition preferences is in the order of cattle, camels, goats and sheep. The reason for this preference is that they like cattle more than the other species and they also need to keep more camels and goats as they are drought resistant and can browse the bushes that invaded the rangeland.

In average drought, the number of livestock reduced to about 50%. Although camels and goats are relatively resilient to drought, their number went down. The carcass value went down almost to zero because of severe emaciation during average drought. In acute drought, animals die even if they get water since they do not have feed to eat and this forced people to evacuate their areas during the

acute drought that occurred between 1982 and 1985.

The pastoralists in Borana indicated the effects on the rangelands also as replacement of grazing grasses by aggressive and thorny woody species such as *Acaia drepanolobium* and *Acacia brevispica*. These affect both the quantity and quality of the grass available especially for cattle. Although estimates indicate that bush encroachment has affected almost half the rangelands in Borana, the extent of agriculture expansion is not known so far (Helland, 2000). The traditional practices of rangeland burning every 3-4 years is said to be effective in controlling bush encroachment, but this exercise was banned by government authorities during the previous regime (according to the informants).

Total loss of grasses occurred during acute drought in Afar. However, some evergreen plants throughout the drought crisis were identified. Examples are *Alen-galita* (*Cadaba rotundifolia*), *Gersaaito* (*Dobera glabra*) and *Adaaito* (*Salvadora persica*), which usually used as camels and goats browses. Unfamiliar plants started to grow. For example, thorny forbs is extensively growing in its own right, which was not there before the acute drought, replacing the very important palatable grasses. This new grass species is not palatable to any of the livestock group.

Water resources

In Afar, some areas used to have perennial rivers/waters even during acute drought of 1984 around foothills. Because of the repeated drought occurrences in the area, some of these perennial rivers/waters started to dry. Surface run-off water increased and caused gully and rill erosion (long-term effect). The communities used to get sub surface water by digging dry rivers, but this apparently has become impossible during acute drought. Under mild condition most of the temporary water catchments areas dry up. However, at some places there is still water to be used.

The drought also affected the water availability both for livestock and domestic use. The water sources in Borana are *Ela* (wells, 20-30m deep), *Tula* (very deep wells, 60-70m deep), ponds and earth dams. These

sources usually dry up especially ponds, earth dams and Elás. The Tula, however, never dries totally even during acute drought. There are about 9 Tulas in the whole Borana.

Market/trade

The prices of livestock have become very low during average and acute drought. The prices of cereals have become extremely expensive. For example, half a kilogram of sorghum or wheat was sold for birr 10.00 (US\$ 1.20) during the acute drought. There was no diversity of cereal food crops (no variety of grains) during acute drought period as it used to be during mild or normal years. Options were limited to only few cereal food crops, due to shortage of supplies. The average and acute droughts have also impacted on salt transport because the camels are weekend or die.

Social organization and culture

No change has been noticed in the Medaa (the highest traditional governing body) in Afar. However, the strength of the Aadaa (implementing body the rules set by Medaa at community/village level) seems weakened. For example, the Titihatia, system could not achieve its basic cultural initiatives to assist the needy ones. This is simply because a household cannot have food or any other resource to share with other households especially during acute drought.

Dowry is significantly affected at varying degrees in all categories of drought. In the Afar community, the parents of the groom are expected to pay dowry to the bride family. Similarly, other assistance such as provision of money and material in kind for families or households that lose family members due to death will reduce significantly. Trend of marriage also changes as a result of the migration that emanated from the effect of acute drought in 1984. The Afar women never married non-Afar men or Afar men that are living far from their villages or outside territories of grazing. But after having some exposures at relief centers during acute drought, they have started marrying Afar men who come from very far places. On the other hand Afar men started to marry non-Afar women in addition to their Afar wives. People also started mixing others culture into their system as a result of migration

during acute drought. For instance, some changed derived from the mix up of culture and accepted by the Afars are marriage between couples on the basis of love and mutual interest, and settlement in relation to cereal farming. Other change in livelihood includes change of food habit, from porridge to Injera (flat and circular pancake like bread).

The rituals under the Gada system were weakened. Missionary works (Christianity and Muslim) and development interventions works in response to drought situations influenced quite a lot. People started to adapt habits such as drinking alcohol, chewing chat (*Cata edulis*), etc. that do not fit with the culture. Although the Geda system is still functional in some situations, it is not strong enough to implement all its responsibilities. Even election of Aba Geda every eight years is not done properly. It is highly influenced by corruption and politics. The ceremony is no longer respected very well, and people sometimes get drunk and do not actively participate in the election.

Health and education

In Afar, during mild and average droughts, new livestock diseases have been noticed. For example, it is common to observe discharge of blood and mucus coming out through the noses of camels and cattle. Coughing of camels and cattle to the extent of affecting their breathing system is widely observed. These in turn affected the mobility of camels and cattle under severe heat condition and sometimes resulted in death. Skin diseases on camels, cattle, goats and sheep have been observed during drought crisis. Sheep pox is among the many skin diseases. In humans as well, due to changes in diet certain abnormalities have been observed during acute drought. A good example is diarrhea to the extent of containing blood. In Borana, the Dikicha villagers said that due to food shortage, many people show symptom of swelling of the body that eventually caused death.

