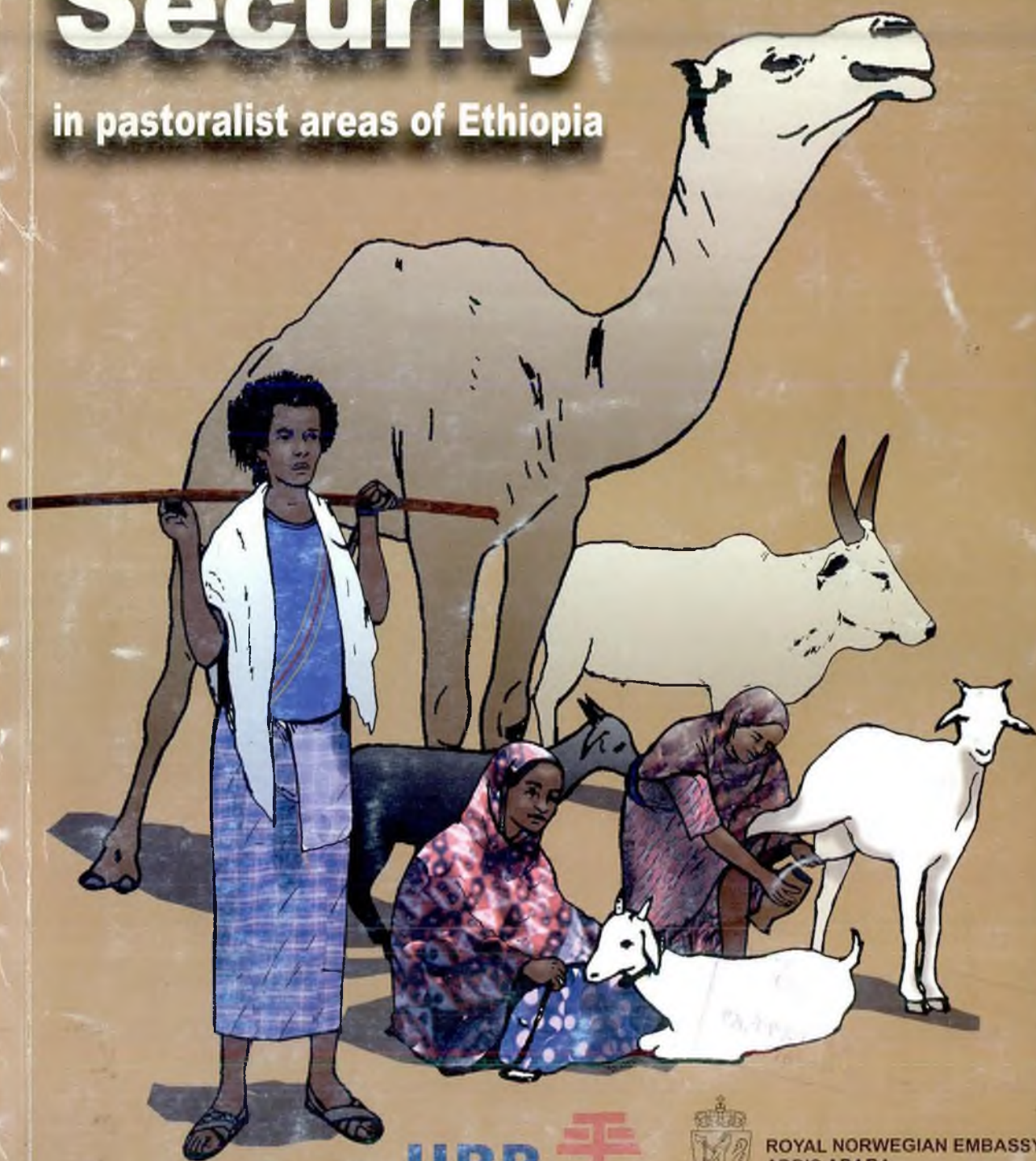


# Food Security

in pastoralist areas of Ethiopia



IIRR



ROYAL NORWEGIAN EMBASSY  
ADDIS ABABA

# FOOD SECURITY

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# FOOD SECURITY


## IN PASTORALIST AREAS OF ETHIOPIA



INTERNATIONAL INSTITUTE OF RURAL RECONSTRUCTION



**ROYAL NORWEGIAN EMBASSY  
ADDIS ABABA**

**IIRR**  **International Institute of  
Rural Reconstruction**

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The International Institute of Rural Reconstruction is a non-profit, non-governmental organization that aims to improve the quality of lives of the rural poor in developing countries through rural reconstruction: a sustainable, integrated, people-centred development strategy generated through practical field experiences. Based in the Philippines, IIRR has regional offices in Africa (located in Nairobi), Latin America (Quito) and Asia (Silang, the Philippines). IIRR's Africa office is committed to strengthening the institutional capacity of partner organizations through knowledge generation, acquisition and sharing.

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# Foreword

The Afar and Somali Regions of Ethiopia have repeatedly been seriously affected by drought. They remain vulnerable areas with regard to food security.

The Norwegian government has decided to strengthen its focus on rural development, agriculture and food security in its development cooperation, since these areas constitute the backbone of the economies of developing countries and are crucial in the struggle to eliminate poverty.

The Norwegian Embassy in Ethiopia has financed a study of the best practices applied at present in Afar and Somali Regional States with regard to food security. The dissemination of the findings of this study is the purpose of this book.

The study is an important step in developing a strategic long-term support to food security programmes in these areas. Further developing and improving the livelihood of pastoralists in arid and semi-arid areas, and strengthening their coping mechanisms, pose challenges to federal government, local administrations, tradition pastoralist societies and aid agencies alike.

Some of the factors contributing to the increase of vulnerability of pastoralist communities include:

- Recurrent droughts
- Poor infrastructure and road communication networks
- Unsuitable administrative organizations
- Internal conflicts
- Encroachment of agriculture on grazing lands
- Limited market integration
- Limited access to education and often unsuitable curricula
- Limited political influence of pastoral communities
- Poor understanding of pastoralist ways of life
- Limited alternative production systems and income.

These factors contribute to progressive marginalization of the pastoralist communities and often result in poorly designed relief and development interventions that are meant to protect assets and to contribute to sustainable livelihoods in pastoralist areas.

IIRR has a long experience in developing best practice studies that are suitable to various target groups. We think that the participatory approach that they have developed is an excellent method for linking research and field practice where scientists, indigenous specialist, NGOs and extension staff learn from one another as they work together.

This study has been implemented in several stages. Relevant material related to food security in the Afar and Somali regions were gathered and reviewed, and some main themes related to food security and best practices were determined.

The writeshop that resulted in this book developed and compiled a large range of field experience, analysed it and put it into an easily understandable form, the result of which you now hold in your hands.

I would personally like to thank IIRR for organizing the writeshop and producing this book. I would also like to thank the writeshop participants who contributed with their invaluable knowledge and experience for the future benefit of food-insecure communities in Ethiopia.

Mette Ravn

AMBASSADOR OF NORWAY



# Acknowledgements

The International Institute of Rural Reconstruction Africa Regional Center, would like to acknowledge many people and organizations who have contributed directly and indirectly to this book. They include:

- The Royal Norwegian Embassy, which provided the stimulus for this book and support throughout its preparation.
- The writeshop steering committee.
- The participants and staff of the preparatory meetings that developed ideas for the book.
- The staff of IIRR's Africa Regional Centre in Nairobi, and its Ethiopia office in Addis Ababa.
- Staff of the regional bureaus in Afar and Somali regions.
- Participants and staff in the writeshop that developed the draft book (these are listed on page xii and in the Appendix).
- The many pastoralists, extension personnel, scientists, government officials and NGO staff whose combined skills and experiences are reflected here.

Sincere appreciation to these and to all others who contributed to this book.

# Preface

This book stems from the Norwegian Embassy's interest in solving the long-standing food security problems in Ethiopia's pastoralist areas. The Embassy recognized that there was a great deal of experience in this area, and wished to base its interventions on this knowledge. It approached the International Institute of Rural Reconstruction (IIRR) for help in documenting the best and innovative food security experiences, challenges issues and lessons. The documentation focused on the Afar, Somali and Boorana pastoralist areas of northeastern, southeastern and southern Ethiopia. (Few themes of the south Omo pastoralists are included.)

## Preparation

Initial discussions with various stakeholders in Addis Ababa identified a set of topics that are critical to food security in pastoralist areas. A series of consultative meetings with NGOs and government bureaus were then held in the capital and in the Afar and Somali regions. These meetings identified key themes, issues, lessons and knowledge gaps in food security. They also identified cases that illustrate successful approaches, as well as individuals or organizations that had relevant knowledge and experience.

Over 40 people volunteered to write cases about their experiences, organizations and localities. IIRR provided the authors with guidelines so the manuscripts would be relevant and written in a style that could be adapted for this book.

A steering committee of five persons, headed by Ayele Gebre-Mariam, reviewed and selected cases for presentation during the writeshop.

## Production writeshop

This book is the product of a 10-day intensive 'writeshop', which involved over 40 pastoralists, researchers, extension specialists, government officials, NGO staff and field practitioners, supported by a staff of artists, editors and desktop-publishing specialists. The writeshop was held in Addis Ababa on 13–22 October 2003.

During the writeshop, each participant presented his or her draft manuscript using overhead transparencies of each page. Copies of each draft were given to the other participants, who commented, critiqued, asked questions, and suggested revisions. After each presentation, an editor and the presenter incorporated the audience's comments and together restructured the manuscript so it would fit in the book. An artist drew illustrations to accompany the text. The

edited manuscript and artwork were then desktop-published to produce a second draft. Meanwhile, other participants were also presenting their manuscripts to the group. Each author worked in turn with the team of editors and artists to revise and illustrate the text.

Each participant then presented his or her revised draft to the group a second time, also using transparencies. Again, the audience critiqued it and suggested revisions. After the presentation, the editor, artist and desktop-publishing specialist again revised the manuscript and developed a third draft. Towards the end of the writeshop, this third draft was made available to participants for final comments and revisions. After this, minor editing and adjustments were necessary before the finished manual could be printed.

The plenary generated ideas for new topics to cover, and individuals or small groups volunteered to draft text on these topics. These were also presented to the other participants for their comments. The contents of the book are drawn both from the original manuscripts and from this rich source of information developed during the writeshop itself.

Through this process, individual manuscripts were revised substantially, and the information they contained was combined with ideas from other sources and was distributed throughout the toolkit. A single section in the book may contain information provided by many different participants. This means it is not possible to label a particular section as the work of a particular participant. The 'authors' of the book are thus the participants listed on page xii.

## **Writeshop advantages**

This writeshop approach has several advantages over conventional methods of producing a publication. It speeds up the production process, taking full advantage of expertise of the writeshop participants. The process of writing, getting comments, revising and illustrating takes place at the same time, considerably shortening the often-difficult process of writing, editing and publishing. A large number of writeshop participants contribute to each topic: in effect, the writeshop provides an opportunity for technical peer review by a large number of reviewers, as well as pretesting for understandability and field relevance by a group of the intended readers.

In addition, the writeshop brings together a large number of people from various institutions and walks of life, each with different perspectives and expertise. It is an excellent training and networking opportunity, with individuals learning about each other's work and exchanging ideas and experiences that will be of value for them when they return to their work. It is hoped that the relationships and networks forged during the writeshop will continue long into the future.



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For further information and contact details, see the Appendices.

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# 1

## **Introduction**

**T**HE LOWLANDS of eastern and southern Ethiopia have long been neglected. Development efforts have focused mainly on the more densely populated highlands, where sedentary agriculture is the norm. Pastoralist areas seem to attract attention only when they are afflicted by droughts or conflicts.

The lowlands are arid to semi-arid with highly variable and uncertain rainfall, averaging from 100 to 700 mm a year, but with periodic droughts that may last for several years. Temperatures may rise to 50°C in the Afar lowlands. Population densities are low, with around 6.5 million people inhabiting about 450,000 km<sup>2</sup>.

The people who live here have adapted to this harsh and fragile environment. Pastoralism is the most appropriate form of livelihood. Afar, Somali and Boorana pastoralists herd their livestock throughout the rangelands in search of grazing and water. These areas are home to between one-third and one-half of Ethiopia's cattle, half of its sheep and goats, and all the camels.

There are traces of cultivation around villages where population densities are relatively high, and in valleys and along rivers where the agroecological conditions permit crop growing. A few scattered towns provide markets and services for the pastoralists. Infrastructure is poorly developed: there are few roads, limited electricity and water supplies, and poor communications, health and veterinary facilities. Most adults are illiterate, and few children (especially girls) are able to attend school.

Food security is a persistent problem in pastoralist areas. Chronic food deficiencies are exacerbated by drought: between 1980 and 2000, three major droughts struck these areas. Boorana pastoralists lost up to two-thirds of their animals. The plight of the people on each occasion stimulated major donor-funded relief efforts.

### Pastoralist areas of northeastern, southeastern and southern Ethiopia

Pastoralist area	Area (000 km <sup>2</sup> )	Human population (millions)*	Livestock population (million TLU)**
Afar Region	96	1.22	1.16
Somali Region	282	3.69	6.99
Boorana Zone*	69	1.66	2.60
Total	447	6.57	10.75

\* Six pastoralist *woredas* only.

\*\* 1 tropical livestock unit (TLU) is equivalent to 1 zebu cow or 10 goats.

Source: Pastoral Community Development Project in Ethiopia, Ministry of Agriculture, 2001



*Pastoralist areas in northeastern, southeastern and southern Ethiopia*

Pastoralists have many ways to deal with food insecurity. They maintain large herds, so they can maximize the use of the available pasture and water in good years, and in the hope that at least some animals will survive the bad. They are highly mobile: they migrate in search of water and pasture, both on a regular seasonal basis, and in response to drought. They seek other sources of food and income: growing crops in a few favoured areas, harvesting wild foods, making handicrafts, selling animal products, and working in the towns. Pastoralist groups have strong social institutions that lend support in times of need.

Pastoralist areas are prone to droughts, but these seem to be getting more frequent and severe. After each drought, it gets more difficult for pastoralists to rebuild their herds, so they are less able to take advantage of the more abundant grazing when it does rain, and they are less able to withstand the next drought. The number of cattle and other animals has fallen. As a result many pastoralists are short of food and are dependent on food aid.



## About this book

This book describes how local people and development organizations have found ways to improve food security in face of this adversity. It describes the experiences of over 30 development organizations and projects in the Afar and Somali Regions and the Boorana Zone of Oromiya Region. It also offers a series of suggestions that government, donors and development organizations may consider when designing and implementing development interventions.

The remainder of this book is divided into eleven chapters.

- 2 Water** The most critical resource in pastoralist areas. This chapter describes various approaches to developing water supplies in pastoralist areas, with emphasis on how these are managed.
- 3 Livestock** The mainstay of the pastoralist economy. This chapter covers improving fodder security, destocking (reducing livestock numbers before a drought hits), restocking (helping people increase their herds again after the drought), and animal health services.
- 4 Rangeland and resource management** Rangelands provide almost all of the fodder for pastoralists' livestock, but they are under increasing threat from degradation, erosion and encroachment. This chapter covers ways to manage rangeland, conserve biodiversity, prevent bush encroachment, and protect forests.
- 5 Crops** Crops are an increasingly important part of pastoralist areas. Agropastoralists (people who rely mainly on livestock but who also grow crops) and sedentary farmers grow crops in favourable areas, as do pastoralists themselves if they think it is worth it. Crops have various important interactions with pastoralism: they contribute to food security, provide fodder for animals, and benefit from the dung of animals grazed on crop stubble.
- 6 Alternative foods** This chapter describes some foods that pastoralists use during times of stress. They include various forms of preserved meat, food made from grain, and fruits and roots gathered from wild plants.
- 7 Income diversification** Diversifying incomes is one way to reduce the risk of over-reliance on livestock. This chapter outlines some alternative sources of income, from transport services to handicrafts, that could be developed further. It also discusses ways to help pastoralists exploit these income opportunities, such as improving markets, supporting savings and credit schemes, and promoting cooperatives.
- 8 Institutions** Developing institutions, but at the same time respecting traditions, is key to ensuring food security. This chapter addresses traditional institutions among the Afar, Somali and Boorana, the issue of gender and the role of women, and the disturbing influence of *chat* chewing.
- 9 Services** Food security is closely related to the availability of services such as health and education. This chapter focuses on three alternatives to providing these services within pastoralist areas, where the population is highly

mobile: adaptations of the normal static services, mobile camps staffed by outsiders, and training barefoot teachers and health workers who migrate along with the community.

- 10 **Conflicts** Conflicts have a major impact on food security. They disrupt productive activities, destroy livelihoods, and injure and kill the most productive people in the community. This chapter describes some ways to mitigate conflicts, with emphasis on using traditional conflict-resolution mechanisms.
- 11 **Policies and advocacy** Pastoralist areas have long been neglected by governments. There are special problems in running development interventions in peripheral, pastoralist areas. This chapter offers some suggestions for policy changes needed by central and local governments and by development agencies.
- 12 **Appendices** These list some further reading and give contact details of the writeshop participants.

This book does not attempt to be exhaustive, either geographically or in terms of topics. It reflects the particular skills and experiences of the people who attended the writeshop. Nevertheless, it is hoped that its coverage is sufficiently broad to provide some ideas on how to approach development in Ethiopia's pastoralist areas.

**2**

**Water**



**P**ASTORALIST AREAS are defined by water – or rather, by the lack of it. Water scarcity of water and the frequent droughts mean that pastoralism, not crop farming, is the dominant form of economic activity.

People in these areas need water for their livestock, to grow crops, and for domestic use – drinking, washing and cooking. They have developed many ways of collecting and conserving water. They dig wells, harvest runoff, and even collect steam from geothermal vents.

Because they are mobile, pastoralists can migrate in search of water and grazing. During droughts, they gather near the few reliable wells and other permanent or semipermanent sources of water. They also reduce the amount of water their animals use by watering them less frequently during dry periods. Nevertheless, the concentration of people and animals around a few sources of water leads to erosion and the spread of disease.

A web of traditional knowledge and community institutions underlies water management methods. Water resources are often managed communally, and there are rules about who is allowed to water their animals at a particular place. Access to water is often controlled by clan elders, who negotiate with leaders of other groups over access rights. Groups share their water with others, on the understanding that the guests will reciprocate if their current hosts are in need.

Many traditional water collecting methods are ingenious. But they are limited by the amount of capital that pastoralists can afford to invest in them. Indeed, people may not be ready to use even simple technologies. For example, adding pulleys to Afar wells was not accepted: people preferred to haul water using the traditional rope and bucket.

The cases in this section describe some of these methods, and ways that development organizations have tried to build on them.

## **Riverbed wells in Korahai zone**

Riverbed wells are a vital source of water in the dry season for people and animals in Kebri Dehar district, Korahai zone, Somali Regional State. The Fafen River flows through the district in the wet season, and local people use the water to grow sorghum and maize. But the river dries up from December to April, when the rains in the neighbouring Oromiya Highlands end. Water becomes scarce.

At the start of the dry season, the pastoralists dig wells, known as *eel*, in the dry river bed to reach water. These wells may be 10–20 m deep. They are important sources of water for people and animals alike in the dry season.



The elders decide where each well should be sited, then the men dig them using traditional methods. For example, if they come across a large stone while digging, they light a fire on it and then pour water on it so the stone cracks. They can lever out the broken pieces of stone and continue digging.

Traditional wells are unlined and have no apron around the wellhead. The clan tries to protect them by putting metal bars and branches around the rims. But soil falls in, dirtying the water, and the walls may collapse. When the river floods, the wells fill with silt, so have to be dug out again in the dry season. Digging out a silted well can take 3 weeks. But that is easier than digging a completely new well, which can take 2 months.

Once dug, a well is managed by the clan that dug it. Outsiders must ask the clan elders for permission to use the well. Elders from the two clans negotiate when and for how long the 'guests' may use the water. The guests do not have to pay, but they are expected to show similar hospitality if their hosts' well runs dry.

Action Contre la Faim has improved existing wells by lining them to prevent collapses, and adding a concrete apron. The water stays clean, and a lid prevents silt from getting in when the river floods. In the dry season, the clan just has to remove the lid and clean out a small amount of debris before beginning to draw water. Making the well deeper (down to 30 m) also ensures water supplies for a longer period.

The riverbed wells mean that pastoralists can stay in a particular area and use the pasture nearby. Without the wells, they would either have to buy expensive water from private *birkads/birkas* (concrete water tanks and cisterns), or migrate in search of water. That would risk conflicts with neighbouring clans.



This riverbed well has a concrete apron and is lined to keep the water clean

The level of water in the wells provides an important early warning for drought. If the water falls below a certain level, the elders may be reluctant to share the water with 'guests', who will have to look elsewhere for water. If levels continue to fall, the clan itself may be forced to migrate. The government can monitor water levels to predict water supply problems.

## Water management in Boorana

Except for the Genale and Dawa rivers, the Boorana rangelands lack permanent surface water. The pastoralists therefore rely on a series of hand-dug ponds (known as *haro*) and wells (*tulla* and *ella*). There are 540 such wells and ponds in the Boorana rangelands.

Dire *woreda* has nine clusters of *tulla* deep wells that are famous because they never run dry. There are up to 40 wells in each cluster. Seven of these clusters, at Web, Er Der, Dhas, Madacho, Borbor, Melbena and Wachile, are vital sources of water in the dry season for Boorana pastoralists. The wells at El Leh and El Gof have been included in the Somali Region after ethnic boundaries were established. The Boorana no longer use these wells much, and resent this loss.

The wells belong to clans, while ponds belong to the individuals that built them. Clans that do not own wells must negotiate with the owners if they wish to use the water. Each well or pond has its own *aba herega* (water-use regulator), who is appointed by the clan.

## Harvesting steam in Afar

The Afar Region may be one of the driest parts of the world, but it does have an unusual source of water: volcanic steam.

In this geologically active area, steam vents from the ground through porous rock, forming a wet patch of ground. Afar pastoralists look for the telltale wet ground, then dig down as little as 50 cm to tap a steam vent. They then build a rock 'house' over the vent to catch the condensation. The Afar region has over 400 such steam wells, known as *boyna*.

Adding a cement lining to the house can increase the amount of water captured. The water can be taken out through a hose and used for drinking or watering livestock. A single steam well can yield as much as 75 litres of good-quality water a day.

Action Contre la Faim and the Afar Pastoralist Development Association provide training, cement and hoses to help pastoralists rehabilitate old steam wells and build new ones. This will help increase the water output from the wells, so local people will have to rely less on their only other source of water, the dirty water that collects in puddles after it rains.





Harvesting water from a steam well

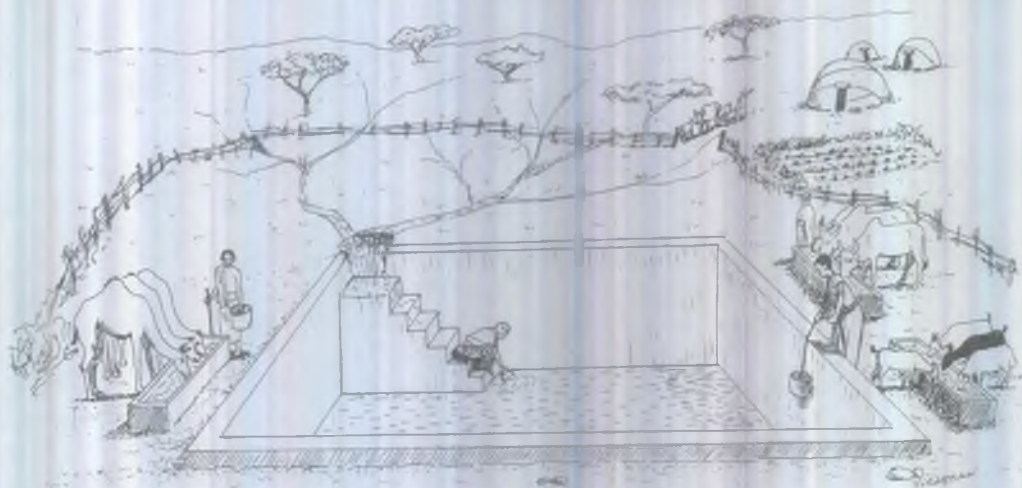
## Birkas

A *birka* is a water basin dug into the ground, lined with concrete. It collects surface water during the rainy season. *Birkas* may be large or small; a typical one can hold 400 m<sup>3</sup> of water and can supply 50–60 families during the dry season.

*Birkas* have long been an important source of water for pastoralists. In the Somali region, *birkas* began to be used 40 years ago. Individual community members build *birkas* for their own use. The government and NGOs also construct *birkas* for the community as a whole.

The water in *birkas* is used for many purposes.

- **Human consumption** People can use the water to drink, wash and cook. A *birka* provides a reliable source of water. If it is properly managed, it can be relatively clean and safe to drink.
- **Irrigation** Large *birkas* are used to water cereal crops such as wheat, barley, tef, maize and sorghum, vegetables such as cabbage, onion, carrot, tomato and potato, and fruit trees such as lemon and banana. In the Somali region, *birkas* are used for irrigation in Jigjiga, Shinele, and Liban zones. People use the *birkas* to cultivate small plots in the dry season. They may use drip irrigation or fill jerry cans to water the plants.
- **Livestock** *Birkas* are used to water cattle, camels, sheep and goats. Each *birka* has small troughs nearby for watering animals. This means that pastoralists do not have to move in search of water.
- **Income** The owner of a *birka* can sell water to other people in the community. The price of water varies: it is cheap (perhaps 0.10 birr for 5 litres) in the rainy season, but expensive (0.50 birr for 5 litres) in the dry season. Depending on the size of the *birka*, the owner may be able to recover the cost of building it within 2–4 years. Payment for water may be in cash or in kind.



Layout of a birka

A group of several *birkas* attracts pastoralists and other people to settle and to trade. Small market centres grow into villages, and villages grow into towns. Small enterprises spring up to trade and process milk and meat. Pastoralists visit the town to sell their livestock and buy grain and other items they need. The government can provide services such as education and health.

Kebribayah is an example of how *birkas* encourage sedentarization and urbanization. This pastoralist town, 60 km from Jijjiga in the Somali region, has some 35 *birkas*. The town has developed in the last 30 years because of the concentration of *birkas* and an influx of refugees.

*Birkas* also result in marked social and behavioural changes. The availability of water means people can wash and bathe more often. Women, who are responsible for fetching water, find they have a venue and opportunity to discuss experiences and share news.

Sanitation is an important aspect of *birkas*. Efforts to keep the water clean include:

- Fitting a silt trap or filter to remove sediment from the water before it enters the *birka*.
- Covering the *birka* with a roof of corrugated metal (this also reduces evaporation).
- Providing separate watering points (or even separate *birkas*) for humans and animals.
- Educating water users in hygiene and sanitation.
- Training the *birka* managers in appropriate maintenance.

The government and various development agencies have promoted the construction of *birkas* in many areas. For example, people in the Aror pastoralist



community have built *birkas* through a food-for-work scheme funded by Save the Children-UK. When they are finished, such *birkas* are handed over to the community.

*Birkas* face several constraints:

- Making a *birka* costs 10,000–30,000 birr, depending on its size. Only rich individuals can afford this, and only the rich are likely to have the skills to manage the *birka*. Because they can charge for water, *birka* owners are likely to get still richer compared to people who must buy water.
- Managing communal *birkas* can be difficult. Local people may not feel responsible for maintaining *birkas* that have been handed over. The management committee must collect fees from users and use the money to maintain the *birka*. People may not be able or willing to pay for a commodity they think should be free, or for what they regard as a communal resource. The committee may not have the skills to manage the *birka* or the funds generated. *Birkas* may also trigger conflicts, for example if the *birka* owners try to stop other people using water collected from communal lands.
- *Birkas* can be a source of water-borne diseases. Users sometimes pour the unused water from livestock troughs back into the main *birka*. The design of the *birka* and the watering points may not keep the water clean. Simple measures, such as adding a roof, filters and taps, and educating people how to keep the water clean, are needed in many locations.
- *Birkas* can result in environmental degradation in the surrounding area. They attract large numbers of people and livestock, especially during severe droughts. The vegetation nearby is destroyed and the soil is trampled, resulting in wind erosion and (when the rains return) soil erosion. Drawn to the *birka* with its easily obtainable water, pastoralists may under-use more distant pastures.

*Birkas* are appropriate where it is not possible to dig wells, or where porous soils mean that dams are not feasible. They are particularly useful in towns and in agropastoralist areas where at least some of the people are settled.

## **Haffir dams**

Somali pastoralists have traditionally dug community-owned ponds and earth dams. But these have disadvantages. Animals can drink from the ponds directly, stirring up mud and dirtying it with their faeces. People have no alternative but to use the contaminated water. The ponds are small, so often dry out before the end of the dry season. Over time they get clogged with silt, so hold less and less water. Ponds enable animals to be kept in a specific locality for 1–2 months longer during the dry season. If the water lasts throughout the year, then the livestock stay all year round. This may have a devastating effect on the environment.

A *haffir* dam is a large dam that stores water for use during the dry season. The reservoir behind the dam can store from 45,000 to 75,000 m<sup>3</sup> of water. That is enough to supply 10,000 or 20,000 people and their animals for 3 months.

*Haffir* dams are an improvement on the traditional ponds.

- The reservoir is bigger than a traditional pond, so can supply more people for a longer time. It is lined with clay, so little water leaks away into the ground.
- A silt trap collects silt carried by runoff and prevents it from entering the reservoir. That keeps the water in the reservoir clean, and stops the reservoir from getting silted up. The silt trap must be cleaned out every year after the end of the rainy season.
- A concrete pipe connects the reservoir to two shallow wells. A wind pump raises water from the wells and feeds it into a storage tank. From there, pipes carry it to taps for humans, and to separate watering troughs for different types of animals.
- The reservoir is fenced off to prevent people and animals from getting to it. That keeps the water clean. The fenced area around the reservoir can be used as a fodder bank for cut-and-carry feeding, or for tree nurseries. The catchment area should also be protected with fencing or with conservation measures to control erosion.

*Haffir* dams were introduced into Ethiopia by UNHCR from Sudan (*haffir* means 'excavation' in Arabic). UNHCR built five dams to serve refugee camps in the southeast of the country in 1997. Hope for the Horn, a local NGO, has since rehabilitated several existing dams and built four new ones in Gashamo, Aware, and Jigjiga districts.

The dams can be built by hand (though this is a lot of work) or using heavy machinery (quicker but more expensive). A hand-built dam costs about 1.5 million birr; using machinery costs 3.5 million birr.

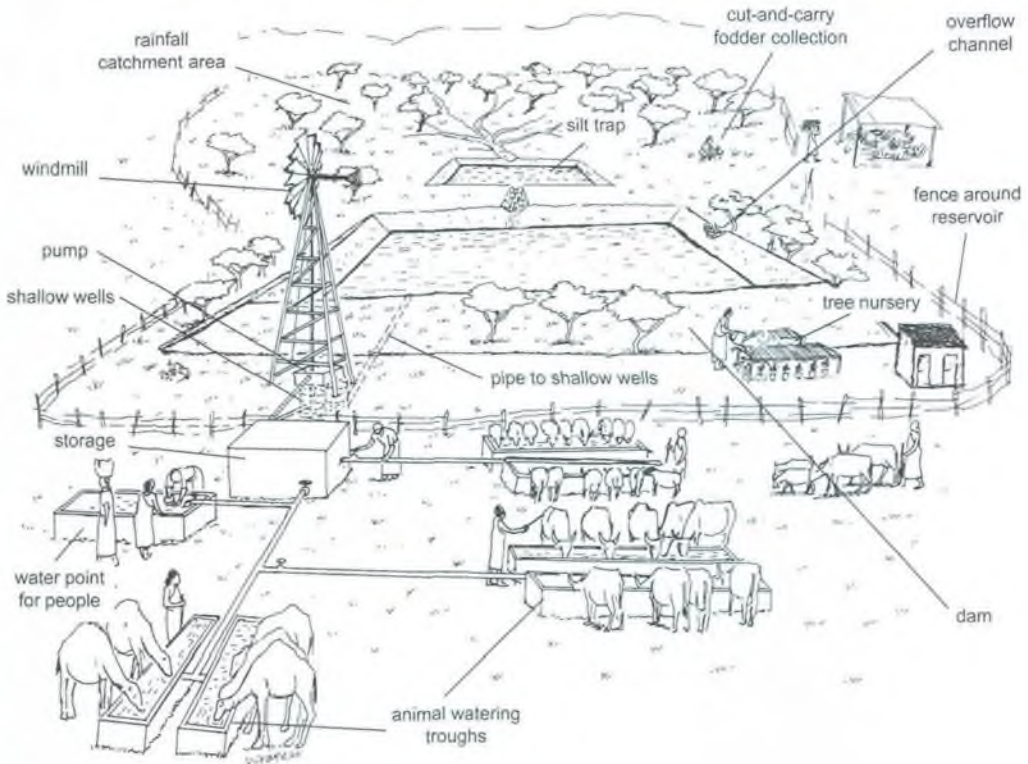
Once built, the dams are handed over to the community. They are managed by 'water and environment' committees trained by Hope for the Horn, under the supervision of the *kebele* administration.

The committees sell water at prices fixed by the community themselves. The water is much cheaper than the alternative supply. Before a *haffir* dam was built in Gashamo district, for example, privately run water tanks would charge up to

### Traditional ways to get clean water

- Put a sackful of lime in the water tank.
- Keep fish in tanks to eat worms and mosquitoes.
- Filter water through a layer of stones to catch silt.





Layout of a haffir dam

80 birr for a barrel of water in the dry season. The same barrel now costs less than 15 birr. Pastoralists who use the dam can save up to half their income and use it to buy food and other essentials.

The Bannano Boarding School, a secondary school in Gashamo district, is served by the 45,000 m<sup>3</sup> Dubat *haffir* dam. This school teaches children of pastoralists from five surrounding districts. Without the dam, it could not exist.

The *haffir* dams are so popular that local people demand more dams be built. The dams have attracted a lot of media attention, and the government has begun building several new dams.

## Water management by the Afar

In order to use rangeland in a sustainable way, Afar pastoralists must plan their use of water carefully. The existence of perennial or seasonal water sources means that pastoralists can use a rangeland, even if it is a long way from their main sources of water. When water becomes scarce in the area, the pastoralists must move somewhere else, even if there is still plenty of pasture.

It is easier for the Afar to control access to artificially dug water sources than natural ones. User groups tightly regulate the use of rainwater harvested in shallow ponds (*horoyo*). Rules cover when it can be used, the number and age of animals allowed to use it, and how the *horoyo* is to be maintained.

More flexible rules govern the use of natural water sources. Similar to the Boorana, the Afar often coordinate the work of watering stock at deeper wells to avoid overcrowding, overgrazing and conflict.

In drier areas, herders water their animals less frequently in order to reduce the amount of time the animals have to walk to get to the water. Less frequent watering means that the herd can be kept on grazing land further away – the animals walk further to the water source, but less often. That reduces the danger of overgrazing and erosion near the water source itself.

## Private good or communal right?

Is water a private good, or does it belong to the community? In many places, it can be both (see the table on the next page).

Some families have invested large sums in rainwater tanks, known as *birkads*. These collect water from various sources: rainwater from rooftops, floodwater, or water trucked in by lorries. The owners use the water themselves, and may sell any surplus.

Where the community has built a tank or well, however, the water belongs to the whole community. All the community members can use the water. They share their water generously: sharing is a tradition among pastoralists, and outsiders are often given priority when watering their livestock. Local people know that if their own wells run dry, they may be forced to rely on the neighbouring clans showing the same generosity.

There has been much investment by government and development agencies in water provision. Unfortunately much of this has not proved sustainable. A typical approach is to build a water supply system, such as a borehole or reservoir, then hand it over to the community. All too often this fails: the committee is unable to collect enough user fees to pay for repairs when the pump breaks down; spare parts are not available; or people lack the technical skills needed to keep the equipment running and the organizational skills needed to manage the facility.

Government ownership is most appropriate for large facilities, such as large *haffir* dams and urban water supply schemes, that communities cannot build or maintain by themselves. Even though the government may own such facilities, it is best if the community is also involved in managing it and feels responsibility for it.



## Private, communal or government approaches to supplying water

	Private	Communal	Government
<b>Characteristics</b>	<p>Individuals invest to build <i>birka</i> or dig well</p> <p>Owner can use water for own use or sell it to others</p>	<p>One person (the <i>konfi</i> in Boorana) initiates construction</p> <p>Community members collaborate to build <i>birka</i> or dig well</p> <p>All community members have right to use water, with access controlled by the <i>konfi</i></p> <p>Management by person or committee appointed by community</p> <p>Community members must contribute labour, cash and resources to maintain facility</p> <p>NGOs and government fund the construction of facilities and then hand over to the community</p>	<p>Government builds well, tank or pond</p> <p>Government employees paid to maintain and manage the facility</p>
<b>Advantages</b>	<p>Individuals willing to invest in building <i>birkas</i> and digging wells</p> <p>Individuals can earn income from water sales</p> <p>Provision of water determined by the market</p> <p><i>Birkas</i> and wells can be bought and sold</p> <p>Water from large number of small, scattered facilities available in dry season</p>	<p>Fits with tradition</p> <p>Facilities can be larger than an individual can afford, and can serve the whole community</p> <p>Traditional management and user rights understood by all</p> <p>Community punishes people who misuse facility</p>	<p>Government has clear mandate to maintain its property</p> <p>Government can coordinate location of water supplies</p>
<b>Disadvantages</b>	<p>Sanitation is good</p> <p>Conflicts with tradition</p> <p>Only better-off people can afford to build facility</p> <p>Poorest people cannot afford to buy water</p> <p>Spread of private supplies undermines traditional system of water provision and use of rangelands</p> <p>Conflicts arise between owner of <i>birka</i> and the (sometimes communal) owners of the catchment area</p> <p>Lack of overall control and coordination</p> <p>Uncontrolled development may damage environment</p>	<p>Handover by NGO or government may fail because community does not feel ownership</p> <p>Conflicts may occur over decisions made by hereditary water manager (the person who initiated the construction)</p>	<p>Water may be wasted</p> <p>Government finds it difficult to charge user fees</p> <p>Government short of funds and skills to maintain facility</p>
<b>Where and when appropriate</b>	<p>Small watering facilities, especially around towns</p> <p>Water supplies for schools and other institutions</p> <p>In areas where water is relatively abundant</p> <p>In agropastoralist areas</p>	<p>Major facilities to serve traditional dry season grazing areas (e.g., <i>eel</i> in Somali, <i>tulla</i> wells in Boorana)</p> <p>Purely pastoralist areas where private ownership is not practical</p>	<p>Large facilities, such as <i>haffir</i> dams, especially in towns and at strategic points in rangelands</p>

## Suggestions on water management

Paradoxically, the answer to the lack of water resources is not necessarily to build more reservoirs and dig more boreholes. Unless sited and managed carefully, they may merely attract more people and animals, on a permanent basis, further exacerbating the problem of resource degradation.