Attitude change towards formal education has been observed as a result of the effect of drought. It triggered a growing feeling of resentment on the illiteracy situation of the population within the society that in turn inspired interest in acquiring formal education. People have convinced themselves that one of the best ways of changing to a better life

is acquiring formal education. Therefore, parents started sending their children to formal schools. This was meticulously observed in Afar where the communities are utilizing their social organization to support children going to formal schools. Extraordinarily, through the Adaa cultural system, the Afars raise money for children who go to formal schools and whose parents are not able to support them in formal schools.

Traditional social institutions and culture capital

Afar

There are two types of institutions functioning together, Medaa and Adaa in Afar. Medaa is a legal system that makes decisions. It has a hierarchical structure starting from a head of a household (Bura Haba) to clan leaders at top level (Kedo Haboti). The Medaa is the highest decision making body of all the clans. All members are clan leaders and the system is not subject to alterations. Medaa encompasses every aspect of legal issues and decides on ranges of legal matter from minute to a serious one. For example, some of the governing rules of Medaa are: a) if one person kills another from within or another clan, there is a fine of 3500-4000 goats or the equivalent of about 100 camels (camel is the preferred type of fine payment); b) 750 out of the 3500-4000 goats are meant to be paid to members of the jury assigned by the Medaa system to handle the case; c) the fine will be collected from all members of the clan and other clans except from the deceased clan members.

The same applies to natural resources management. For example, wildlife is protected by the Act of the Medaa. If some one kills a wild beast for the first time, there is a fine of Birr 150 (US\$ 20). If the same person does it for the second time, the fine will rise to Birr 300 (US\$ 400). If that goes for the third time, there will be a serious imprisonment. There are also protected areas under the Act of the Medaa system. The fines vary according to the type and extent of damage caused by respective individuals and/or groups.

Some conflicts are observed between the Medaa system and the local governmental administration. If, for example, the police arrest any person for some

wrong doings, this is taken as an offence by the community (Medaa system). The police and even his respective clan will be considered as accountable by the Medaa system for the arrest and even for anything that will happen on the person in custody. To resolve situation such as this one, the local government resorts and allows to first handling the matter by the Medaa system. If this is impossible, the local government will intervene. The latter one is very unlikely to happen. This is because in the Medaa there is a system known as Fataha (last and final decision given by the highest body of the Medaa). The Fataha is respected and accepted by every body (no changes expected).

Adaa is the cultural mechanism that manages the system by applying various rules and regulations within the system such as resource management, marriage arrangements, conflict management, external relations, etc. set by the Medaa. Committees such as Woger Habaa and others are assigned and make decisions at any time whenever appropriate with regards natural resource management, conflict resolving, etc. The Adaa respects the rules and regulations of the Medaa, and the Adaa does not have any structure, it is just a system functioning within the pastoral production system and has been in use since time immemorial. The Adaa also govern every day's life situations; for example, if some families do not have enough to eat they have the right to get food from the others who do have enough.

This traditional mechanism also promotes poverty reduction, by reducing the number of households living in the lower class (very poor). The better off part of the community contribute a number of livestock, not only to keep the household surviving, but also to upgrade the socio economic condition of the household. There is a traditional system known as Titihatia that deals in situations like these ones.

Titihatia is a help-each-other scheme, and the Adaa formulates the rules. In this cultural scheme, for example, if a household does not have milk to drink-this family has the right to get milk from other households that have got enough and likewise in foods. If a household refuses to give milk and/or food to the needy, it will be liable for punishment by the Adaa system.

In the agro-pastoral production system, land is distributed based on agreement reached between the Adaa and the Biito (the last local government unit at village level). In that, the Adaa appropriates the rangeland and the farmland, while the Biito distributes the farmland among the households. During drought incidences, the Mekabon/Tewaaba assigns ad hoc committee of elderly people known as Woger Habaa. Energetic young men are selected within the community by Woger Habaa to assess the condition of grazing and water locally known as Edo before deciding where to move the animals. In the case of movement in particular, the pre-assessment of different areas on the availability of water and pasture are evaluated and the committee decides to which area to move.

Borana

The various focus groups used in this survey have experienced (remember) about 59 Abba Geda administrations and each Geda has a life span of 8 years. The informants indicated that Borana people are divided into two major groups (moieties), Saboo and Goona. The same Abba Geda administers these groups and everyone is answerable firstly to his clans or sub-clans. In each there are many clans and Helland (1997) indicated that there are 17 named Borana clans (Gosa) in total. The Borana live in the six lowland districts, namely, Liben, Dire, Moyale, Arero, Yavello and Teltele of the Borana Zone. Under the Abba Geda there are Hayyus (councilors). Some of the councilors are Hayyuu garbaa (ritual), Hayyuu yuuba (disputes and marriage), Buusa Gonofa (social security) and Abba-Hirega (water management). These are leaders to manage resources such as pastures, wells and ponds. It is on the permission of these leaders that use of the wells and ponds is possible. Otherwise, there will be conflict among users. In cases of such type of conflict the father of the wells, Abba-Hirega gives decision, and the decision is acceptable to all. The Abba-Hirega oversees the peaceful and orderly watering of animals (Helland, 1997). In Borana there are about nine very important deep wells (known as Tula) distributed strategically throughout the major grazing territories.