One solution is to develop water resources but restrict their use during all but emergencies. This prevents the formation of permanent settlements, and provides water in a grazing area that would otherwise remain unused during a severe drought. This echoes an approach used by pastoralists themselves: during the wet season, when grazing is abundant, they keep their animals away from the dry-season wells. That gives the vegetation around the wells time to recover so there is pasture available when the wells are opened in the dry season.

More suggestions:

- When planning water facilities, consider how they will be managed, and who will be responsible for maintaining them.
- Develop new water resources only in close consultation with local people. Decide on siting, design, management and access jointly with them.
- Build on traditional organizations to manage water, rather than creating new ones.
- Involve local people in the construction and management of water resources, and ensure that they are able to take over full management and maintenance once construction is completed.
- Provide training and education in hygiene and sanitation to ensure that new water sources do not become the epicentres of disease outbreaks.

**3**

**Livestock**

**L**IVESTOCK ARE central to the livelihoods of most people in pastoralist areas. Pastoralists are expert herders and have a rich indigenous knowledge of their animals and their environment. But they face many challenges in a precarious livelihood. This chapter covers various possible ways of improving their food security by strengthening their production system and helping them prepare for, and recover from, droughts and other disasters.

These methods include improving fodder security, supporting destocking and restocking efforts, and strengthening animal health services.

## Improving fodder security

Food security means fodder security for pastoralists. Supplies of fodder are abundant at some times of year, but dwindle during droughts. Pastoralists can increase the amount of fodder by improving the soil fertility and growing fodder crops. They can also convert surplus fodder into hay that can be stored until it is needed. This is possible for pastoralists who stay for a significant period in one place. For example, many Boorana stay in the same place for 8-10 years or more.

### Herding strategies to ensure fodder security

Strategy	Constraint
<b>Migrate</b> Migrate with herds to areas with water and grazing during the dry season	Dry-season grazing areas lost to agricultural expansion, national parks, etc.
<b>Feed tree leaves and pods</b> Cut branches off trees (especially acacia) to allow animals to eat leaves and pods	Cutting too many branches kills trees
<b>Burn pasture in dry season</b> Burn grasslands to produce high-quality re-growth.	Fires can burn out of control and damage surrounding areas. Burning is now illegal
<b>Feed with crop residues</b> Feed crop residues to animals during the dry season	Pastoralists may not be able to link up with crop growers to make use of crop residues



## Using manure

A tremendous quantity of livestock manure is deposited at the entrance of each Boorana cattle kraal. The traditional belief is that the bigger the heap of manure, the wealthier the owner of that kraal. But this manure represents a significant unused resource. Spreading it over the surface, particularly in calf enclosures, improves the soil fertility and stimulate the growth of grasses. The manure could be spread using donkeys and carts, wheelbarrows and shovels.

## Growing extra fodder in the backyard

It is possible to grow additional fodder in semipermanent settlements. Species such as hyacinth bean (*Dolichos purpureus*), elephant grass (*Pennisetum* sp.) and tree legumes can be planted in backyards. The owner fences the plot to keep animals out, and cuts the forage to feed it to the animals. This can be a valuable source of forage for sick adult animals and young calves which are unable to go out grazing. Women and elderly people, who normally stay at home, would be able to cut the forage instead of having to go out in search of grass.

To start such plots, the pastoralists would need a good source of seeds or cuttings. They should establish the plots during the main rainy season.

## Using crop residues

Maize and sorghum stover is highly valued as animal feed. Other residues include straw from tef, barley, wheat and other cereals, legume haulms, and sugarcane tops. While they provide a lot of roughage, some crop residues are not easily digestible. Treating them with urea solution can improve their feed value.



## Making hay in Afar

From April to July 2003, the Afar Pastoralists Development Association (APDA) showed the pastoralists of Ayssaita and Afambo *woredas* how to make hay. APDA used motorized pumps to draw water from the Awash River and flood several acres continuously for 15 days. Grass grew abundantly for 4 months. The grass was cut, left to dry in the sun, and stored.

Although the idea of producing and marketing hay is not yet established, the Afar are eager to adopt this technology.

Pastoralists may be able to get hold of various by-products of the grain, cotton, oilseeds and sugar industries. Molasses, bran, and seedcake are high-value feed supplements.

Many pastoralist groups migrate seasonally to farming areas which may have surplus crop residues. Various forms of economic relations between such pastoralists and the farmers are common, but could be developed further. Animals brought into farming areas to use crop residues during the dry season are kept in enclosures at night. These enclosures become heavily manured by dung and urine. This is good for crops in the following rainy season.

## Suggestions for fodder security

- Support pastoralists to use manure as fertilizer, grow fodder, and use crop residues.
- Expand small-scale irrigation to allow agropastoralists near rivers and swampy areas to produce larger amounts of fodder, cereals, and other food crops. Pastoralists can link up with agropastoralists to access alternative livestock feed. However, such schemes should not remove vital emergency dry season grazing land.
- View fodder security on a regional scale and include the utilization of surplus crop residues in farming areas to make up for seasonal deficits in the rangelands. This requires organization and management at a regional level including:
  - Surveys of the availability of surplus crop residues.
  - Development of 'feeding centres' where crop residues can be brought and made available for the herded animals.
  - Development of a market: pricing of crop residues and transportation, opportunities for sale of milk and animals.
  - Studies of the feasibility and economics of treating straw with urea to improve the quality of fodder.

## Destocking

NGOs and policy makers often try to persuade pastoralists to reduce the size of their herds in order to reduce pressure on rangeland, prevent erosion, and improve the quality of individual animals. Pastoralists often resist the idea of destocking. More animals mean they can better exploit the available resources during good times, and are better insured against drought. Because livestock equals wealth, they feel richer, have greater security, and can support less fortunate relatives. And if one area becomes overgrazed, they can move their animals to fresher pastures elsewhere.

A varied herd also has advantages. Cattle and sheep graze grass, while camels and goat browse on trees and shrubs. One species can thrive where another cannot. Because the Boorana and Afar rangelands are giving way to bush, cattle and sheep are being replaced by camels and goats.

Pastoralists do sell their animals when there is a good market. But mostly they sell only when it is absolutely necessary – to pay for medical care or veterinary services, or to buy food and household items. They also sell animals for ceremonial purposes and to pay for holiday celebrations.

They sell or slaughter only specific types of animals: dry females, kids (*bekels*), and older animals. They cull animals when there is a critical shortage of feed during drought, during disease epidemics, and if they want to invest their money elsewhere.

Pastoralists have strong mutual social obligations. The 'your pocket is my pocket' mentality is deeply entrenched. Someone who sells animals may be obliged to share the income with the sub-clan (*kaidoh*).

During drought, prices of livestock fall (because many pastoralists want to sell animals) while grain prices rise. During drought, pastoralists are reluctant to sell too early, while prices are high, as they always hope that the drought will end. But if they sell too late, their weak, emaciated animals are worth very little – or have no value at all. The timing of destocking is therefore critical.

## Making dried meat

Large numbers of cattle die during recurrent droughts. In some severely affected areas, pastoralists lose as many as 60% of their livestock. This huge waste could be reduced by slaughtering the animals and drying the meat. Dried meat, known as *quanta*, is popular all over the country and is used in a variety of traditional and new dishes. It has a long shelf life and sells well in urban areas. *Quanta* has been used as supplementary food for drought victims since the 1984 famine. Just 100 g of *quanta* provides about one-fifth of an adult's required daily calorie intake.

Cattle weakened by drought are slaughtered and the meat is cleaned, cut into strips or minced and spiced before it is dried. The resulting *quanta* can be dis-



tributed to malnourished children, women at risk, and the elderly. The non-dryable parts of the animal (such as the offal) can be given to the people who do the slaughtering. This industry reduces the cost of transporting relief food, as the animals can be slaughtered on location. Needy labourers can be employed in the purchase, slaughter, inspection, preparation and distribution processes.

In emergency drought situations, various government and aid agencies (including the former Relief and Rehabilitation Commission (DPPC)/UNICEF, CARE, and FARM Africa) have supported home-processing of *quanta*. FARM Africa used mobile slaughtering facilities, while DPPC rehabilitated and built new slaughter slabs with slicing, drying and disposal equipment. During the 2003 drought in Afar, FARM Africa bought emaciated and non-breeding cattle at a fixed rate of 200 birr per animal. The livestock owners used the cash to buy grain or other commodities. The Bureau of Agriculture provided sanitary inspection for the animals. Villagers used the fresh meat and dried the excess meat when large numbers of animals were slaughtered. They framed, dried, and sold the hides to fund community development activities.

FARM Africa has also explored the urban market for *quanta* under normal conditions. In Afar in 2003, a bull costing 800 birr yielded 25 kg of dried meat. Lean *quanta* sold at 70 birr per kilogram, and fat-mixed *quanta* at 50 birr. Together with the non-dryable parts, this fetched 1880 birr - a gross profit of over 100%. FARM and its partner, the Ethiopian Pastoralist Research and Development Association (EPARDA), use this example to encourage pastoralists to organize themselves into a cooperative to market dried meat.





## Suggestions for destocking

- Establish local financial institutions where pastoralists can save cash rather than in the form of animals.
- Develop local, national and export markets for livestock and animal products.
- Use early warning systems to predict drought. Encourage and educate people to sell when the price is good, rather than risk the total loss of animals, or forced sales at low prices.
- Provide owners with incentives to destock, in the form of food or cash in exchange for cattle.
- Assist pastoralists during drought by slaughtering animals at risk and drying the meat. This helps pastoralists to rescue at least some value from animals that would otherwise die.
- Ensure that the health of slaughtered animals is examined. This is necessary even though relatively healthy animals are slaughtered to make *quanta*.
- Label commercially distributed *quanta* to inform consumers with strict religious convictions about the preparation methods.
- Promote research on the market for *quanta* in both emergency and normal times.

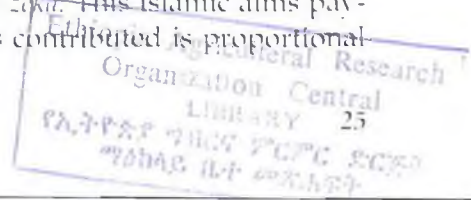
## Supporting restocking

When pastoralists lose their livestock because of a drought, epidemic, raids or looting, they face disaster. Various pastoralist groups have traditional ways to support people who have lost their livestock and other assets.

### Traditional Somali restocking

Through the *qaarman* system among the Somali, for example, destitute individuals receive aid from their community. Leaders may require community members to give a specified number of animals from each herd to the needy person. Groups of families also traditionally support one another. Individuals with many relatives can hope to get more animals to restock their herds, or other forms of aid.

In *zaqa*, religious leaders impose a form of 'animal tax' on rich people. These animals are given to those worst affected by disasters. This compulsory form of stock redistribution is also practised by the Afar as *zaka*. This Islamic alms payment is calculated like tax. The number of animals contributed is proportional to the herd size.



A 'stock alliance' is a non-market transaction established between Afar clans. It is customary for an individual to have four stock alliances – two of his own and two of his father. The system enables destitute individuals to remain within the community.

### **Busa gonofa: Traditional Boorana restocking**

*Busa gonofa* is a self-support restocking mechanism among the Boorana. It commonly operates at the *olla* or encampment level. Destitute members of the community seek support from within their clan groups. The clan council assesses the person's background, investigates the causes of stock loss and the individual's management capability. Someone who lost assets because of negligence or inappropriate sales is disqualified from assistance.

Clan members who have lost all their animals (or whose herd has been cut to an unsustainable level) first seek assistance from their closest relatives. If they fail to get any help, they go to the clan chief and presents their case in the presence of clan elders. If this fails, they next go to the assembly of clans. In the extreme case of failing to get help at this level, the destitute clan member goes to the *Gumi Gayo* – the supreme assembly of Boorana clans, headed by the *aba gada*, which convenes once every 8 years. If the *aba gada* considers the aggrieved individual's case worthy, he orders a *jinfu*: the required number of cattle is simply taken by force from a specified herd and is given to the destitute clan member. Someone who has lost all their animals is given a minimum of 5 heifers to restart a herd. Other cases are considered on an individual basis. These animals are turned over in the presence of clan representatives.

Beneficiaries are not asked to pay back a fixed number of animals, but are expected to support other community members through *busa gonofa* once their herd has built up. As a measure of gratitude to the clan, the beneficiaries are expected to demonstrate proper stewardship and reciprocal kindness to other destitute members.

### **Restocking among the Afar**

The Afar are culturally obliged to share their resources, labour and food. They do this in various ways. If an individual slaughters an animal, he welcomes people – even strangers – to join in the feast. The destitute can go anywhere in Afar and expect to be fed. The Afar have a system similar to the *idir* of other Ethiopian communities and the *dia* of Somalis. A benefactor gives lactating animals as a free gift through *hantilla*. The community restocks households who have lost animals through *irbu*. *Ees* allows a destitute clan member to take animals from a herd without the owner's permission. There are also many other mutual aid associations, such as *gere hara*, *hula hara*, *medli hara*, *digbi hara* and *rebey hara*.



## Save the Children's restocking projects

NGOs also try to promote restocking as a way of helping people regain their livelihoods after a drought. Two projects by Save the Children-UK offer some interesting lessons. These were implemented in the Somali zones of Fik, Shinille, and Jigjiga in 1997 and 2000. Save the Children adapted the traditional Somali restocking committees (*gudiga xoolo celinta*). These committees, composed of carefully chosen clan representatives, worked with participating agencies to select beneficiaries. The beneficiaries were chosen if they were willing to participate and return to their home areas, had lost many animals, and were able to care for animals (which depended on the labour they had available). Families with more children were given priority (reflecting Save the Children's focus). The restocking committees bought animals and distributed them to an initial group of beneficiaries. These were then required to pass on offspring to a second group of beneficiaries. The committees monitored the performance of the restocked herd and supervised the transfer of offspring from one group to the next.

Somalis prefer sheep and goats for restocking. These animals reproduce rapidly so herds build up more quickly than with cattle. They are easy to sell, and in times of stress, a household can sell an animal to get a small amount of cash.

In the first project, Save the Children gave each household 6-12 sheep or goats. This was far fewer than the minimum viable herd. The NGO then conducted a survey to find out how many animals would make a minimum viable herd for a completely destitute pastoralist family. It found that a minimum package consisted of 40 sheep and goats, one cow, and one male camel or donkey.

In the second project, Save the Children provided 30 sheep and goats and one pack animal for each displaced household - closer to the viable minimum (a lack of resources meant it was not possible to provide any more animals). The beneficiaries decided how many sheep and how many goats they wanted.

The animals were bought locally; this ensured that existing livestock were redistributed, and avoided overgrazing. The beneficiaries selected the animals themselves. Veterinarians dewormed and vaccinated the animals, and the restocking committees completed the handover and liaised with local-level bodies.

The project also selected individuals (mainly traditional healers) from the beneficiaries' clans, trained them for 12 days on basic animal health measures, and gave them vet kits. Save the Children also provided additional support including transport, food rations and utensils to displaced households.

The projects experienced various problems. Some animals died due to drought or disease, or fell prey to predators. Providing so many animals cost an average of 3200 birr per household. This cost limited the number of people who could benefit. Although the beneficiaries were carefully selected, it was difficult to deal with the complications of resources sharing, mobility, and group/clan relationships. Only 40% of the initial beneficiaries handed over offspring to second-level beneficiaries.



Despite these problems, the households benefited from the project assistance. Each ewe produced an average of 8 lambs; each doe produced 10 kids. Families obtained an adequate supply of milk and young animals for sale. The beneficiaries used the money to buy food, clothing and shoes, to pay for veterinary and medical care, and to purchase water for themselves and their livestock. Beneficiaries in sedentary villages spent 30–40% of their income on veterinary and medical care, while those in pastoralist and agropastoralist communities spent 40–50% on food. Agropastoralists spent up to 30% of their income to rent tractors.

## **SOS Sahel's adaptation of *busa gonofa***

Since the Boorana drought of 2001, SOS Sahel has adapted the *busa gonofa* system to help pastoralists in Yabello to restock their herds. SOS used the system because the target community asked them to. It is a system that they understand and can manage. An estimated 60,000 cattle perished in the drought – as many as 95% of animals in some areas. The few wealthy pastoralists whose herds were relatively intact were unable to cope with the large number of demands from people whose herds had been decimated. As a result, the traditional *busa gonofa* system was falling out of use.

Local people chose which animals to buy. SOS Sahel staff and clan representatives purchased the animals for restocking from the local market. They chose

### **Suggestions for restocking**

- Adapt traditional restocking methods to help redistribute local resources and enable destitute pastoralists to reintegrate into their communities.
- Promote restocking right before the rainy season.
- Carefully consider the issues of water, pasture and animal health services.
- Involve communities in planning, implementation and monitoring.
- Provide pastoralists with enough animals to make a viable herd. This will enable them to become independent of outside help.
- In many restocking schemes, the beneficiaries are required to pass on the offspring of their animals to another family. This can prevent the beneficiary from building up a viable herd. It is not a requirement in *busa gonofa*, nor in SOS Sahel's adapted approach.
- Restocking alone may not be enough. Additional support that may be required includes providing veterinary services and establishing savings groups so members can pay for these services. Merging traditional systems and modern interventions may be appropriate.

livestock from the locality to avoid bringing in diseases from outside, even though the local animals were expensive. Veterinarians from the Ministry Agriculture screened the animals for diseases. The clan council decided who would receive the animals from four peasant associations. The council included elders, community leaders, and selected clan representatives. The 120 beneficiaries received a total of 129 heifers, 643 goats and 25 camels.

Project staff keep records on the number of animals that have become pregnant, given birth, aborted, been sold or died. SOS Sahel also monitors the beneficiaries to make sure that they can survive in the pastoralist setting.

## **Animal health services**

If their animals fall ill, pastoralists and agropastoralists suffer. Milk production falls, the animals grow more slowly, walk less far and carry smaller loads. Sick animals are risky to eat and cannot be sold.

Animal health services are scarce in pastoralist areas. There are few qualified veterinarians, and long distances and poor communications mean that sick animals are rarely treated professionally. Medicines are expensive, and supplies are erratic. In the absence of veterinarians, development agencies train community animal health workers (CAHWs, often colourfully pronounced 'cows') to provide basic treatments. While many pastoralists often prefer to use modern medicine, they are forced to rely on traditional healers who use a wealth of herbal medicines.

There are four main types of animal health services in pastoralist areas:

- Disease surveillance and early warning of epidemics
- Preventive treatment (dipping, spraying, vaccination)
- Curative treatment and advice such as isolation and nursing
- Quarantine, export certification, meat inspection.

These services can be provided in various ways:

- By qualified veterinarians
- By community animal health workers
- By indigenous livestock healers.

These services can be provided by the government (often on a subsidized basis), by the private sector, or by the community. Veterinary services have traditionally been the responsibility of the government. But it is difficult for the government to provide these services efficiently. Funds are short, staff numbers and skills are limited, and supplies of medicines and other essentials are erratic. In the Somali region, the government veterinary service covers 5,000,000 animals, but this is only 20% of the livestock of the region.



## Community animal health workers

A lot of effort has been put into training 'barefoot vets', paraveterinarians or community animal health workers. These are members of the pastoralist community who have received some training in basic veterinary health care. Each worker can serve around 150 households. They vaccinate against diseases, treat animals against common problems such as ticks and internal parasites, and assist with birthing.



Three types of animal health workers: veterinarians, community animal health workers, and indigenous healers

Most schemes to train barefoot vets are supported by NGOs. The community usually helps decide who will receive the training. The trainees should be able to read and write, and must own their own animals. Many are already indigenous livestock healers (see page 34). They can build on the knowledge they already have of livestock health, as well as on their existing client base.

Training for barefoot vets typically lasts about a month. It covers both theory and practice. The subjects covered depend on the diseases and animal types in the area, but include the role of barefoot vets, herd health and livestock disease, drug handling and usage, basic surgical procedures, vaccination, disease surveillance, data collection and livestock extension.

The community workers receive a kit of drugs and equipment. The main drugs are antibiotics (against infectious diseases), anthelmintics (against internal parasites), acaricides (against ticks), wound dressings and disinfectants. The equip-

### Major animal health problems

Type of disease	Causes
External parasites	Ticks, mites
Internal parasites	Intestinal worms, liver flukes, lungworm
Infectious diseases, epidemics	Anthrax, blackleg, contagious bovine pleuropneumonia, contagious caprine pleuropneumonia, foot-and-mouth disease, heartwater, mange, pasteurellosis, peste des petits ruminants
Poor nutrition	Weakens animals and exposes them to infections
Injuries	Broken bones, snake bites
Reproduction and milking problems	Pyometra, metritis, mastitis
Vector-borne diseases	Trypanosomiasis, tick-borne diseases
Mineral deficiency, poisoning	Botulism, neonatal ataxia, nitrate poisoning, plant poisoning



## Vets, community animal health workers, or indigenous healers?

	<b>Veterinarians</b>	<b>Community animal health workers</b>	<b>Indigenous healers</b>
<b>Characteristics</b>	<p>Highly trained by universities</p> <p>Wide range of specialities</p> <p>Access to drugs</p> <p>Access to diagnostic equipment</p>	<p>Members of community, provided with minimal training and kits of drugs and equipment</p>	<p>Use knowledge of herbs and treatments passed down from previous generation</p> <p>May specialize in specific areas – such as bone-setting</p> <p>Some are quacks</p>
<b>Advantages</b>	<p>No restrictions on types of drugs they can use</p> <p>Have access to health care hierarchy</p> <p>Popular with livestock holders</p> <p>Favoured by government</p>	<p>Accepted by community</p> <p>Mobile, move with herds</p> <p>Possible to train large numbers to provide reasonable coverage</p> <p>Can prevent or treat many common problems</p> <p>Can provide early warning of epidemic diseases</p> <p>Favoured by NGOs and government in pastoralist areas</p>	<p>Present in the community, provide first option for treatment</p> <p>Mobile, move with herds</p> <p>People know and are familiar with traditional system</p> <p>Rich in local knowledge, understanding of herbs, etc.</p> <p>Low cost, payment in kind</p>
<b>Disadvantages</b>	<p>Expensive, difficult to pay for enough vets to provide sufficient coverage</p> <p>Unwilling to work in difficult areas, and may ask for more pay to work there</p> <p>Static, based in towns, unwilling to move with herds</p> <p>Unfamiliar with problems in pastoralist areas</p>	<p>Difficult to replenish equipment and supplies</p> <p>Difficult to charge for services, so supplies tend to become depleted</p> <p>Cannot deal with complex problems or restricted drugs</p> <p>Difficult to monitor and regulate</p> <p>Require special policies and procedures</p>	<p>Healers may be unwilling to share information with others (professional secrets)</p> <p>Low levels of skills in modern medicine</p> <p>Efficacy of practices unknown. Some may be ineffective or harmful</p> <p>Veterinarians and government suspicious of abilities</p>
<b>Where appropriate? How to use?</b>	<p>Use to train, support and supervise paravets</p> <p>Provide services that require formal certification – e.g., export certification</p> <p>Provide mobile camps that serve different areas in turn (e.g., FARM Africa)</p>	<p>Provide primary health services in community</p> <p>Provide supplies of drugs and equipment, training and referral support</p> <p>Run mass vaccination campaigns</p> <p>Need periodic refresher training to upgrade skills</p> <p>Where access to animal health services is limited</p> <p>Where government has no capacity to provide services in the community</p>	<p>Train as CAHWs</p> <p>Little experience in Ethiopia in working with healers. But potential exists</p> <p>Verification trials needed</p>

## Bull service station

It is important to prevent the Boorana cattle breed (which is kept by the Boorana and Somali) from becoming genetically diluted. One way to do this would be to establish a bull service station, where superior bulls can serve cows in heat. A suitable source of bulls is the Oromiya Pastoral Development Commission's Southern Rangeland Development Unit Cattle Genetic Conservation Ranch, near Yabello.

ment includes a syringe and needles, thermometers, a burdizzo (for castration), sprayers (to spray against ticks), and a canvas bag. Equipping a community worker with drugs and equipment costs 2000 birr.

The community workers charge a small fee for their services to cover the cost of the drugs and a small profit. This fee may be paid in cash or in kind. They use the profits to support themselves and to replenish their stocks of drugs and supplies. Problems include the following:

- The workers feel unable to charge the full cost of the treatment. Many clients ask for treatment on a credit basis, and then fail to pay. The workers' drug supplies dwindle, and they cannot continue to provide health care services.
- Drugs and supplies are scarce in remote areas, and the clinics and pharmacies that sell them are found only in the larger towns. Community workers find it difficult to travel long distances in search of fresh supplies.
- During drought, the herds of richer livestock holders migrate in search of pasture, but poorer people (especially in agropastoralists) tend stay in their home areas with their animals. Community workers tend to come from poor communities, so they lose their major source of income during this period.
- Restrictions on livestock movements and sales due to disease force livestock owners to reduce their expenditure on health services, cutting the community workers' income.

## Private vs government provision of animal health services

	Private	Government
<b>Advantages</b>	Easy to increase coverage More sustainable Low cost Reach remote areas High community participation	Easy central control and regulation High quality of service Subsidized prices for clients
<b>Disadvantages</b>	Difficult to regulate Low quality of service Prices not subsidized – clients must bear full cost	Limited community participation Lack of capacity Difficult to increase capacity High cost to government

There are more than 600 community animal health workers in the Somali region. Of the 74 trained by Save the Children UK, more than 50 are performing well, and only 11 have stopped providing animal health care services altogether. These 50 community workers serve 14,000 households in 71 communities, and treat over 100,000 cases in a 6-month period.

## Veterinary drugstores

There are few veterinary drugstores in pastoralist areas, so community animal health workers often run out of the drugs and supplies they need.

Privatization is an option to improving the supply of drugs. Businesspeople want to make a profit, so they have an incentive to ensure a reliable supply of drugs so they can sell them to customers.

In 2000-1, Save the Children helped individual entrepreneurs to open eight drugstores in seven of the nine zones in the Somali region. These sell drugs and supplies to community workers and to pastoralists, and treat animals in the immediate area. The community workers refer cases they cannot treat to the better-qualified staff of the pharmacies.

Government support was vital to the establishment of the drugstores. A steering committee and a technical committee composed of relevant government agencies managed the project. These committees proposed several policy changes; the regional government agreed to promote private veterinary services and defined the tasks that would remain in the public sector.

The drugstores are owned and managed by local entrepreneurs. People who wished to start a drugstore applied for loans for initial capital for their business. The Technical Committee screened their applications and the Commercial Bank of Ethiopia provided the loans, which were guaranteed by Save the Children.

Applicants had to fulfil various requirements in order to qualify for the loan. They had to be qualified veterinarians or animal health assistants, possess the appropriate trade licenses and permits, and have a letter of recommendation from their local authority confirming the need for private veterinary pharmacy in the area. They had to own suitable premises and agree to inspection by the Technical Committee. They had to agree to provide collateral for the loan and agree to the bank's credit procedures. They also had to be willing to collaborate with the Technical Committee in monitoring their activities and financial viability.





Save the Children ran several workshops to train the drugstore owners in business management and to raise the awareness of government officials about this approach to providing veterinary services.

## Traditional livestock medicine

Indigenous livestock healers provide a vital service to pastoralists. They diagnose diseases, and collect roots, leaves, flowers and fruits to make herbal medicines. They grind these ingredients in a mortar and mix them with water before applying them: giving them to the infected animal to drink, putting them in the animal's nose, or applying them to the skin.

There are two types of herbalists in the Afar region: *hardegae* and *dailabis*. A *hardegae* relies on his or her own knowledge, while a *dailabis* also refers to the Quran and other books for information. Both charge fees for their services. These fees can be paid in kind, such as a live cow or camel.

*Dailabis* also instruct animal owners to protect themselves from spirits while collecting ingredients for medicines by learning and reciting magical words.

Both *hardegae* and *dailabis* can be found in most parts of the Afar region. But many of the plants they use are not widely distributed, so the healers must travel long distances in search of them. If they are unable to travel themselves, they may ask others to collect ingredients for them.

Healers guard their knowledge carefully. They are often unwilling to divulge it to outsiders. But they try to bequeath it to a trusted son or daughter before they die. If they fail to teach their children adequately, the local elders will advise them to do so.

Traditional medicines are used to treat a wide range of disease, including swellings, skin ailments, respiratory infections, loss of appetite, and internal parasites.



If modern medicines are available, livestock holders prefer to use it. But modern medicines are scarce and expensive, so owners turn to their traditional healers for help.

Traditional healers are part of the pastoralist community. They can be consulted without forcing sick animals to make long treks. They do not need expensive formal education to train.

Herbal medicines need no hard currency to buy, and can be made quickly to respond to a need (unlike modern medicines, which must be ordered from abroad). Local people protect plants that have medicinal value.



### Suggestions for animal health

- Provide training for community animal health workers and give them good-quality drugs and equipment. Provide follow-up training to refresh their skills and to expand the range of problems they can deal with.
- Anticipate the need for drugs in advance to ensure that supplies are available when they are needed.
- Link community animal health workers with pharmacies. The community workers need supplies of drugs, and pharmacies need people to buy their goods. They are dependent on each other, so must be linked to ensure that both can continue to serve the local people.
- Promote private pharmacies where government veterinary stores are lacking.
- Promote research to identify the ingredients of traditional medicines, methods of preparing and using them, and their efficacy.
- Support traditional healers in conserving medicines and providing services to their communities.
- Train traditional healers to enable them to use simple modern medicines and to encourage them to share their knowledge with others.
- Recognize the importance of traditional healers and integrate them into the livestock health care system.
- Promote the preservation of indigenous breeds.

# 4

## **Rangeland and resource management**



**F**OR PASTORALISTS, rangeland is more than just where they graze their animals. It is a vital resource – their vast, open home. They have a vested interest in maintaining it, and ensuring that others do so too.

But the rangelands are under threat from a variety of sources. Rising numbers of people and animals are degrading the range, especially around water sources. Wetter areas – often vital dry-season refuges – are being converted into irrigated cropland. The vital biodiversity of the range is endangered by excessive grazing, cutting of trees, and encroachment by woody species, especially the notorious *Prosopis juliflora* (page 47). Increasing areas are losing their scattered covering of trees as people seek to make a living by making charcoal.

This chapter describes some approaches that pastoralists use to maintain their rangelands and the resources they contain.

## Managing rangeland

Pastoralists manage their rangeland resources to make sure that there is enough water and pasture available for their animals, especially during the dry season and drought. They do this by moving their herds to areas where the resources are available, and by managing the size and composition of their herds.

### Herd movement

Pastoralists practise two general types of migration.

- During a normal dry season, the men take the large animals (especially non-milking animals) to designated dry-season grazing grounds. The women, children and the elderly remain at the homestead, where they keep cows and goats for milk.



- When there is drought and famine, and the grass and water around the camp is finished, the whole family and the animals move in search of pasture and water.

The various clans have different traditional grazing areas. The elders tell each group where to take its animals. During the dry season, if members of one group do not have enough grazing in their allocated area, they are free to move their herds to another group's area. During famine, conflicts sometimes break out because there is not enough pasture and water for everyone.

The Afar have specific dry season grazing grounds. The location of the grounds depends on which part of the zone the pastoralists come from. During the normal dry season, pastoralists from the western part of Afar graze their livestock in the Awssa area. They move to the adjacent Oromo lowlands when there is famine. Some of the pastoralists live in the Awash River valley, and it is also the traditional dry-season grazing ground for pastoralists from other areas. Some Afar who live close to the Amhara Region use the Cheffa valley in Amhara as a retreat during drought, while others use areas within Afar. The Gewane swamp in southern Afar is the dry-season grazing area for pastoralists in the Middle Awash.

## Herd size and composition

Pastoralists manage the number and types animals they keep, depending on the availability of water, pasture and labour. During drought, they adapt the number and type of animals they keep.

- They keep as many animals as they can. That ensures they can make maximum use of the pasture in good years, and in droughts, they can be confident that at least some animals will survive. Large herds are more viable than small ones: a pastoralist with many thin animals will still be able to live off the herd, and can sell animals if necessary. But a herd that is too small will not produce enough milk or meat (some groups also use blood) to support a family.



*The Afar place a calf skin stuffed with grass in front of the mother cow to encourage milk letdown*



- They keep female animals, and sell or slaughter the males, except those they need for breeding. That provides meat and income, but allows the number of animals to increase quickly after a drought.
- They do not restrict the breeding of their animals. Calves and kids are born in all seasons, so an unexpected drought or epidemic is unlikely to kill all of them.
- They sell animals if they need cash or to realize value from them. A pastoralist in danger of losing several animals might slaughter them and sell the skins for a decent price. The cash may enable the owner to restock the herd after the drought.

Pastoralists have had to change their traditional livestock production system because of the changes in the rangelands. They are selling more immature cattle because they need cash. They increasingly rear camels and goats, which can withstand the dry conditions and browse on the encroaching woody species.

## Herd splitting

Pastoralists split herds and flocks into smaller groups depending on how much pasture is available. They do this to avoid damaging the rangeland. The herds and flocks are split into base camp and satellite groups. Strong but less-productive animals are sent in satellite herds to remote areas, where they are managed by adults. Young boys and girls tend the base herds, which are made up of milking and young animals. These animals are kept close to settlements.

The Afar have an elaborate herd-splitting strategy that stratifies stock into several groups. This is true for goats and camels as well as cattle.

- **Goats** Goat flocks are split into two. Young boys and girls tend very young kids (*bokole*) close to settlements. Older boys and girls tend the other animals (*kada wodar*) away from settlements.



Pastoralists migrating because of famine



- **Camels** Camel herds are split into five groups. Very young camels (*dayna*) are often kept in enclosures in night camps and are hand-fed browse. Slightly older camels (*neriga*) browse nearby on their own. Older boys and girls herd weaned camels (*ekale*) separately around settlements. Lactating camels (*homa*) provide milk for the family, so are herded around settlements. There are two types of *homa*: those normally herded by men (*gudgudo*) and those that are not herded but return to settlement areas every night (*areyu*). Dry and pregnant female and male camels (*adi galla*) are herded by strong men furthest away from settlements. After they calve, lactating females are herded as *homa*.

The location and size of the base camp and the satellite herd depend on the availability of feed, water and labour. If drought is imminent, some of the base camp herd, including weaned animals, may be moved to the satellite herd.

## How the Afar use pasture

In Afar culture, each clan living in the same territory has its own residential area (*metaro*). The residential area of each clan has grazing land and there is water available. The clan that owns the pasture allow other clans to use it. More than one clan can live in a territory.

How the Afar use and manage the pasture depends on the season. There are four seasons in all:

- The rainy seasons (*kerma* and *sugum*).
- The dry seasons (*gilal* and *haqay*).

During the rainy seasons, the Afar may use the pasture in two ways:

- They can take their families and settle on land that is not permanently demarcated, but kept for common use by all clans living in the vicinity.
- They can send the young men to take the animals in search of pasture, leaving the rest of the family in the *metaro*. Sometimes the young women accompany the herd to cook, milk and make butter, which they take to the *metaro*.

Cows that have given birth to female calves are left behind in the *metaro*. People who stay in the *metaro* milk these cows, which are called *homa*.

The young men take with them cows with older calves and those whose calves have been slaughtered. Cows that have given birth for the first time are known as *soyta*.

In the *boda/magida*, the young men take with them cows whose calves have been slaughtered. They do not take any calves, so to get milk they put the dried skin of the slaughtered calf, stuffed with grass, in front of the cow. The dry cows and other animals are called *magida*.

The Afar call the transitional month that marks the end of the rainy season and the beginning of the dry season *kayra*. This lasts from mid-September to mid-October. While the *magida* herds are away, a group guards the pasture (*deso*)

around the *metaro* to keep animals off it. When the herds return, there is enough good grazing for the dry season close to the *metaro*.

When all members of the clans return home, the tribal chiefs give an official announcement, *kukta*, to the law enforcement officials (*fe'ima*) on how to manage the pasture during the next season. The *fe'ima* are responsible for informing the rest of the clan of the elders' decisions.

## Pasture scouts

In Afar, a team of range scouts guides the movement and monitors the state of the rangeland before allowing herds to use it. This team is called *eddo* (or *addo* in southern and central Afar). The men selected as *eddo* should be reliable, well respected, gentle and calm, and capable of walking long distances. It does not matter which clan they come from, but hired labourers cannot join an *eddo* team. An *eddo* team has several specific tasks when assessing rangelands.

- The team assesses if an area have recently received rainfall, for how long and how much. The team members put a stick into the soil to estimate the depth of the soil moisture.
- The team checks how much fodder and water are available, and whether the quality is good enough for the different livestock types.
- It estimates how long the animals can graze on the particular rangeland.
- The team checks whether there are rival groups or diseased animals in the area.

The Afar information network, *dagu* (see page 90), adds to the information collected by the *eddo* team. The *eddo* team discusses the information gathered with elders and clan leaders. The herders can use the selected rangeland for up to 3 months. They then assess the range and the condition of the animals to determine whether to remain.