The Borana Geda is a complex, elaborate and all embracing social institution, which at first sight is concerned with the relations within and between

the generations, but which more fundamentally, is about how the Borana should live their lives (Helland, 1997). An Abba Geda must hold a general assembly known as Gumii Gayyyo once in his eight-year rule, usually on the fourth year of his period to review the achievements of the Abba Gedas and the councilors, and to resolve difficult disputes and update Seera (law) and Adaa. The Borana explain various features of the society in terms of custom that dictates the giving and receiving of gifts of animals, livestock herding and husbandry practices, access to water and pasture, participation in public events and rituals, among others. The findings from this study confirm that Geda system still exists in principle but it is weakening in practice. The system has been affected much in the last three decades. The reasons include repeated drought occurrences, Ethio-Somalia war, recent conflicts for resources among clans (e.g., the Borana and Geri), high population pressure, and so many external interventions that do not comply with the traditional system.

In the Borana Geda system, mobility has been one of the mechanisms in utilizing the grazing resource properly that varies highly in space and time. Usually young men move with dry cows and bulls (Forra herds), while old people, women and children stay behind with milking cows and calves (Warra herds). Enclosures or dry season grazing reserves were used traditionally by the Borana people and were handled and administered communally through the Geda system. During drought, communities come together and decide on what to do. Access to pasture in Borana is obtained by virtue of Borana identity. But at present this trend is changing to individual community ownership by introducing the practice of fencing which are not customary to the Borana. The traditional system in managing water still seems strong. Access to surface water is governed by the same principle as access to pasture (everybody is free to use without any restriction). When water is collected in man made ponds and wells (elas) access right become more restricted and are linked to contributions of labour and or other resources (Helland, 1997). Access rights to a well are gained through negotiations with the well council (Abba Hirega).

Coping mechanisms

Coping strategies are bundle of people's responses to declining food availability and entitlements in abnormal seasons or years. Coping is thus defined as response to an immediate and in-habitual decline in access to food, and means acting to survive. People living in conditions where their main sources of income are under recurrent threat develop strategies to minimize risk to immediate food security and to longer-term livelihood security.

People in vulnerable systems, like the pastoralists in Afar and Borana, are seeking to use all available options at all times to survive and to preserve assets for future livelihoods. When food insecurity has become chronic, people might not be able to cope with the situation anymore. This might be the situation when pastoralists have lost their animals and hence their means of primary production. At this extreme, all behavior becomes coping. One might argue that this is the case in Borana where a combination of climatic conditions, civil war and impoverishment from repeated famines has rendered some groups incapable of surviving and dependent on relief aid. Strengthening and rebuilding of appropriate coping strategies therefore, needs an in-depth analysis of peoples' description of drought, traditional indicators for predicting drought, traditional social institutions and coping mechanisms to mitigate the effects of drought.

Afar

Surveillance and assessment of the availability of grazing and water is conducted in the whole area during mild drought. This is organized and done through the ruling system of Medaa and Adaa. Dagu is an organized information exchange network system of Afars, which helps to assess resource base and determines where to go. It is a long established tradition that when an Afar meets another Afar (those who knew each other or strangers) in the streets or elsewhere they sit down and spend some-time exchanging information about grazing, water and local politics (Diress, 1999). Youngsters are assigned and undertake the surveillance and assessment responsibilities. They report back to the community about the situation with due considera-

tion of the availability of feed both in quality and quantity, and estimate for how long the feeds and water sustain the existing stock. After the available resource is inventoried, the communities assisted by Medaa members also plan on how to economically utilize the resources. The number of livestock and length of time to stay on the particular spot will also be decided by the Medaa and Adaa. They pass resolution to protect and even have more Kalo (grazing reserves) and temporarily protected dry season grazing land (this is used where most of the grazing lands that are far away from the water sources are depleted). They rationally plan and make economical use of the Kalo. Weakened livestock will be allowed to feed on the near by Kalo and drink from the near by water source. Selling of animals and purchase of food items (cereals) starts at mild stage of drought to be used later. Slaughtering of few animals to preserve as dried meat (Daru) commences at this stage.

Complementary to the above, importing different form of fodder from neighboring regions will be considered, for example, importing *Oppuntia* (Beles) as feed from neighboring Tigrai. After exhausting all these at this average drought crisis, and when the situation is exacerbated, the Medaa and Adaa advise the people to sale more animals and buy grains in cheaper markets. In addition, preparation and preservation of Daru (dried meat) continues, and the communities comply and do so. Livestock as well as people move to water spots and this includes also crossing of boundaries to other regions. At this time death of emaciated, older and milking animals starts. People collect animal feed in areas where people and livestock do not have access (top of hills, cliffs, etc.). People usually eat only supper or eat only once in a day. People also eat evergreen non-cultivated food plants such as *Amberaarcu* and seeds of *Gersa* (*Dobera glabra*) are boiled and consumed during this period. People underlined that *Gersa* is the most important wild fruit bearing plant used during drought. The additional value of *Gersa* is that its seeds are preserved for about three years without any problem. Guinand (2000) also emphasized that *Gersa* is widely used as wild food across Afar Region during drought.

During acute droughts, use of *Gersa* seeds and evergreen non-cultivated food plants such as *Amberaarcu* continue. They sell most of the animals

if they find market and slaughter the rest and preserve meat in dried form (Daru) to be eaten while migrating. The Medaa members report the situation to the local government to be supplied by relief aid while they are in their villages. If this is not possible, people are advised to migrate to other areas where there is relief aid. But Medaa insists that people leave behind few herders to keep and feed some animals by utilizing the available trees and shrubs. Energetic young men bring food to the herders from the relief centers. This is used as a mechanism to have few survived animals to rebuild the herd after the drought.

Herders conduct intensive and coordinated search for plants that can catch or hoard water naturally. Plants such as Gebetaa (Baobab tree) are said to help very much as water source for herders during the acute drought period. The agro-pastoralists try to build diversion canals in order to utilize the available floodwater for their crop production and this is strengthened by harvesting water using dams during average drought.

At mild drought conditions, people produce more salt as much as possible for sale and get more money to buy reserve food to the family and feed for Arho camels (male camels used for transporting salt). At Ahmed Ela where salt is produced, about 3000 people are settled and get income mainly from salt even during mild and acute droughts. There are also many others who come from other places and collect salt. Most of the people who settled around salt areas were not displaced during the acute drought of 1984 because they generate stable income from salt production and sale.

Attempts are made to generate income and compensate losses incurred as a result of mild and average drought effects. Women are mainly involved in petty trade to diversify their income. Efforts to strengthen benefits from small trade activities among poor pastoral women reduce the food shortage and increase the household food security. They also prepare marketable goods such as ropes to feed the family. Men buy grains from areas where there is cheaper price and sometimes look for jobs as daily labourers in towns.

If someone is ill, Medaa makes enquiry whether or not appropriate traditional medical care is given to the ill person on the basis of the Adaa cultural Medicare system. If the answer is not satisfactory, the Medaa orders to take appropriate action and provide the necessary traditional medical care and other post treatment cares to the ill person. If the person is not healed after acquiring the traditional treatment, Medaa intervene and raise funds from the community to take the ill person for better treatment in formal clinics or hospitals.

During average drought advice will be given to the community by the indigenous social institutions to sell most of the livestock in order not to lose them and get money for purchase of grains. The Titihatia system is strengthened to make sure that the community should collaborate and survive the difficult times by assisting each other. Further consultations and discussions will be held with the government to undertake appropriate measures. The institutions also advise the people to slaughter some animals and preserve dried meat known as Daru for later use as the case becomes very severe.

During acute drought, many of the camels and cattle will be slaughtered, and the meat will be prepared in the form of dried by the order of Medaa. Migration will take place including taking the whole community population to the government. Advice is given to leave behind some herders to keep few animals as much as possible and young men are assigned to bring food to the herders from relief centers. The Adaa mainly tries to salvage people's lives. In addition, the Medaa tries to save and rehabilitate whatever animals are left.

Summary of the major coping mechanisms

A brief summary of the coping mechanisms exercised by the Afar people in the study area to mitigate the three different categories of droughts are given in Table 1.

Table 1. Summary of coping mechanisms during different drought situations

Coping mechanisms	Drought conditions		
	Mild	Average	Acute
Resource assessment (grazing, water, etc.)	x		
Grazing reserves	x	x	
Planning for improved use of scarce grazing and water resources	x	x	
Split herds (dry, milking, young and emaciated)	x	x	
Maintain reserve grazing around water sources	x		
Collect feed or hay	x	x	
Importing feed from outside		x	x
Move to areas far away from the regular grazing areas		x	x
Search new grazing areas		x	
Lopping trees		x	x
Assess market situations	x	x	
Sell some animals and buy grains	x	x	
Slaughter some animals and preserve dry meat (Daru)	x	x	
Sell more animals including breeding females		x	x
Collection of wild fruits and plants for food	x	x	x
Food and feed rationing and change in meal composition		x	x
Income diversification through petty trade, handicrafts, labor migration, etc.	x	x	x
Maintain only very few herds			x
Migration for relief aid			x

Source: Author

Borana

Given that the Borana have occupied their areas for at least four hundred years, the assumption is that the Borana pastoral production system contains a mechanism to solve problems (Helland, 1997). The Borana pastoral societies, however, had apparently lost their mechanism to handle droughts and some face destitution. However, both the local people and informants from local government and non-government offices explained various coping mechanisms practiced during drought period in Borana.