The equivalent team of scouts in Somali areas is called *sahan*. These men have to be trusted members of the community who are religious and honest. They must be active enough to walk long distances and strong enough to withstand the harsh weather, thirst and hunger. They carry only water and sugar while searching for grazing. If they pass through villages on their way, the villagers give





them food. The search may take several days when it is very dry. The scouts also get information from travellers they meet and the villages they pass while on the search. Once the men identify a suitable range, they check its condition. If the pasture and water are enough, the *sahan* team returns home and reports to the elders, who decide whether to move.

During the rainy season only the young men and strong animals move. This movement is called *horweyn*. During the dry season, the whole village moves. This is known as *habawar*.

## Herding labour organization

Pastoralists measure their wealth in terms of animals. Herds that grow beyond a certain size cannot be managed with household labour. Children are seen as a blessing, as they can herd animals from quite an early age.

Usually, women and young girls are responsible for herding small stock, while men and boys are responsible for camels and cattle. Women play no role in making decisions about where or when to move the animals.

Herders perform certain tasks every day to make sure that their animals survive. Some manage water before the animals arrive, while others search for pasture. Still others guide the animals to water and grazing lands. While the duties of an individual herder can change from time to time, only a few do the milking, as the herders believe that changing milking hands reduces yield.

## Grazing reserves

Grazing reserves (*deso* in Afar, *kello* in Boorana) are used to sustain livestock during the dry season and during droughts when the normal rangelands are exhausted. Pastoralists have grazing reserves for emergency feeding of their livestock, and access to these reserves is based on customary laws. All users know how to use the land, and the elders are responsible for controlling the use and making the rules. Herders use the reserve areas only when other rangelands cannot provide grazing for everyone.

Outsiders can negotiate use of a grazing reserve, and are given a separate pasture. Outsiders can graze only lactating and young stock; they have to make sure that all their animals are disease free; and their access is for a limited, pre-determined period.

Such institutional protection of grazing reserves has been undermined by recurrent drought and the modern administration system that has weakened the strength of clan leaders and elders in controlling the reserves.

During drought and famine, the Afar can use any pasture that may be available, including the *deso* reserves.



## Challenges in managing rangeland

The major challenges in managing rangeland include:

- **Recurrent drought, and inappropriate drought management** Recurrent drought is a major problem in pastoralist environments. Proper drought mitigation strategies need to be put in place. For example, the current early warning system in Afar is restricted to the regional capital, Ayssaita. Staff from the capital move to the lower levels of administration to compile information. Pastoralists do not receive the warning early enough to be able to make proper decisions.
- **Expanding human and livestock populations** Population pressure is increasing, putting further pressure on the resource base. This expansion of human population is exacerbated by immigrants from adjacent non-pastoralist areas.
- **Accelerated rangeland degradation and loss of biodiversity** The rangelands are subject to degradation and loss of important biodiversity. The ability of the environment to support people and animals has been reduced to a level where viable pastoralist systems become questionable. Bush encroachment by unwanted weeds and prolific trees (e.g., *Prosopis*) is reducing important graze and browse species.
- **Problem pasture types** Some types of pasture face specific problems: severely degraded land around watering points; grasslands subjected to overgrazing and bush encroachment; and good pastures that are too far from watering points, so are not used.

### Suggestions on managing rangeland

- Use indigenous ecological and technical knowledge as a basis for research and development.
- Encourage herd movements as a drought-coping mechanism and risk-management strategy.
- Develop appropriate regulations on the use of communal rangelands to maintain their productivity.
- Encourage local institutions to reinstate traditional grazing reserves.
- Increase the use of participatory natural resources management, with emphasis on bottom-up planning approaches.
- Encourage pastoralists to diversify their herds and to keep more camels and goats, which tolerate drought better than sheep and cattle.
- Calculate the carrying capacity of each type of livestock, and educate families on how many animals are suitable for what size and type of range.
- Develop markets as part of management. If animals are sold, this will reduce pressure on rangelands.

## Conserving rangeland biodiversity

Rangelands are uncultivated grasslands, dotted with trees, that support grazing and browsing animals. They are the home of large mammals and plants. Pastoralists, agropastoralists, hunter-gatherers and subsistence farmers inhabit the range.

Historically, all the inhabitants of the rangelands were able to live together peacefully because there was no pressure on the resources. Now the rangelands face two problems: there is less land available, and farmers are displacing the traditional inhabitants. These inhabitants are interested in maintaining the biodiversity of the rangelands to maintain their source of livelihood. The farmers clear the land for cultivation, reducing the biodiversity.

Policymakers and researchers do not give rangelands the same prominence they give forests and cropping areas, although rangelands make very important contributions to the economy and to food security. They provide feed for many animals, support a large export trade in livestock, and provide draught cattle to the highlands.

Biodiversity is the diversity of species, especially where there is conservation. It encompasses living organisms, their genetic differences and their cultural diversity (since different societies interact with the rangeland).

### Rangeland plants

The plants that grow in rangelands are sources of food, feed, firewood, charcoal, timber and medicines for pastoralists. In the Boorana rangelands, for example, more than 30 grass and grasslike species are important for grazing. Some plant materials are traditionally used to produce baskets, storage containers or gardening implements. These can be sold to provide additional income.

Pastoralists use trees for animal feed, wood for fuel and building, shade, spices, gums, resin, medicines and dyes. Trees are found in riverine woodlands, *Acacia*-

### Common native grasses and trees in pastoralist rangelands

Grasses	Trees
<i>Aristida adscensionis</i>	<i>Acacia bussei</i>
<i>Bracharia lacananta</i>	<i>Acacia millifera</i>
<i>Cenchrus ciliaris</i>	<i>Acacia seyal</i>
<i>Chrysopogon plumulosus</i>	<i>Acacia tortilis</i>
<i>Cynodon plectostachyus</i>	<i>Balanites</i> spp.
<i>Eragrostis</i> spp.	<i>Commiphora</i> spp.
<i>Heteropogon contortus</i>	<i>Euclea shimperi</i>
<i>Pennisetum strumarium</i>	<i>Gewia tembensii</i>
	<i>Grewia bicolor</i>



*Boswellia* woodlands, bushlands and grasslands. Pastoralists use these woodlands as a refuge during prolonged dry periods when there is a shortage of feed. The woodlands are under heavy pressure from more and more people who cut the trees to make charcoal and firewood.

Ethiopia's rangelands are being encroached by woody plants and by farming. The Boorana rangeland used to be one of the best in eastern Africa. Large parts of this range are now covered with bush (mainly various *Acacia* species) that cattle and sheep cannot feed on. *Acacia drepanolobium* has spread from the plains to valley bottoms of the rangeland where palatable grass species are found.

Parts of eastern Ethiopia (for example, in Shinille zone of Somali region and Dire Dawa Administrative Zone) are heavily overgrazed. The range has deteriorated to such an extent that perennial grasses and trees or shrubs are either disappearing rapidly or, in places, have virtually disappeared. Annual grasses are increasingly taking their place.

Pasture in the Afar region is overgrazed because of recurrent drought. Drought has also caused the loss of some grass species, which have often been replaced by bush. *Prosopis juliflora* is the most common invasive bush species in Afar. *Acacia nubica* and *Combretum molle* are invading the grasslands of Zones 1 and 5 in the Afar region. Grass species with thorns, such as *Aristida adscensionis*, are spreading.

## Conserving rangeland diversity

Rangeland biodiversity needs to be conserved to:

- Preserve useful plant and animal species.
- Support pastoralists' household food security.
- Maintain and increase export incomes.
- Provide various products, including minerals, salt, gum and incense. These are not easy to produce intensively, so pastoralists have a comparative advantage in producing them.
- Prevent environmental degradation.

Conservation efforts have so far focused more on endangered species than on the landscape, yet the people who use the land are likely to be the most affected by change.

Rangelands can be conserved by establishing protected areas and restoring the habitat. Protected areas act as a reserve for large mammals. Ethiopia's wildlife conservation areas conserve species for education and for tourism. Habitats can be restored by reintroducing lost species, burning the invading vegetation, planting trees to control erosion, and introducing livestock grazing systems that are compatible with wildlife.



### Suggestions on rangeland biodiversity

- Encourage different stakeholders to cooperate to conserve rangeland biodiversity.
- Maintain or restore habitats to minimize loss of species. Provide incentives at the local level to conserve biodiversity.
- Promote research on rangelands:
  - Continue inventorying and monitoring genetic, species, ecosystem and landscape diversity. Develop biodiversity indicators.
  - Analyse human impacts on rangelands ecosystems.
  - Conduct comparative stakeholder analyses to develop priorities for regional action.
  - Attempt to value rangeland biodiversity in economic terms, both in terms of local users and in relation to ecosystems services.
  - Devise ways to provide incentives to maintain biodiversity at the local level for pastoralists and other resource users.
  - Evaluate the cost-effectiveness of different conservation approaches.

## *Prosopis juliflora*

*Prosopis juliflora*, a tree originally introduced to control salinity, is proving to be a major problem in Afar.

Called 'mesquite' in English, *Prosopis* is a drought-tolerant evergreen tree native to South America. It is locally known as *wayane hara*. In many ways it is suitable for afforestation, reducing soil salinity, soil conservation, wood and fodder. In plantations the branches grow almost straight, providing good poles. The wood makes good firewood and charcoal. The leaves can be used as compost. *Prosopis* can grow in soils poor in nutrients and it has long roots and so can grow in areas with a low water table. Before shedding its leaves, it absorbs all the nutrients from them.

But *Prosopis* is **too** prolific. It produces 5–10 tonnes of pods per hectare a year in the rangelands. It has spread very rapidly and has become a serious weed. It has taken over large areas of rangelands.



*Prosopis juliflora* (mesquite)

### Suggestions on *Prosopis*

- Use the wood to make charcoal. In Dire Dawa the tree is used to make charcoal for export to Djibouti.
- Conduct research on digestibility of the pods and use of the tree to reduce salinity.
- Educate and encourage pastoralists to manage *Prosopis* by uprooting seedlings and cutting trees.
- Educate pastoralists on the various uses of the tree.
- Uproot the trees by mechanical and chemical means where *Prosopis* is unwanted

*Prosopis* is difficult to manage. It forms a dense patch of vegetation, which animals cannot penetrate because the tree has thorns. The thorns are poisonous, making it difficult to cut the wood. The wood is hard and difficult to cut down using simple hand tools. When the tree is cut down, the stump regrows shoots very readily. The tree suppresses the growth of other vegetation, especially grasses and herbs. Animals can feed on the pods but cannot digest them. They collect in the rumen, and may eventually kill the animal. The seeds are passed out with the dung, helping spread the tree to new areas.

If *Prosopis* is planted near irrigation canals, it grows and multiplies even more rapidly. It eventually blocks the canals. It also acts as a shelter for wild animals, pests and insects.

The expansion of *Prosopis* has reduced the amount of natural rangelands available for pastoralists. In some cases, the people have had to move away from areas where the tree has grown.

## Protecting forests in Afar

The Afar value all their natural resources, but they particularly take care of their forests.

Clan leaders inform the traditional law enforcement officials (*fe'ima*) of the rules that govern use of forests. These officials pass this information on to the rest of the clan.

The value placed on trees is seen in the harsh punishment given to anyone who cuts one down. If the culprit owns animals, he is fined at the rate of a cow per tree destroyed. The animal is slaughtered for a feast. The loss of a cow is a serious blow. The action discourages the culprit from destroying more trees.

If the culprit does not own any animals, he is taken to a river with his hands tied

## Suggestions on forest protection

- Conserve traditional Afar ways of protecting forests.
- Educate the Afar and newcomers how to protect and manage forests.
- Start conservation programmes in the area.

behind his back. He is dipped in the river and then whipped. The punishment is more painful when he is wet.

The Afar are not allowed to use trees in any way without permission from their clan leaders. However, during droughts, the *fe'ima* can give permission to cut branches and leaves of trees to feed their domestic animals.

The Afar do not plant trees, but they never cut them down. They only cut branches. Making charcoal is taboo because they believe that if anyone does this, they will never have children. But they make arrangements with highlanders to make the charcoal, and make some profit.

The Afar also do not build fires in forests, and they do not hunt.

The Afar benefit from forests in several ways:

- Forests provide feed for calves and other animals that are kept close to the homestead.
- The permanent residential areas (*metaro*) of the Afar are normally near forests and rivers. The trees provide shade, act as windbreaks, and bind the soil together, reducing erosion. The trees are also a source of medicines.
- The branches of large trees provide wood for building and making tools.
- The Afar use the branches that have fallen as firewood.

Nevertheless, forests in the Afar Region face problems:

- The Afar do not replace lost trees, and there is no natural resource development activity in the area. This encourages land degradation.
- Newcomers to the region have brought in their own culture. They cut trees for various purposes, without regard to the traditional use of the forests. Land degradation results.
- Recurrent droughts make it difficult to preserve the forests in the traditional way.



*Punishing someone who has cut down a tree*



**5**

**Crops**

**C**ROPS CAN BE grown in a few favoured areas in pastoralist areas. Various techniques can be used:

- **Irrigation** Various types are used, ranging from large, river-fed schemes, to smaller plots watered by hand or by pump irrigation.
- **Flood-recession agriculture** Using water that soaks into the soil during the seasonal flooding of rivers.
- **Water harvesting** Collecting rainfall using bunds and ditches, and diverting it into plots or shallow basins so it seeps into the soil.
- **Dryland cropping** People may plant crops in the hope that there will be enough water to get at least some yield.

Agropastoralists grow a few crops near their homesteads and along water catchments to feed their families. They may sell extra crops, especially maize and fruits, in nearby markets. While they rely mainly on their animals, pastoralists may also grow a few crops.

Irrigation schemes have brought some areas into cultivation, but they take land formerly used by pastoralists. Small-scale irrigation using gravity irrigation or pumps is effective. Appropriate technology is required for this.

It is possible to plant trees in degraded areas, along riverbanks and in places where trees have been cut down to improve grazing and browsing. There are several benefits to planting trees. They can be used for fruit, fodder, medicine, timber and firewood. Trees also improve the environment by binding the soil; this reduces erosion. However, many of the efforts to plant trees in the lowlands of Ethiopia have failed because they have not been planned properly. The local population has not been involved in the projects and the tree species introduced have not been suitable for the area and the needs of the people.

Although cropping is a secondary activity in pastoralist areas, it is expanding, and there are many interrelationships with pastoralism, as the cases in this chapter show.

## **Cultivation along the Awash River**

The Afar who live around the Awash River grow sorghum, maize, dates and bananas using irrigation. A few families also grow horticultural crops. All the crops are used to feed the family; extra produce is sold in local markets.

The men plant the maize and sorghum crop in small plots near the riverbank and harvest it 4 months later. The men dig the irrigation canals, which carry the water to the plots. Women manage the watering itself.

Although the Afar do not grow fodder, their animals feed on crop residues, as well as on grasses, herbaceous shrubs and trees.

Despite these cropping activities, the rivers and other water sources in the Afar region could be used more intensively than at present.

## Drought and flood along the Web River

Somali agropastoralists in Afder Zone grow crops along the banks of the perennial Web River. There are two rainy seasons in this area: a short one (called the *deyr*) from October to December, and a longer one (the *gu*) from April to June. There are two dry seasons: the *hagga* from July to September, and *jilal* from January to March. Swollen by heavy rains in the Bale Mountains, the Web River floods in June and July.

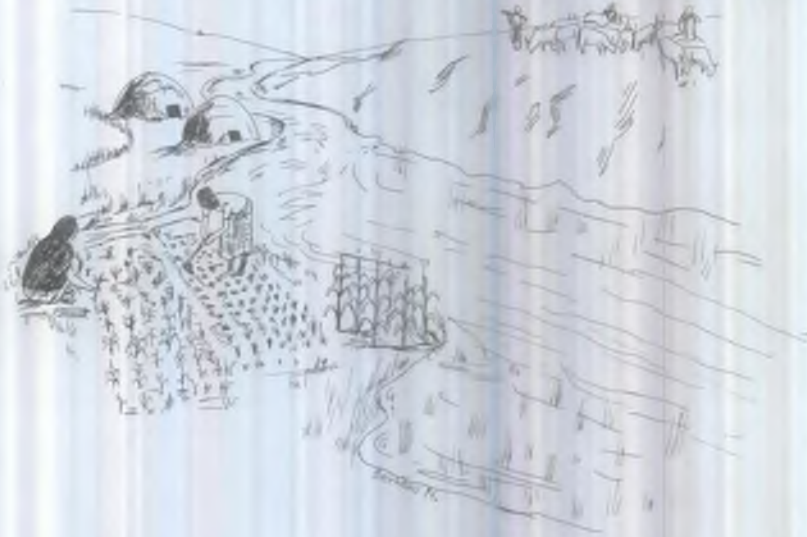
The farmers wait for the floods to subside, then plant maize and other crops in the wet soil. They continue irrigating the crops using watering cans and water drawn from the river.

In 2001–2, Pastoralist Concern Association of Ethiopia (PCEA) provided agropastoralists in Charati and Hargelle districts with small, 20-horsepower pumps, capable of lifting 80 cubic metres of water an hour. These pumps enabled the agropastoralists to water a larger area than was possible by hand. PCEA organized the farmers into eight groups, gave each group a pump, trained them how to use it, and supplied them with vegetable seeds. The 287 farm households included 15 headed by women.

The farmers used the pumps to irrigate a total of 33 hectares. They planted local varieties of maize (the staple crop, the stalks of which are an important source of fodder), tomatoes and sesame. The maize yielded an average of 1.8 tons per hectare. This was lower than hoped because the farmers used unimproved local varieties, broadcast the seed (the traditional practice) rather than planting in rows, and weeded the plots too late.







Farmers planted tomatoes, which they knew they could sell. They were initially reluctant to grow other types of vegetables because they were less familiar with them. They did not think they could sell them locally, and they had no way of transporting them to other markets. However, they have seen that onions, carrots, cabbages and beetroot fetch a good price in the local market, so they are now becoming interested in growing them.

After seeing the success of the pumps, several individual farmers in neighbouring areas have bought their own pumps.

Agropastoralists in the Lamashilindi area, members of the Aulyhan clan, have a complex farming system based on the annual floods. During the two rainy seasons, mosquitoes and tsetse flies (which carry trypanosomiasis) are a severe problem, so some of the men take the animals to graze on upland pastures, some 20–30 km away. The women and the rest of the men stay behind to plant maize, sorghum, vegetables, sesame and watermelon. When the river is high in June and July, they use gravity irrigation to extend the growing season, even though there is no rain.

Pastoralists from surrounding areas know the low-lying Lamashilindi as a good source of dry season forage. They come from near and far to graze thousands of animals on the vegetation and crop stubble.

The wetlands in the area are a breeding ground for many types of pests and diseases. Outbreaks are common when livestock return to the area in the dry season. The sudden change to a rich diet causes enterotoxaemia in newly arrived cattle (the animals that have stayed in the area are more resistant). Despite this, there is no government veterinary service in the area. Stock owners try to treat their animals themselves, but often misuse drugs. Save the Children USA has trained some community-based animal health workers, but they cannot reach the majority of the people in the area. Malaria is a very common disease in humans.

## Flood recession cropping in Ferfer

Dolo-Gab, an area in Ferfer *woreda*, Gode Zone in the Somali region, is prone to floods from the Wabi Shebele River during the rainy season. This river rises in the Bale Mountains and flows towards the sea in Somalia.

Local agropastoralists take advantage of this by digging canals to lead the water into the fields. They plant crops as soon as the floodwater has receded. They grow a local sorghum variety known as *yaryaro* that matures early, is well adapted to the area, tolerates drought, and yields well. They also grow a local maize variety called *kelafo*. These two crops account for over 90% of the crops grown. The grain is used as food, while the stalks provide fodder and materials for roofing and walls. Some agropastoralists earn money by selling surplus fodder.

The agropastoralists have recently begun producing onions, which grow well and are in high demand. Watermelons are popular during the fasting month of Ramadan. Other crops include tomato, mango, papaya, lemon, and other fruits and vegetables. Groups of agropastoralists cooperate by clearing the land of each member of the group in turn.

In normal years, the good local pasture can accommodate a large number of animals. During the dry season, the agropastoralists feed milking animals with crop residues or grass collected from distant areas. The river and shallow wells are the main source of water during this season. Animals visit the water courses every few days to drink.

Problems in the area include the lack of strong organizational structure in the community, and the lack of support by government or NGOs. Limited labour means that the agropastoralists can cultivate only 10% of the area suitable for crops. Unexpected floods may drown a crop, forcing the agropastoralists to replant.

## Using maize tops as forage

Pastoralists and crop farmers often clash over the use of land and water. But Afar pastoralists and settlers in the lower Awash have found a way to cooperate, to the advantage of both.

The Afar pastoralists rent their land out to sharecroppers from the highlands to grow irrigated maize. The pastoralists provide the land, while the highlanders provide the inputs and labour. They share the grain yield equally between them.





The dry season from October to February is when maize is grown. It is also when pastoralists bring large numbers of animals to the area in search of water and fodder. To provide fodder, the farmers cut the tops off their maize plants and feed them to the animals. Traditionally, pastoralists who need feed can ask the farmers' permission to cut the maize tops.

It is important not to cut the maize tops off too soon, or when the soil is very dry. Doing so will seriously reduce grain yields. But if they are cut off too late, the tops will be dry and make poor feed.

The best time for cutting is when the maize has reached the 'dough' stage (when the grain is fully formed but the seed kernels have not yet hardened). It is easy to work out when this is: farmers watch for when half the maize plants in the field have formed silks on their cobs. They should wait another 30 days, then they can safely cut the tops of the plants off without harming the grain yield. This can produce enough fodder to feed animals for up to 2 months. After the harvest, the animals can be let into the fields to graze on the remaining stalks.



## **Thinning maize**

Researchers recommend that farmers plant maize in rows. That saves seed, improves yields, and makes weeding and harvesting easier.

But planting in rows takes more work, so many farmers still broadcast seed, or use a pointed stick to make planting holes at random throughout the field. Farmers drop a few seeds in each hole, then cover them with their foot before making the next hole.

These traditional planting methods might seem wasteful of seed: far too many plants germinate, and they must be thinned when they reach knee height so they do not crowd each other out. Farmers use a hoe to remove weeds and the extra maize plants. These thinnings are a valuable source of fodder for milking animals and calves.



## Pooling labour to grow crops

Many hands make light work, especially when it comes to growing crops. The shortness of the rainy season means there is limited time to prepare the soil for planting. So Somali who grow crops often come together to help each other with tasks such as cultivation, planting, harvesting, weeding and threshing. They pool their labour in a system known as *guus*. A large group of people comes together to work on each member's farm in turn.

For ploughing the soil and planting cereals, the *guus* members may bring 20 or more pairs of oxen in the early morning so they can finish the work on one member's farm in a single day. The day starts with poems read to both the men and oxen. In the village, the women put aside their individual chores and work together to make tea and prepare food for the men in the field.

A month after planting, it is time to weed. Groups of men and women – not as many as those involved in planting – do the weeding.

At harvest-time, the men harvest and thresh, and the women collect the seeds. Sometimes oxen are driven over the piles of harvested crops to thresh the grain. The women are then responsible for milling.

The *guus* system saves time and money, and makes it possible to farm larger areas than one person or family could manage alone. Indeed, someone who is ill can request the elders to ask other community members for help on the farm.

### Suggestions for growing crops

It is possible to increase the amount of food and feed grown in various ways. A mix of traditional practices and methods adapted from other parts of the country may be most appropriate.

#### Diversifying cropping

- Diversify the types of crops grown. Planting crops such as date palm, cotton, rice and millet will increase the chances of a good harvest even if the rains fail (or if the rains are better than usual).
- Intercrop. Grow more than one crop in the same plot, especially if the additional crop can improve the fertility of the soil (e.g., groundnuts). Suitable crops are banana, date palm and *Balanites* sp. The residues from these crops can be used as feed.
- Introduce new crops and ways to protect crops against pests.
- Provide seeds of improved crop varieties and other agricultural inputs, such as fertilizers and pesticides.
- Introduce improved forage species to feed to milking animals.

### Forestry and conservation

- Use alley or hedgerow intercropping.
- Leave certain areas fallow for a few years while the vegetation recovers. Plant grasses such as *Pennisetum*, *Cenchrus* and *Hipernia* to help revegetate these areas with desirable species.
- Use physical conservation measures, such as bunds and diversion drains, to protect the soil and water, and to prevent erosion.
- Start outgrower schemes to produce seedlings and to buy other inputs for cropping.
- Support communities to plant trees for their own use.

### Irrigation

- Assist local people to build and maintain canals.
- Promote the use of irrigation for forage production as well as for crops.
- Provide pumps and train people how to use them.
- Help pump users organize to maintain their equipment and ensure a supply of spare parts. If there are large numbers of pumps, it may be worthwhile to train technicians to repair them.
- Promote the building of water tanks and digging of wells.
- Design appropriate irrigation systems, such as the drip system, that can be implemented using local materials and knowledge.
- Promote indigenous practices for moisture harvesting, such as steam wells (page 10) and *chirosh* (riverbed wells).
- Seek ways to eliminate unexpected flooding.

### Research and extension

Agropastoralists are unfamiliar with many cropping methods that traditional crop cultivators take for granted. That means they may need extra help to grow crops successfully. Agricultural research in pastoralist areas has also been neglected.

- Adapt research carried out in other lowland areas to the region.
- Establish demonstration fields to show the results of research.
- Train farmers how to use improved cropping techniques, such as row planting and timely weeding, and how to control pests and diseases.
- Encourage the use of animals for ploughing. This would enable more land to be cultivated.
- Train farmers on improved crop storage methods, and how to integrate crop and livestock production.

- Build demand for new crops by showing people how to use them in preparing food.
- Conserve and develop local plant genetic material.

### **Equipment and infrastructure**

Crop production suffers from a lack of infrastructure and services.

- Provide farm tools and equipment using cost-recovery schemes.
- Provide machinery such as tractors, threshers and generators.
- Increase the number of lorries so local people can market produce more easily.
- Build roads and schools.

### **Credit and markets**

- Provide access to credit to enable community organizations to grow more crops, plant trees and dig wells. Link the credit to existing projects.
- Promote organizations to form plant outgrower associations to grow crops such as cotton, sugarcane and horticultural crops.
- Establish facilities to process produce, and developing markets for outputs.
- Assist farmers to market their produce, especially of unfamiliar crops where there is no local demand.

### **Cooperatives**

- Develop stronger local organizations to help local people share resources.
- Strengthen existing cooperatives to enable them to market crops, livestock, and products such as handicrafts (see page 83). Most cooperatives currently provide only consumer goods like sugar and oil that are not available locally.
- Organize *guus* shared-labour schemes formally through a decentralized administrative system.
- Educate local people on the benefits of cooperatives.

Many of these types of assistance may be necessary for a project to succeed. This means that projects may have to be considerably more complex than at first appears. Flexibility is needed to deal with unanticipated problems as they arise (such as the need to market unfamiliar crops).

Interventions need to be planned with care. For example, food-for-work programmes have dug long irrigation channels without proper study; they caused flooding of the fields. Well-intentioned food aid also destroys the market for locally produced food.



# 6

## **Alternative foods**

**D**URING NORMAL TIMES, people in pastoralist areas rely mainly on their animals for food. Meat, milk, yoghurt and butter are the mainstay of their diet, though they also use crops and collect wild plants as food sources. If there is only a little milk, this goes to the children. The adults can look for other sources of food.

This chapter lists a few of the survival foods used by Afar pastoralists. For other famine foods used in Ethiopia, see the United Nations Emergencies Unit for Ethiopia's *Ethiopia: Famine food field guide* ([www.africa.upenn.edu/faminefood/index.htm](http://www.africa.upenn.edu/faminefood/index.htm)).

## Drought foods from meat

To prepare for long journeys or for a looming drought, the Afar make and preserve large quantities of traditional foods. Here are some ways of preserving camel meat.

### *Tobno*

*Tobno* is made by thoroughly boiling red camel meat. Melted pieces of hump and seasonings are added several times during the boiling process. The *tobno* is then cooled and stored in a *kora* (a wooden container). Highly nutritious, *tobno* is given to women who have given birth, and to sick people. The Afar believe that *tobno* hastens the healing of broken bones. If kept away from moisture, this



dish keeps well, so it is ideal for drought. Someone who eats *tobno* must not drink water or milk for several hours, as doing so causes indigestion.

### **Dubele**

Red camel meat is sliced into long thin strips and dried on racks or ropes. When completely dry, the meat is pounded in a mortar with salt and seasoning. The powdered meat is stored in moisture-tight containers. To serve *dubele*, the desired amount of powder is mixed with melted camel hump. *Dubele* can keep fresh for a year.

### **Alok hado**

*Alok hado* is prepared like *tobno*. Roasted barley, roughly ground sorghum and dried dates are added. *Alok hado* is taken on long journeys as it keeps well even for a year.

*Tobno*, *dubele*, and *alok hado* are also prepared from cattle, sheep and goat meat, but the Afar prefer camel meat. Afar women are particularly careful when they dish out these foods. They use only dry spoons as even a little moisture would cause these dishes to mould.

## **Drought foods from cereals**

### **Birkuta**

*Birkuta* is a thin dry bread (similar to chapatti) made from corn flour. It is baked on a round, flat stone set on firewood. If made with butter, *birkuta* can be kept for a long time. The *birkuta* is shredded and dried like *injera dirkosh*. It is a convenient food to take on long cattle treks and during drought.

### **Muffe (ge'anbo)**

*Muffe* is bread made from corn and sorghum flour. It is baked thoroughly in a specially-designed oven. Women dig a square hole in the ground and fit four flat stones against the sides. They make a fire in the hole, and when the stones are red hot, they plaster the dough on the stones. They cover the hole and leave the dough to bake thoroughly. *Muffe* can be eaten fresh, or if kept for future use, it is dried and pounded into a rough flour. Boiled water and flavours are added to the flour before eating.



## Other drought foods

The Afar collect many types of wild plants to prepare for drought. They eat the fruit from wild plants and trees, and use a variety of bark, roots and leaves as medicine. During drought, they cut off leafy branches from drought-resistant trees to feed to their animals. They grow date palms and fruit trees where there is enough water.

### African doum palm

*Hyphaene thebaica*, *garraito*, *zembaba*, *bar*

Reaches a height of 10–15 m and is easily recognized by regular branching which forms leafy heads. A mature palm can produce 50 kg of fruit per year. The pulp and nuts are edible. The trunk is tapped for its sap to make *doma*, a local beverage.



### African fan palm

*Borassus aethiopicum*, *zembaba*

Grows along water courses and in marshland. The trunk and leaf stalks are used for poles, timber, handicrafts, etc. The fronds and leaves are used for thatch, baskets and mats. The wood is resistant to termites and fungi. People eat the fruit and young seedlings, and use the roots, flowers, and oil from the fruit pulp as medicine.



### Buffalo thorn

*Ziziphus mucronata*, *kusraino*, *ado qurqura*, *harkey*

A spiny shrub that can grow into a tree 15 m tall. The wood is tough and bends well, making it ideal for bows and frames. The roots and fruit are used as medicine. Livestock and wild



animals eat the very acidic fruit. People eat it only in times of extreme drought.

## ***Cordia sinensis***

*Mederto*

Bears fruit both in the dry and wet seasons. People eat *medera* (the fruit) when no other food is available.

## **Date palm**

*Phoenix dactylifera*, *tamirto*, *nakilto*, *timir*

An important food and cash crop that is grown in several areas of Afar. A well-cared palm produces up to 50 kg of fruit in a year. In Ayssaita, date palm fruit fetches 6 birr per kg. The Afar use dried dates during normal times and in drought. They tap sap from the male palms to make *doma*, a popular beverage and an intoxicant when taken in excess. *Doma* is also used as medicine for a variety of ailments.



## **Desert date**

*Balanites aegyptica*, *alaito*, *gut*, *gueza*

The sour fruit of the tree is collected and dried. The dried fruit can be boiled and eaten when needed.

## ***Dilibi'ee***

A species of water lily that grows in stagnant water. It has tubers like potatoes and broad, heart-shaped leaves. People eat *dilibi'ee* when other foods become scarce.

## ***Dobera glabra***

*Garsa, gersaito, haras, garas*

A hardy evergreen shrub that grows on rocky hillsides and saline soils. Locals use the wood for firewood, timber, fodder, and handicrafts. The fruit pulp is eaten fresh, while the seeds are boiled or ground into flour and baked into bread. People use the twigs as toothbrushes.



## ***Grewia ferruginea***

*Heda*

The fruit are eaten to ward off hunger during drought.

## **Jujube**

*Ziziphus spina-christi, kusraito, qurqura*

A thorny shrub or tree that can grow to a height of 10 m. The woolly, round, yellow fruits turn red when ripe. The hard shell contains two or three seeds. The flesh can be eaten. Pastoralists make spear shafts from the wood and livestock temporary enclosures from the spiny branches. During drought, some herders feed the fruit and leaves to their animals. Women dry and pound the leaves into a powder and use it as shampoo, or sell it for cash.



## **Purple nutsedge**

*Cyperus rotundus, gadeyta, aw*

A sedge (grasslike plant) that grows in marshy areas. The tubers (roots) are grated, made into a dough and baked.



## Sycamore fig

*Ficus sycomorus*, dare, dure, mokko, mukoy

Grows along rivers, lake margins and wooded grasslands, and is adapted to many lowland areas. The Afar use the wood to carve bowls, spoons and other utensils. They eat the fruit, and use the latex as a medicine and stimulant.



## Tamarind

*Tamarindus indica*, homar, hamar, roka

A hardy tree that adapts well in very dry areas. The bark, leaves, roots and fruit are used as medicine. The leaves and fruit are fed to animals. The timber is hard and heavy, and easy to polish when made into furniture or handicrafts. Tannin is produced from the bark. The pulpy fruit is rich in vitamin C; it can be eaten raw or made into a drink.



## Toothbrush tree

*Salvadora persica*, adaito, dadaho, aras, rumei

During drought, people collect and eat *momin*, the fruit of this tree. They use the twigs as toothbrush.

## Wild almond

*Berchemia discolor*, jejeba, hamor, amor

Grows up to 18 m tall in dry, open lowland. The wood is very hard, and is used for poles, construction, furniture and handicrafts. The small yellow-green flowers attract bees (so have potential for beekeeping). The sweet ed-



ible flesh of the fruit can be eaten fresh, or boiled and eaten with sorghum. The leaves are used as tea. Basket makers pound the heartwood and roots to make black dye.

## Wild plum

*Ximenia americana*, inkoy, hudayo, mandarut, morhod

A spiny shrub or small tree, 4–8 m tall. It is used for firewood, charcoal, timber, fodder and live fencing. The oval, red fruit is sour, but is a popular refreshing snack. The oil from the pits or seeds can be used as body and hair lotion and to soften leather. It has potential for making soap and lubricant. Artisans carve the dense, hard wood into *kora*, traditional milk vases and spoons. Women can earn money by selling fruit and seeds.



### Suggestions for drought foods

- Collect germplasm to preserve threatened tree species. Facilitate research and institutional support.
- Encourage local people to preserve, conserve, and propagate indigenous trees to ensure supplies of their products.

# 7

## **Income diversification**



**P**ASTORALISTS MAY SELL animals so they can buy grain and other items. But livestock raising is risky: threats include drought, epidemics and raiding. Market prices are often lowest during drought, when animals yield little milk and pastoralists need to raise money most.

One way to improving food security is to develop alternative sources of income so pastoralists can protect themselves from economic and environmental shocks. This will enable them to earn money in other ways, and use it to buy food. Alternative income sources are rare in pastoralist areas, but they do exist, and could be developed further.

This chapter also discusses various way to help pastoralists increase their ability to exploit these alternative income sources. These include improving markets, supporting savings and credit schemes, and promoting cooperatives.

## Diversifying incomes

### Camel renting

Some Afar pastoralists rent out their camels to merchants who transport goods to Amhara and Tigray regions. The average rent for a camel is 300 birr per week. The contraband trade from Djibouti also promotes camel rentals.



### Cattle fattening

In the highlands of Harar, old farm oxen are *fattened on crop residues, weeds, and cut fodder*. Animals are tethered near the homestead or crop plots. Cattle fattening is being popularized in Jigjiga and Gursum areas.



### Dairy cooperatives

In some settled villages (*ollas*) along the main road, Boorana women sometimes sell milk and yoghurt to passing cars during the big rainy season. They sell their products quite cheaply (0.50 birr for a large cup). Somali women in Jigjiga, Babile

and other small towns sell cow- and camel-milk to consumers. Milk is highly perishable, and yoghurt goes sour after several days. If there are no buyers, the women have no choice but to give any unsold stocks to their families before they spoil.

These women could organize themselves into a cooperative to sell butter, a less perishable product, in the towns. To do this they would need churning equipment and assistance to organize themselves into a cooperative.

## Dryland farming

Several rivers in the Afar and Somali regions enable crops to be grown. Subsistence farmers grow millet, sorghum, maize, cotton, vegetables, fruit trees and other crops. *Chat* is a popular crop grown under irrigation, but has many disadvantages (page 97).

## Firewood and charcoal

Many of the regions' poor collect and sell firewood in nearby towns and along highways. Charcoal production brings in ready cash, especially from wholesale buyers who take the charcoal to the towns.

However, large numbers of wild shrubs and trees are being cut for firewood and to make charcoal. The Afar claim that outsiders have depleted the native forests.



## Handicrafts

People in pastoralist areas used not to give commercial importance to handicrafts. Pastoralists made various articles for their own use and to give as wedding gifts and to guests. Tourists visit the region and buy souvenirs. Local people are realizing the potential of handicrafts, and some now augment their incomes by making items to sell. A few make handicrafts as their main source of income.





Making and selling handicrafts enables individuals who have lost livestock or other assets to survive and gradually recover. They may even earn enough to restock their herd.

People can use the money they earn from handicrafts to buy grain and other commodities. Pastoralists can afford veterinary care for their animals, get medical care, and even send their children to school.