The Borana people use the water administration councillor (Aba Hirega) of the Geda system to plan and rationally use the available water during drought. They bring their herds near to water sources and properly use the available water. Usually animals drink every three-days. The Abba Hirega decides the number of animals to use a particular well or other water sources. If they think that the water is not enough for all animals, people are obliged to reduce the number of animals and move some to other areas, such as Genale and Dawa rivers. They also decide the length of time and areas where animals stay for grazing. They are allowed to graze around water sources when they come to drink water and graze far away in the two days where they are not drinking.

Nevertheless, it seems to appear that changes are occurring, as new coping mechanisms emerge in the ownership and utilisation of water resources differing from the indigenous water resource management. For example, a very recent development is the installation of privately owned cisterns that are used to sell water for the community during the drought crisis.

People lope evergreen trees such as Bedena (*Balanites aegyptica*), Kedecha (*Acacia tortilis*), and Kelkelcha and feed animals during average and acute droughts. Hay is also prepared during the early stages of drought. They also eat wild plants such as Gunbo, Buri, Ostria, etc. to survive. The wild food is used usually after the main rain season, and specially used in a drought year. People tried to use various mechanisms including eating of roots of some wild plants in the past during acute droughts. The Borana people used to assist each other in previous times as the Geda system was playing a major role by closely tying and creating unity among people and communities. But this way of life has been highly influenced by high population pressure and many external interventions that diluted the traditional system.

The lower class and very poor households generate income by harvesting Juniperous trees for sale in

nearby towns, for construction making charcoal for sale and selling of firewood. This also becomes a problem for Dikicha villagers due to diminishing firewood as a result of overexploitation. Others migrate to nearby towns or to Kenya for labour (especially young men) and send back money for their family. Small-scale business is also conducted by buying items in Kenya and selling them in Ethiopia, often with a small profit (this is also practised by better off families). Few young men involve themselves in salt and gold mining using traditional means to generate income. Although Sandford and Habtu (2000) argue that non of the major pastoral groups in Ethiopia seem to have succeeded to diversify their income, this study shows that the Borana and Afar pastoralists attempt to diversify their economic activities outside pastoralism in order to avert the disastrous consequences of drought. This is described as a very conscious family or household strategy (Dahl, 1979).

Those households, who own a good number of animals, sell some animals whenever there are good market prices and when they observe indicators at early stages of drought. The informants, however, indicated that the Geda system does not encourage selling of cattle or other animals. The system encourages having as many animals as possible since the wealth status of Borana is determined by the number of animals. This conception has negative impact upon the community during periods of drought, because animals die and are lost. In 1999/2000 droughts, for example, about 76,000 cattle from the area died (personal communication SORDU, Mega). After this disaster, there is a change to a certain extent to sell animals in order to use the money during drought. In addition, to secure food for the households, some wealthy pastoralists start to sell animals that are in good condition and save money in the bank to buy grains when grains are cheaper. They also invest money by building houses in nearby towns to be used as an asset, and for generating income by renting. The community has already agreed to implement the idea of selling livestock and save or invest the cash income. This is because the effect of drought on livestock survival, income and prices and timing of de stocking in securing favorable outcomes for pastoralists is crucially important. Manger (2000) argued that pastoralists pursue their interests when they see benefits, and withdraw when they feel threatened.

People interviewed expressed that they don't look upon relief aid as a sustainable solution for their survival. The findings of this study revealed that people are not exercising the usual traditional coping mechanisms due to the regular supply of relief aid to the area. To cope with drought in a sustainable way, people envisage that the rangeland could be rehabilitated through diversion of rivers such as Genale and Dawa rivers. This, however, requires a huge investment and could be another source of conflict among the various clans who utilize these rivers. They also envisage that other water development efforts (such as excavated ponds and earth dams, construction of cisterns and improvement and maintenance of deep wells) will have an impact in improving the situation provided the development schemes are worked out through participation of the local people and on the basis of the needs and wishes of the community. In addition, people aspire that strengthening of coping mechanisms will assist the society in decreasing the danger of being vulnerable to food shortages and other effects during droughts.

Conclusions

In drought prone pastoral areas in Ethiopia, peoples' livelihoods are affected by external factors such as recurrent droughts, continuous relief food assistance following drought, unsustainable development interventions leaving communities to be dependent on external aid, lack of clear governmental pastoral policies, war and civil unrest. Other threats to the pastoral production system, partly caused by these factors, are resource use conflicts, privatisation of grazing land and water resources and farming, population growth, weakening of local institutions and traditional cultures, degradation of natural resources and growing vulnerability to ecological, economic and cultural stress. Vulnerability is not however equally distributed. The most vulnerable groups are those with less access to physical and human resources.

The general opinion is that this approach to pastoral development has failed, but is not replaced by anything else. The lowlands of the country still play a crucial role in the national economy, as it is a home for 26% of the livestock. For example, in mid 1980s, 12% of the gross annual export revenue was from livestock of which the majority came from these areas (Coppock, 1994).