Various conditions favour the development of traditional handicrafts:

- The raw materials (hides, skins, grasses, leaves, wood, rocks) are found locally. Many of these materials are affected little by drought. Pastoralists can make handicrafts all year round.
- Many handicrafts are light and durable. They require only simple tools that pastoralists can take with them easily when they move with their herds.
- Handicraft-making skills are easily learned and passed on. Skilled artisans willingly teach clan members who wish to learn the trade.
- The prices of handicrafts are relatively stable, unlike those of livestock and farm produce.
- Women control the sale and distribution of their handicrafts. They have full rights to their income. They buy food and store grain for the lean months.
- The Afar do not discriminate between artisans and pastoralists. With the exception of metal workers, handicraft makers are not relegated to a lower status in society.

Artisans make handicrafts from a variety of raw materials.

- They make containers to hold milk and water, sandals, bed trusses and other articles from skin and hides. The goatskin *sar* and *koda* are also used as rafts when the Awash River floods.
- Women use substances from the leaves of *adagali* (*Cadaba rotandifolia*) and *maka'anita* (*Acacia ehrenbergiana*) and the bark and seeds of *keselto* (*Acacia nilotica*) to tan hides and skins.
- *Aunga* (*Hyphaene thebaica*) or wild date palm leaves are made into sleeping and roofing mats, brooms, fans, baskets, and other articles. The leaves are also sold in Addis Ababa, Tigray, and Dessie.
- *Gadeyta* (*Cyperus rotundus*) is a sedge that grows in marshy areas. It regenerates fast even after repeated harvesting. It is used to make mats, rafts, and other items.
- The date palm (*Phoenix dactylifera*) is a convenient source of materials for beds, brooms, containers, fans, etc.
- Wood from the sycamore fig tree (*Ficus sycomorus*) is used for carving bowls, spoons and other utensils. Constraints to the handicraft industry include:
- Trees near towns and along main roads are overexploited for fuel and construction. Recently baobab trees have been devastated to make land available for commercial salt production in Afdhera. Some handicrafts are made from slow-maturing trees that are disappearing fast.



**Popular handicrafts made by Afar pastoralists**

	Afar name	Raw materials	Produced by	Retail price (birr)
Bag for churning butter	<i>Koda</i>	Goat skin	Women	10–15
Basket	<i>Serohada</i>	<i>Salix</i> spp.	Women	15–20
Bed	<i>Ke'ada</i>	Cattle hide	Men	100–120
Bed	<i>Oloita</i>	<i>Phoenix dactylifera</i>	Men	60–75
Bracelet	<i>Madya</i>	Brass/bronze	Men	5–10
Broom	<i>Fi'ena</i>	<i>Hyphaene thebaica</i>	Women	1–2
Butter storage bag	<i>Aukes</i>	Goat skin	Women	20–30
Chair	<i>Sirbiya</i>	Cattle hide	Men	10–15
Comb	<i>Filien</i>	<i>Grewia moles</i>	Men/women	2–10
Fan	<i>Maiberaha</i>	<i>Hyphaene thebaica</i>	Women	2–5
Grain storage bag	<i>Girib</i>	Goat skin	Women	10–20
Head ornament	<i>Amoina</i>	Small beads	Women	100
Hunting knife	<i>Gile</i>	Metal, <i>Cordia</i>	Men	100–350
Milking bowl	<i>Kora</i>	<i>Ficus sycomorus</i>	Men	100
Milking vessel	<i>Ayni</i>	<i>Hyphaene thebaica</i>	Women/girls	25–50
Necklace	<i>Kadwa</i>	Small beads	Women	25
Sandals	<i>Afar-Kabela</i>	Cattle hide	Men	40–50
Sleeping mat	<i>Godeta</i>	<i>Cyperus rotundus</i>	Women	4–30
Sleeping mat, roof mat	<i>Senan</i>	<i>Hyphaene thebaica</i>	Women	70–100
Spoon	<i>Melki'a</i>	<i>Ficus sycomorus</i>	Men	10
Water container	<i>Aflieta</i>	Goat skin	Women	70–100
Water container	<i>Sar</i>	Goat skin	Women	30–50

- Traditional handicrafts used for daily life are being replaced by industrial products. For example, leather sandals are giving way to plastic and rubber footwear. Plastic and metal jerry cans are taking over from goatskin bags.
- Handicrafts are largely marketed locally. Tourists and other outsiders visit the region in limited numbers.
- Many pastoralists make handicrafts only as way to cope with drought. They do not consider handicrafts as a regular source of income.

## Petty trading

Many imported goods make their way to pastoralist areas through Ethiopia's porous international borders. People earn cash by peddling cosmetics, clothing, small electronics and other popular items. Some buy and sell locally produced commodities such as butter, grinding stones, farm implements, cooking oil, garments, and chat.

Trading can be a risky business. For example, a business-minded Afar opened a kiosk in Weranso. Many people in the neighbourhood asked for commodities 'on credit' - a demand the owner could not refuse. Then he found he could not compel his customers to pay up, so had to close shop.



## Preserving hides and skins

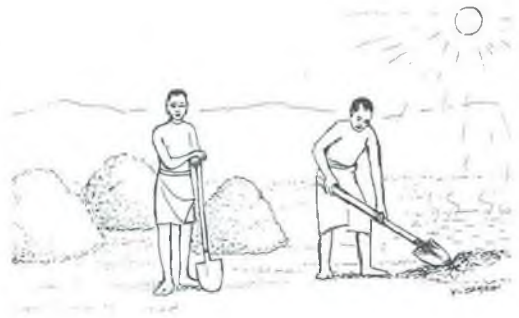
International demand for hides and skins is rising, but pastoralists are often unaware of this market or its need for good quality products. There are few traders from the local community, and people often handle hides and skins poorly. They think of hides and skins as household goods rather than a marketable product. If handled properly and transported to central markets, hides and skins could be very profitable.

Training is needed on how to flay a slaughtered animal properly, how to preserve the hides and skins at the local level, and how to develop this market. Providing simple items such as metal sheets and padlocks would enable people to build shades for drying skins and protecting them from predators.

## Salt production and transport

In Afar, some entrepreneurs from Afdera, Dobi, Dallol, and Berhale use traditional methods to produce salt. Salt is also produced in the Somali zone of Afder.

The Boorana breed of cattle is highly susceptible to a lack of salt. Boorana pastoralists get salt from Dillo, Magado or the Salt Crater lake (Chew Bet). The salt must be brought a long way by each household individually. Supplies of salt and the productivity of the livestock could be improved by providing donkeys to poorer community members. They could then bring salt from Chew Bet to central locations, where other families would use it.



## Traditional medicines

Afar herbalists charge a minimum of 2 birr for each head of cattle they treat. They may charge more if the disease is severe. Somali herbalists earn an average of 25 birr a day.



## Water selling

A number of individuals in the Jigjiga plains and Ogaden areas of Somali region sell water from their cisterns to pastoralists.





### Suggestions on diversifying incomes

- Improve roads and transportation enable small entrepreneurs to access markets.
- Help establish cooperatives and credit schemes to facilitate marketing. Communities need to take the initiative to get outside support for such institutions.
- Assist communities to conserve their natural resources to ensure sustainability of their different sources of livelihood.
- Help pastoralist communities and settled artisans to create markets for their handicrafts.
- Involve men and boys in harvesting and transporting raw materials to ease the workload of women and girls.
- Assist pastoralists with skills training, awareness creation, and credit and savings schemes to promote the traditional handicrafts industry.
- Develop micro-projects to enable disadvantaged groups to take advantage of economic opportunities.
- Explore other ways to assist small businesses.

### Strengthening markets

Open-air markets are held routinely all over Ethiopia. They offer farm produce, handicrafts, livestock and livestock products, and a whole range of local and imported merchandise. In the Afar region, these open-air markets are called *adaga*. People transact business, exchange information, and entertain themselves.

Climate and holidays dictate the prices of local produce, livestock and livestock products. Fewer livestock are taken to market during the rainy season. During this time pastoralists want to keep their herds as large as possible for security. When the grazing is abundant, there is little need to sell animals. This raises the livestock price. When the rains cease and pastures shrink, many herders take their animals to the *adaga*. With so many animals for sale, prices drop drastically. Farm produce becomes more expensive during the dry season as it can be grown only with irrigation or brought from the highlands. Religious holidays also affect market prices. Livestock, milk and butter become expensive during religious holidays, but drop in value in normal times.

Many Afar now eat pasta, rice, flour, and sugar in addition to their staples of milk and meat. Traditionally, rural Afar do not sell or buy milk and meat. An individual may slaughter an animal from his own herd to provide meat for family consumption. He may also join a group to slaughter a camel in the wilderness and share the meat. The individuals pay the owner of the camel in kind -

perhaps in the form of calves or other animals some time in the future.

Selling camel's milk is no longer a taboo among Afar near the towns. Camel herders sell milk and butter in the towns. Pastoralists sell a variety of livestock: *bokole/bekels* (male kids, 7 to 15 days old), goats and sheep, cattle, old and infertile cows and camels. Male animals are sold first. Fewer *bekels* in the herd means more fodder for the does and more milk for the children. The best of the male animals are kept for breeding.

The Afar have deeply entrenched traditions of helping one another communally. Having to share everything they have, they do not save either cash or grain for times of scarcity. The Afar traditionally share resources at ascending levels, starting with immediate family and relatives (*bura*), followed by a grouping of extended families (*dahla*), lineage groups (*afa*) and sub-clans (*kaidoh*).

Better-off Afar are culturally obliged to aid the destitute in their families and clans. If more clan members can have access to the *adaga*, this dependency can be reduced.

Pastoralists follow their herds in search of pasture. As they go farther away from the *adaga*, the value of their animals falls. Animals trekked for as long as 4 days fetch poor prices. Herders dispose of exhausted animals at throwaway prices rather than trek them back. If they are far from an *adaga*, pastoralists cannot readily buy commodities they need.

The *adaga* are important to the people of the Afar region. Pastoralists, farmers, merchants, and all other inhabitants use the *adaga* for business. If business is good, food is assured. The exchange of commodities at the *adaga* gives variety to





### Suggestions on markets

- Improve roads and transport in remote areas.
- Strengthen the marketing system of animals, especially during drought. Establish more *adaga* with the needed facilities at strategic locations. Pastoralists need effective marketing systems which include market information and lucrative outlets for their products.
- Design strategies at the sub-clan level (*kaidoh*) to ensure food security involving local markets.
- Press the government to facilitate trade, and to lift the ban on unauthorized cross-border trade.

traditional diets and household assets.

## Savings and credit

Savings and credit institutions have two major benefits:

- They stabilize incomes and consumption. Pastoralists' incomes depend on seasonal events, and their demand for cash is also seasonal. Savings and credit schemes minimize the likelihood of forced sales of livestock during drought, when prices are low. Savings allow the pastoralists to have regular income and consumption patterns.
- They enable people to diversify their income sources and reduce their vulnerability to future shocks.

However, providing credit is difficult in pastoralist areas because of the cyclical nature of drought. During a drought, many people need cash at the same time, and many people are unable to make contributions to their savings or to repay loans. This means that credit institutions face the danger of bankruptcy at these times. Donors may find it necessary to top up the capital of savings and credit institutions periodically to prevent them from failing.

One way of reducing this danger is by spreading risk – by loaning only for certain types of activities that are likely to succeed, or by diversifying credit across a range of enterprises. If one type of enterprise fails, the others may still be able to repay loans and generate income for the lending organization.

Establishing savings and credit schemes is also difficult because some pastoralist communities are only now being introduced to a cash economy. They move frequently with their herds, so it is difficult to operate credit and saving schemes. Plus, Islamic rules forbid the charging of interest (they make a service charge instead). And borrowing any substantial amount takes so much time that many pastoralists (particularly women) are discouraged.



Good savings and credit schemes create awareness of the importance of saving, and build their members' capacity to initiate and manage small businesses that do not rely directly on pastoralist activities.

This section describes two successful savings and credit projects that may act as models for other schemes.

## **Savings and credit in Didi Hara**

A savings and credit project in Dida Hara, Boorana, loans small amounts of money to people in this semi-sedentary area. The project used seed money from the Global Livestock Collaborative Support Program – Pastoral Risk Management (GL-CRSP PARIMA) to start a credit fund to support micro-enterprises. It was implemented by PARIMA, Action For Development (a local NGO), and three government agencies from Oromiya.

The project provides credit to members of 175 pastoralist households, more than half of them women. It relies on peer pressure to ensure that everyone follows the rules. The beneficiaries form small 'primary' groups of five to seven people each. To qualify for a loan, members must meet certain criteria: they must be creditworthy, be able to engage in the business they have chosen, have saved at least 10% of the amount they want to borrow. If they fulfil these criteria, they can apply for a loan from their primary group.

The group appraises the application, and forwards it to the 'secondary group' – consisting of five primary groups – for further discussion. If the secondary group approves the application, the member receives the loan.

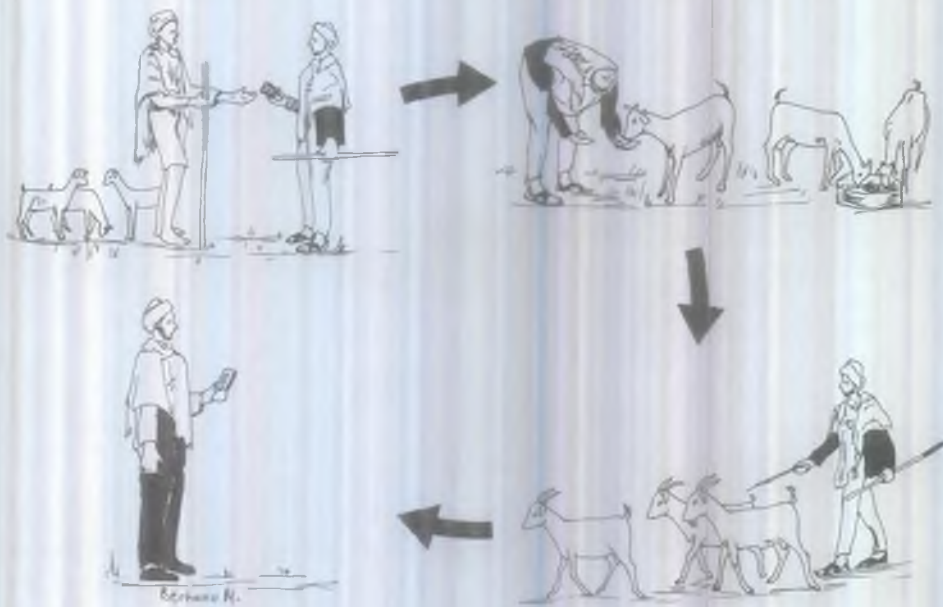
Group members are encouraged to mobilize local resources to develop a savings culture. Each must make regular contributions to their savings. One must save at least 100 birr before receiving a loan.

The size of the loan depends on three things:

- How much money is available
- How much money the member has saved
- The type of project the member want to start.

The first loans were made in March 2002. Ninety people received loans for 6 months. The average size of loan was 660 birr. The borrowers invested their money and made an average profit of 500 birr. All were able to pay back the original loan and the 10.5% interest. Another 90 people were then granted loans. The project is now on its fourth loan cycle.

The borrowers used the money for different activities. Some started livestock and other petty trading businesses, such as selling grain or keeping small shops to sell sugar, tea, etc. Most were involved in fattening cattle and goats. They bought the animals before the beginning of the rainy season in March, and fat-



*Buying and fattening goats can be profitable*

tened them from April to June when there was good grazing. They sold the animals in nearby livestock markets such as Didi Hara, Yabello, Dubluk and Moyale early in the dry season.

Most of the beneficiaries' businesses depend on good weather. PARIMA researchers are interested to see how they deal with drought when they have savings. They expect that either the amount of savings will fall, or the group members will stop saving for a while. The researchers also hope they will sell marketable animals before the drought reaches the crisis stage, so preserving part of their wealth as cash.

A second component of this project offers non-formal education to local people, including many members of the savings-and-credit groups. Many of the 187 people enrolled have learned to read and write. They can now keep simple records of cash transactions in their savings and credit booklets, and can work out how much profit they have made.

Project participants have also visited places to learn about rural finance and small-scale business management

The success of the Didi Hara project has encouraged other people in the area. More savings and credit groups have been established elsewhere on the Boo-



rana plateau. Some group members have performed exceptionally well, further encouraging others.

## The 'eyes of the night'

Somali women in Afder and Liban zones, in southeastern Ethiopia, earn money by selling food and drink along the main road at night. They sell spaghetti, rice, chapattis, tea, and camel and goat milk. These women are known as *elaw*, or 'eye of the night', because they stay up all night and trade by the light of their lamps. Business is poor because there are few customers, and the food spoils quickly. The women also expose themselves to security risks.

Some women in Dollo, on the Somalia border, sell goats on commission. They are known as *balegemed*, or 'women with ropes'. These *balegemed* take their ropes to livestock sellers. They negotiate a price, then use their ropes to lead the goats to the market place to sell.

In 1999, Pastoralists Concern Association of Ethiopia (PCAE) gave 200 birr to 20 of these *elaw* and *balegemed*. The women repaid 10 birr every week, plus a service charge of 5 birr. After 20 weeks, when they had repaid their initial loans, they were able to qualify for a second-round loan of 1000 birr.

The group used the accumulated service charge to fund projects for the community, or that the group as a whole selected. Encouraged by the pilot project, several other women have started trading using their own money.

The success of this initial group mobilized nearly 300 women to start their own businesses with PCAE loans. To make sure the loans are repaid, the women form groups of fives, and act as guarantors for one another. They explore other nearby opportunities to invest their money or to expand their businesses.

Through teamwork and by involving traditional leaders and elders, these women have coped with various challenges: currency fluctuations, insecurity, drought





and lack of transport. Every day, they send one member across the border into Somalia to check on the exchange rate there.

The project has created a diversified market in the community. More people can now purchase commodities brought in by outside merchants at prices they can afford. Pastoralist families are beginning to participate in savings and credit schemes. The women are acquiring simple business management and problem-solving skills. Through a variety of profitable trades, more women are able to feed their families better.

Below are three cases that illustrate the project's success.

- Marwo Mohammed, a 47-year old widow, heads a family of five. She used to weigh meat at a local butchery, where she earned  $\frac{1}{4}$  kg of meat and 2 birr a day. But one day her boss gave her 50 cents and a little meat, then fired her. Marwo gave up her next job, too, after a disagreement with her boss. She learned about PCAE's project from friends. She qualified for the initial 200 birr loan, which she used to buy a sheep for breeding and a goat to slaughter and sell. She paid back the loan and got a second loan of 1000 birr. She can now buy enough food for her family and send her eldest child to school.
- During the Ethiopia-Somali war in 1977, Faduma Salat's family entire live-stock assets were confiscated. She fled to a refugee camp in Somalia where she lived for 10 years. During the chaos after the fall of the Somali government in 1991, she and her family returned to her home village of Haysuftu in Ethiopia. After her husband died, Faduma started selling tea along the main village road. The PCAE credit and savings programme enabled her to buy and sell goats at Negelle, the nearest major market. Her two daughters continued to sell tea by the roadside. Faduma is delighted when people call her sons-in-law lucky for having a well-off mother-in-law.
- A widow with seven children, Amina Kahin started a butchery business with 100 birr she borrowed from a local merchant. She repaid the interest every day, but that left her enough to feed her children only once a day. Amina was among the first beneficiaries of PCAE's revolving fund. She has expanded her butchery shop and now also sells vegetables and other com-

### **Suggestions on savings and credit schemes**

- Make credit and savings services accessible to pastoralist communities.
- Regional microfinance institutions should increase their involvement in such projects.
- Provide basic training and organize exchange tours so people can learn from others' experience.
- Pastoralists learn best from other pastoralists. Use them as teachers.
- Involve the local community in the project from the beginning. This makes it more likely to continue even after the donor pulls out.

modities. Her increased income has enabled her to build her own house. Her children now eat three adequate meals a day. Some of her children are in school, and she can afford their books and school supplies.