Understanding and supporting existing indigenous pastoral strategies to cope with drought is an important step in getting humanitarian and development pastoral interventions right. This study on traditional coping strategies of the Afar and Borana pastoralists must be seen as a follow up wanting to know more about how pastoralists themselves cope with the worsening situation and declining food entitlements at different stages of drought. The hypothesis was that due to the above mentioned reasons people's indigenous coping strategies at times of food shortage have eroded. The overall objective of this study was therefore to support communities of drought prone areas in rebuilding and strengthening their coping strategies in response to drought. This study has sought to reflect on the nature of various types of droughts, mild, average and acute, their effects on people's livelihoods and coping and adopting strategies used by pastoralists to respond to the decline in access to food, caused by the various types of drought.

Like other pastoral areas of Africa, the Afar and Borana pastoralists face cycles of drought, range degradation, de stocking of animals, range recovery, and restocking of animals followed by a new cycle of drought and recovery. The study revealed that drought has been recurring in these two areas since the early 1970s. The major drought events occurred from 1973 to 1975, 1982 to 1985, 1993/94 and 1999/2000 in these areas. These various droughts occurred in the two study areas brought various ecological, economic, and social consequences.

The traditional Afar pastoralists involve transhumant migration between dry and wet season pastures within a radius of approximately 50 kilometers. Usually the Afar pastoralists and agro-pastoralists get water sources at the foot hills and mountains although the distribution of these water sources do not cover the whole grazing areas particularly in northern Afar. It is, therefore, the circumstance and the fact that prolonged drought periods exhaust grazing areas near water points and animals have to cover ever-longer distances for fodder. The northern Afar pastoralists are relatively more mobile than their southern affiliates and depend more upon water drawn from shallow hand dug wells along rivers which usually run dry after a certain period of time (Guinand, 2000). Livestock species composition has changed in both the study areas.

The number of cattle and sheep is tremendously reduced, although decline in all types of species are observed. For example, in Afar, a pastoralist lost as much as 65%, 50%, 80% and 100% of his camels, goats, cattle and sheep respectively, during the acute drought of 1982 to 1985 (Kedaa 77). During the average drought of 1993/94 (Unda 77) 33%, 50%, 65% and 87% of the livestock herds were lost.

The Borana used to keep mainly cattle but due to losses of cattle and changes in the ecology (replacement of grasses with bushes such as *Acacia drepanolobium*, *Acacia brevispica* and *Commiphora* species) they started to keep camels in order to cope with the change in species composition of the rangeland. The impact of drought on the household food security situation varies based on the severity of drought.

The current literatures on pastoralism state that traditional pastoralism in Africa, as elsewhere in the world, is declining. It has been repeatedly said that traditional pastoralism has been severely disrupted, both as a production system and a way of life. It may be true for some pastoral groups including Borana, southern and south-western Afar where a lot of external intervention has been occurring. However, the information obtained from northern Afar indicated that traditional pastoralism did not disappear and still maintains most of the traditional resource management practices and cultural characteristics. It does not, however, mean that there is no pressure on the system. The study recognized that some elements of change are certainly taking place, especially the growing concern with crop production. There are also various pressures such as natural calamities (i.e., repeated drought occurrences) and man made disasters such as civil war. The Afars sustained their production system until today through the resilience of the indigenous institutions Medaa and Adaa. The customary laws and regulations of these institutions are still very strong and play a key role in managing the resources and minimizing conflicts that could arise internally and externally regarding resource utilizations. The situation in Borana is, however, in contrast to that of the Afar. The findings of this study indicate that the Geda system in Borana still exists in principle but it is weakening in practice.

The resilience of the pastoral social formations has made the pastoral people in the study areas to survive even under repeated drought situations. Owing to variable environmental conditions, the pastoralists tend to secure the necessary natural resources through membership in social groups and through the Aada (Afar) and Geda (Borana) systems. Members of the group use the range independently of others, but under regulations and rules commonly agreed upon.

Both Afars and Borana people sell animals when there is a high tendency of drought or at an early stage of drought. They then either save money or buy grains at a lower price and reserve for difficult situations. Some pastoralists in Borana also invest in building houses in nearby towns to be used as an asset and to generate income by renting. However, environmental conditions play an important role in livestock marketing in East Africa. Since the primary role of livestock is as a productive assets generating milk and calves (to a lesser extent transport or traction power) has a strong positive relation to the conditions of the range ecology and pastoral system, environmental conditions necessarily affect marketing operations (Bailey et al., 1999). They either sell (if market is available) or slaughter most of the animals and select and keep only those animals, which are resistant to drought. From experience, it has been observed that some animals (mainly goats and camels) are resisting severe droughts. During periods of drought and fodder shortage, the Afars like other pastoralists also practice methods of keeping more female animals to facilitate relatively rapid animal recovery after drought.

The Afar and Borana people diversify their income during food shortage by creating employment opportunities for the youth in non-pastoral activities or send part of the household (young men) in nearby towns or to other foreign countries. The Afars usually send young men to Saudi Arabia, Djibouti and Yemen, whereas the Borana youth migrate to Kenya for selling their labor. This helps in the reduction of number of people from each household and in getting additional income for the family from sale of labor. The Afar pastoral people also diversify their income by involving in salt production and trade activities especially in Berhaile and Afdera areas. There is also attempt to involve in

salt production and trade in Dire district, Borana. Pastoral/agropastoral women also diversify their income in response to drought by involving in petty trade activities and in small-scale handicrafts. There are also investment links in Afar. Helland (1997) indicated that the most worrying aspect of the current situation in Borana is not that previous development initiatives have failed, instead that well-intentioned interventions like famine relief have produced unintended consequences like dependency on continued famine relief, and attempts to involve Borana institutions in the development process have failed.

Recommendations

On the basis of the mentioned coping and/or adaptive mechanisms, the following recommendations are drawn. The recommendations might be helpful for any future interventions in Afar and Borana in response to drought situations, and in decreasing the vulnerability to food shortage and/or in making the people self-reliant.

- Coping strategies in an early stage of the disaster can be good indicators of food stress and predicting a food crisis. The development of indicators must be based on the knowledge about how different socio-economic groups cope with food stress. Indicators must be developed which can be tracked over time and sensibly interpreted without too much difficulty. The drought monitoring committees should in common select indicators for a locally based early warning system (EWS). The most important indicators of coming drought used by pastoralists such as indicator plants (Hamesa, Gersa, *Acacia tortilis* and *Commiphora* species), behaviour of animals, animal diseases (FMD and ticks), water holding capacity of Elas and Tullas, food situations (food rationing and unusual food items such as wild fruits, tubers, etc.), unusual sale of young male calves and breeding animals, and labour migration into neighbouring towns should be incorporated in EWS.
- Livestock species diversification (raising mixed species of cattle, camels, goats and sheep) through restocking after drought. Restocking animals mainly goats for poor households. This

should be done through the traditional management systems (the Geda and Adaa systems) and not through peasant associations. Although this recommendation is based on the preference of the people in both study areas, restocking needs a thorough study taking into consideration the socio-economic groups.

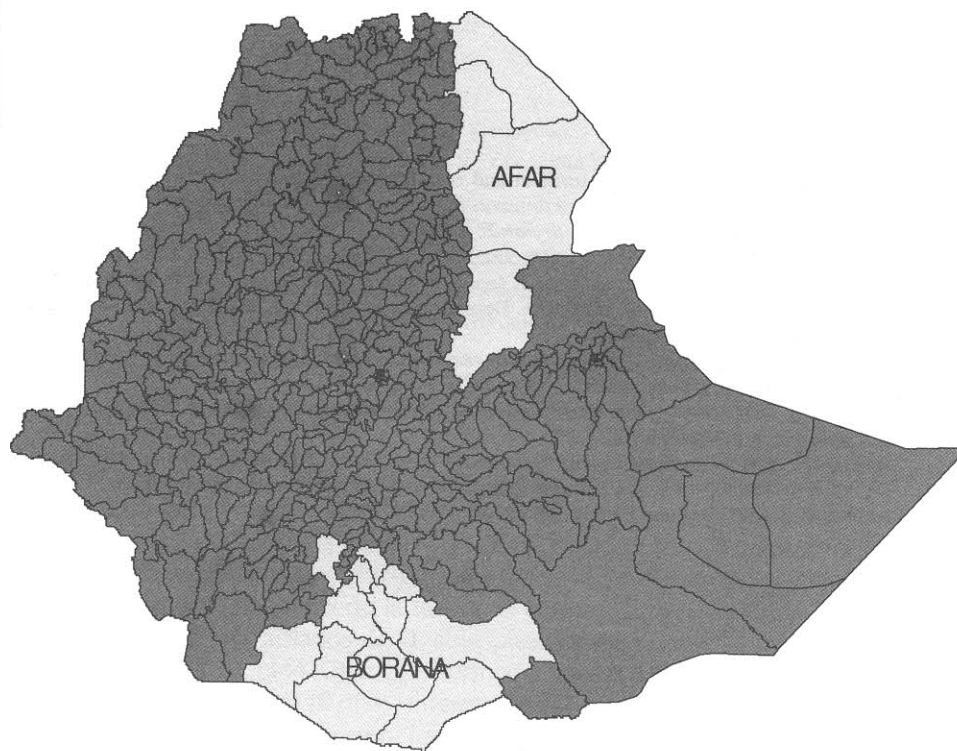
- Livestock sale in normal years to buy grains, savings in the bank and/or investment in different income generating schemes practiced by the Borana people should be encouraged and strengthened. This actually benefits the wealthy families who are less vulnerable to drought. But it will have an indirect impact in helping the most vulnerable groups through the traditional mutual sharing mechanisms.
- Slaughtering animals and selling dried meat (processed and packed in abattoirs) could be introduced in the area at peak drought crisis.
- Encourage protection and management of ever green plants such as Oodaito/Bedano (*Balanites aegyptiaca*), Aepto/Kedecha (*Acacia tortilis*), Adaito (*Salvadora persica*), Gersa (*Dobera glabra*), Alengalita (*Cadaba rotundifolia*), etc. that supply feed to animals even during drought periods. There is also a need to protect trees such as Gersa (*Dobera glabra*), Amberarecu, etc. that supply edible fruits, leaves and/or roots to the people during drought periods.
- Raise fund for the construction of community owned cisterns and enable the communities to take full responsibility in managing and refilling the cisterns as deemed necessary.
- Strengthening of the old tradition of sharing mechanism in Borana (Buusa Gonofa) and Afar (Titihatia) has a profound impact in making poor households less vulnerable to drought. The Afars sustained their production system until today through the resistance of the indigenous institutions. The customary laws and regulations of these institutions of Medaa and Adaa are still very strong in Afar. The experiences gained from Borana, however, depict the negative impact of interventions on the local institutions. Thus, care should be taken in cases of future interventions in Afar, not to overlook the role of local institutions and instead effort has to be in place to make use of traditional systems cautiously.
- Create awareness to outsiders about the functions of the traditional institutions. The clan leaders in Afar are really willing to allow outsiders to sit and even participate in the decision process of Medaa and needs to collaborate and work together with the local government institutions.
- There is a need to establish a clear and radical policy to address issues of pastoralism since attempts to develop the pastoral areas failed due to pastoral-unfriendly policies imposed upon them. Pastoral organizations need to be set up at various levels so that their voices are heard. There is a need to develop appropriate extension methodologies (pastoral oriented development and extension system). The initiatives taken by GTZ Borana Lowland Pastoral Development Program should be encouraged. The agricultural extension in the drylands of Ethiopia developed by DCG could be also used in developing extension packages for agro-pastoralists (Abesha, et al. 2000).

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The study areas in Ethiopia



Source: Author

References

- Abesha, D., Waktola, A., Aune, J.B. 2000. *Agricultural extension in the drylands of Ethiopia*. Drylands Coordination Group and Noragric, Agricultural University of Norway.
- Bailey, D., Barrett, C.B., Little, P.D., and Chabari, F. 1999. *Livestock markets and risk management among East African pastoralists: A review and research agenda*. GL-CRsp pastoral Risk Management Project (PRM), Technical Report.
- Coppock, D.L. 1993. Vegetation and pastoral dynamics in the Southern Ethiopian rangelands: Implications for theory and management. In: Behnke, Scoones & Karven (eds.) *Range ecology at disequilibrium: New models of natural variability and pastoral adaptation in African savannas*. London, ODI.
- Coppock, D. L. 1994. *The Borana plateau of Southern Ethiopia; Synthesis of pastoral research, development and change, 1980-91*. ILCA-Addis Ababa. Ethiopia.
- Dahl, G. 1979. *Suffering grass: subsistence and society of Waso Borana*. Stockholm Institute for Social Anthropology. University of Stockholm. Stockholm.
- Diress, T.A. 1999. *Impact of land use on vegetation resources with emphasis on woody vegetation in the semi-arid area of Aba'ala district, North Afar, Ethiopia*. M.Sc. Thesis. University of Nairobi. Department of Range Management. Nairobi, Kenya.
- Guinand, Y.F. 2000. Afar pastoralists face consequences of poor rains: Rapid assessment mission. UN-EUE field mission report, 19 to 24 April. Addis Ababa.
- Helland, J. 1997. *Development issues and challenges for the future in Borana. A report prepared for Norwegian Church Aid-Ethiopia*. Bergen: Chr. Michelsens Institute.
- Helland, J. 2000. Institutional erosion in the drylands: The case of the Borana pastoralists. In: Manger, L. and Ahmed, A.G.M. (eds.) *Pastoralists and environment experience from the greater horn of Africa. Proceedings of the regional workshops on African drylands*. Addis Ababa and Jinia.
- Kamara, A., McCarthy, N., and Kirk, M. 2000. *The effect of environmental variability on livestock and land-use management: The Borana plateau. Southern Ethiopia*. Article downloaded from Internet.

- Manger, L. 2000. East African pastoralism and underdevelopment: an introduction. In: Manger, L. And Ahmed, A.G.M. (eds.) *Pastoralists and environment: experience from the Greater horn of Africa. Proceedings of the regional workshops on African drylands*. Addis Ababa and Jinia.
- Oba, G. 1990. Changing property rights among settling pastoralists: An adaptive strategy to declining pastoral resources: In: Baxter, P, and Hogg, R (eds.). *Property, poverty and people: changing rights in poverty and problems of pastoral development*. Department of Social Anthropology and International Development Centre. Manchester University.
- Sandford, S., and Habtu, Y. 2000. *Emergency response interventions in pastoral areas of Ethiopia*. Report of the pastoral appraisal team. DFID.
- Scoones, I. 1994. *Living with uncertainty; new directions in pastoral development in Africa*. Intermediate Technology Publications. IED. UK.
- Yemane, B. 2000. Resource shrinkage and possible causes of conflict in the Afar National Regional State. In: Dires, T., and Mitiku, H (eds.). *Proceedings of the National Workshop on Gender, Resource and Conflict Management, Dryland Husbandry Project (DHP)-Ethiopia*. Mekelle University, Unpublished.