## Cooperatives

Cooperatives let people to pool their resources and accomplish what no individual can do alone. For example, one small-scale producer may find it difficult to market his or her produce. A group of producers, however, can hire a lorry to transport their output to the market.

Successful cooperatives rely on certain basic conditions. Constraints include drought, ethnic and clan conflicts, and the low level of education of coop members. The disparity in power between men and women, and the reluctance of women to become members of coops where the majority of members are men, mean it is difficult to form mixed-gender coops.

Cooperatives are often, but not always, linked to savings and credit schemes (see previous pages).

Ethiopia has a history of enforced cooperatives, so people may be suspicious of the idea. One way to promote them is to show local people examples of working cooperatives that clearly benefit their members.

### Bringing milk to Moyale

Erder, in the Boorana Zone, is about 60 km from the town of Moyale, an important market and source of goods on the Kenya–Ethiopia border. Women in Erder have formed a cooperative to sell milk and butter to traders, restaurant owners and families in Moyale. At least two lorries a day deliver the women's dairy products to the town, and bring back sugar, salt, tea, soap and processed food that the women can sell in Erder. The women have an arrangement with the lorry drivers to transport and barter their goods.

Membership in the cooperative brings several benefits. It enables the women to





qualify for a loan from the South Ethiopia Synod, that helped form the coops with support from Norwegian Church Aid. Groups of five or six women apply for a loan for each member. One member can qualify for a loan only if her fellow group members have already repaid theirs. The social pressure ensures that the women repay promptly.

The loans are intended for trading activities that will generate an income. The women use the money to buy additional milk or butter to make up a sufficient amount to sell. They also use it to buy goods in Moyale that they can sell in Erder.

The women use their profits to support their families and to expand their businesses. Several have made enough money to be able to open their own shops in Erder. Others have bought cows to produce milk, bulls to resell, or maize to sell in the Erder market. Each woman has a bank account in Moyale with a pass-book they can use to save money.

The coop provides training on how to manage a coop, business management, income diversification, marketing, and subjects such as HIV/AIDS.

Their financial independence has helped these women develop confidence and has added to their status. They are less dependent on their menfolk, and this has helped sustain family relationships and has given them a new role in society.

## **Livestock cooperatives in Dire**

Two cooperatives in Erder and Melbana in the Boorana Zone are helping local pastoralists to bridge gaps when they do not have enough to eat.

Pastoralists usually have many animals, but they do not have cash or enough grain. If the price of animals is low, they may be forced to sell stock at a loss in order to buy other essentials. The two cooperatives, established with support from the South Ethiopia Synod and Danish Church Aid, help them overcome this problem.





The cooperatives buy grain at reasonable prices in the highlands and bring it to Erder or Melbana by lorry. A pastoralist who needs grain can bring an animal to the cooperative and exchange it for grain at the prevailing market price - which may be low. The cooperative keeps the animal until the price rises. It then sells it at a profit - an animal often fetches as much as four times its initial price. The cooperative deducts a service charge, and returns the remainder of the money to the previous owner of the animal. The service charge covers the cost of feeding and caring for the animal, as well as an administrative fee and a percentage profit that goes to the cooperative.

Pastoralists do not have to be a member of the cooperatives to take advantage of this service. The coop members get a dividend, paid out of the service charge.

The cooperatives also trade in grain, sugar, salt and other essentials. This helps generate a profit and supports their running costs.

Each of the cooperatives has a grain store with a capacity of 300 tons. These buildings have been valuable to store relief food and to serve as distribution points during emergencies.

People pay a registration fee of 300 birr to become members of the coop. Membership is growing. In 2003 there were about 60 members in the two cooperatives; 10% of them were women.

The coops are run by the members themselves. The South Ethiopia Synod has given them training in cooperative management and leadership, marketing, savings and credit, and accountancy.

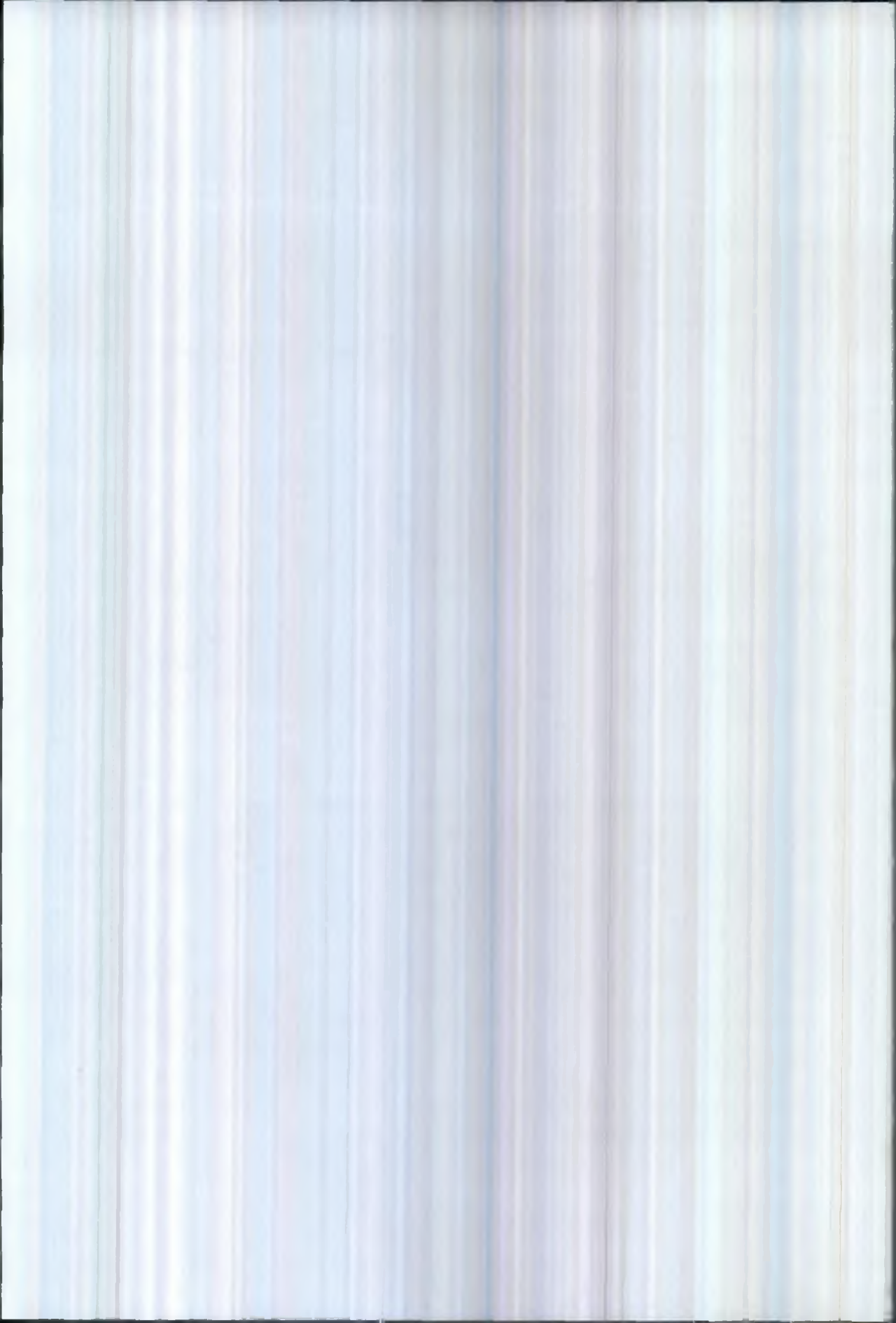
This business model is profitable, so has attracted imitators. Three new coops

### **Suggestions on cooperatives**

- Establish cooperatives, provide training and initial capital, and
- Promote the development of facilities such as grinding mills.
- Adapt modern institutions such as cooperatives to suit the local socio-economic and cultural situations in pastoralist areas.

have been set up in the *woreda* using a similar model.

The *woreda* administration and the local branch of the Ministry of Agriculture have been very supportive to the coops. They provide training on savings and credit, use of dividends and cooperative bylaws, and assistance with simple bookkeeping and auditing.



# 8

## **Institutions**



**D**EVELOPING LOCAL institutions can have a major impact on food security. A relatively small amount of donor funds, wisely invested, can stimulate people's abilities to feed themselves, and can boost their confidence in their ability to solve their own problems. Pastoralists, like anyone else, can adopt innovations readily if they address their real needs.

This section addresses various types of institutions in pastoralist areas: traditional institutions, gender, and the spreading habit of chewing *chat*.

## Traditional institutions

Pastoralist societies have strong traditional forms of social organization, based on kinship. Each person is a member of a lineage group or clan. Members of these groups share resources among themselves and cooperate in economic activities.

Traditional institutions govern the behaviour of their members. They determine who has rights to which grazing areas, water and other resources. They manage relationships among clans and sub-clans, and adjudicate disputes.

These institutions are run almost exclusively by older men. They make decisions that affect everyone else in society.

Religious organizations are also important. Most Afar and Somali pastoralists are Muslims, and religious leaders exert an important influence, for example in distributing assistance to the poorest in the community. Many Boorana practise their own religion, and their spiritual leaders play a similar role.



Women do have their own method of organizing themselves – for example, the institution that revolves around the *siiqqee* stick carried by married Karayu women (see page 95).

Marriage practices vary among pastoralist societies. For example, a Sabo Boorana man is expected to marry a Gona Boorana woman, and vice-versa. Somalis must marry someone from outside their own primary lineage, The Afar man marries his cousins. Marriage outside the pastoralist group (for example, a Somali marrying an Amhara) is rare and is generally frowned upon.

The different pastoralist groups have different traditional institutions, so it is difficult to generalize about them. Most are based on lineage (groups of related people) or territory (where the person comes from), or some combination of these. The institutions vary even within a pastoralist society. For example, the Somali in Liban and Afder have a different system from Somali elsewhere.

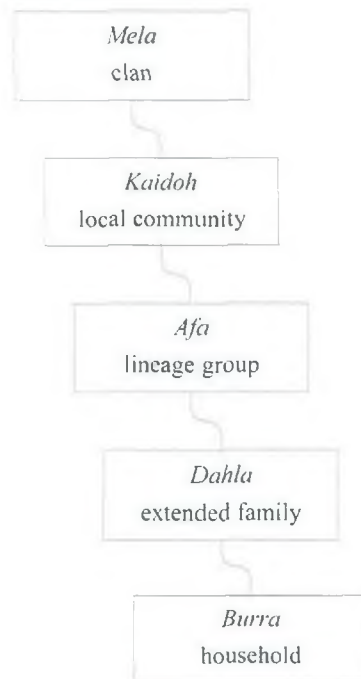
Former pastoralists who live in towns may owe allegiance to their clan, but their ties tend to be weaker. Non-pastoralist immigrants fall outside the traditional institutions. This results in friction when the interests of the immigrants clash with the traditional groups.

Traditional institutions are particularly important in handling crises such as drought, famine and livestock epidemics (page 25). Elders decide whether and where the community should migrate in search of water and pasture. They negotiate agreements with neighbouring groups on the use of water and pasture. They manage mutual-help mechanisms (such as *busa gonofa* among the Boorana, page 26) that aid the weakest members of society.

### Traditional Afar institutions

Afar have strong social bonds and share resources equitably. They are governed by traditional law, known as *Afar ada*. This is highly respected and effective in managing conflict and social problems, and in providing leadership to pastoralist communities.

The Afar are organized into clans, called *mela*, each with a hereditary clan leader, a *finna aba* or *feima aba* responsible for carrying out punishments, and a group of elders. Each level has its own leader, referred to as *aba*, e.g., *burra aba*. These leaders manage the clan's internal affairs: they organize assemblies to



Example of a traditional Afar social structure. The names and details vary from one group to another.



settle disputes according to customary laws. Religious leaders and elders help them resolve murders, theft and other crimes.

The animals belonging to *kaidoh* (local community) members are seen as a kind of social fund that other members can call on if they need. Someone who has lost all his animals can take animals from another member without permission. This is an important form of support for the weakest members of Afar society.

The Afar have a system of law, or *meda*, through which disputes within and between clans are settled. As a Muslim community, Afar is governed by some of the rules of Islam and by a unique system called *sheka*. The *sheka* are people who have authority over religious issues such as the teaching of the Quran, conducting funerals and marriages and advising leaders and the sultanates.

Different decisions are made at different levels of the traditional hierarchy. These include decisions on how to use water and pasture, livestock sale and livestock migration. The first point of contact for outsiders is usually the clan leader (*kido aba*). These leaders should be the focal point of any development activity in the area.

Living as they do in remote areas, communication is vital to the Afar. Their traditional communication system is called *dagu*. This system enables information to be passed from one person to another via either acquaintances or strangers. A conversation begins with the traditional Arabic greeting, *salaam aleikum*. The person with the information introduces him- or herself, says where he or she comes from, and what his or her clan is. Only then is the news shared.

During *dagu* the person with the information is obliged to pass all of it to others. There are no secrets in Afar society once information has been passed to another





person. A person who withholds information will become an outcast (*areokelle*). The process of passing on the information is slow, and the listener must be patient.

*Dagu* can take place between people of any age and sex. Elders and clan leaders speak first. However, there can be no exchange of information between women and men who are not related.

*Dagu* enables people to find pasture and water during a drought, and warn others of threats such as an impending drought, insecurity or diseases. It is also used to pass on information that people have heard over the radio, or to share market information. It helps livestock owners decide where to sell their animals and at what price.

The government has tried to integrate traditional Afar institutions into the local *kebele* administrative structures. Clan leaders have become part of the *kebele* administration, and the government consults them on administrative issues, development activities and conflict mitigation.

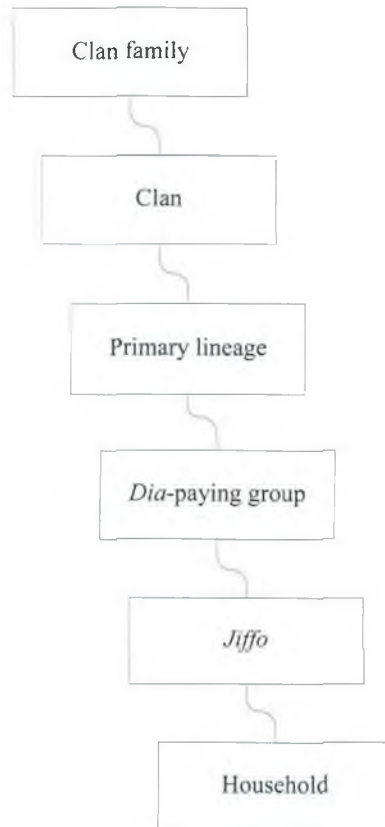
## Traditional Somali institutions

Somalis are organized into clan families, clans, primary lineages, *dia*-paying groups, *jiffo* units and households. The primary lineage (a group of related *dia*-paying groups) is the most stable political unit within a shifting system of allegiances and alliances among clans and lineages.

People are expected to marry outside their primary lineage, and only in rare cases within it. While primary lineage groups are linked by marriage, feud and stock theft tend to be endemic between them.

Lineage is traced through the male line: through fathers, grandfathers, uncles and brothers, rather than through the female line.

Members of the *dia*-paying group share a common male ancestor 4–8 generations back. They accept responsibility for the actions of other members. For example, they must pay compensation



*Traditional Somali social structure*

if one member kills someone from a different *dia*-paying group.

*Dia*-paying groups are divided into *jiffo* units, which are composed of a man's close relatives. The *jiffo* unit is usually responsible for a larger proportion of the damages if a man in the group injures someone else. It also receives a larger proportion of the compensation if they are the injured party.

### Traditional Boorana institutions

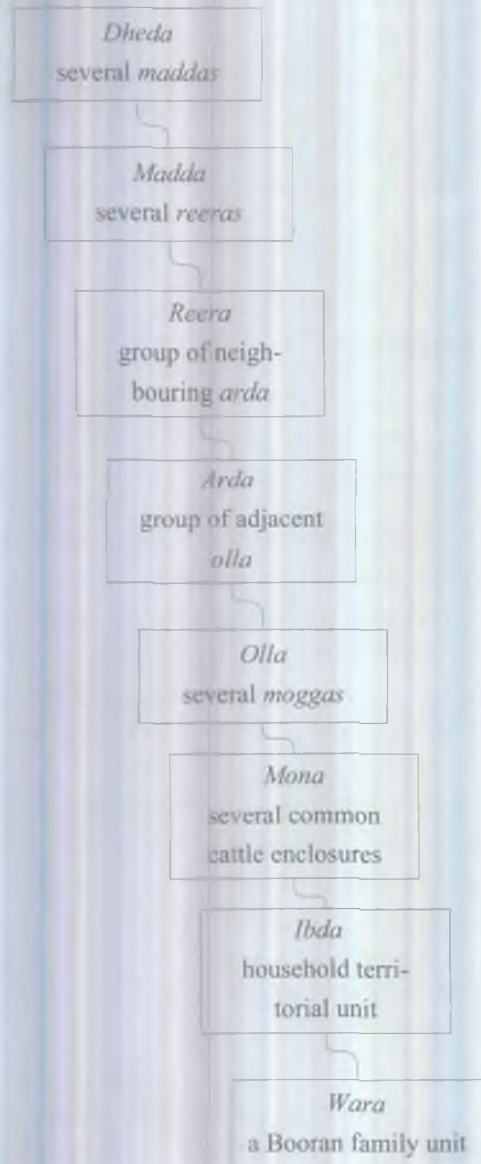
The Boorana consist of two major groupings, known as the Sabo and Gona. These are divided into clans: the Karayu, Digalu and Matari for the Sabo, and the Fullele and Haroressa for the Gona. These clans are in turn subdivided into groups of related families, or lineages. These lineages and clans operate on the basis of seniority when it comes to watering animals at wells.

A Boorana village or encampment is called an *olla*. It includes several common cattle enclosures (called *mona*), each of which is run by a *wara* family unit.

Several neighbouring *ollas* make up an *arda*, which is managed by the council of elders called a *jarsa arda*. A number of *ardas* constitute a *reera*, and several of these in turn make up a *madda*. The *madda* is usually named after a permanent water point.

*Gada* is the traditional system of social organization among the Boorana. It is the foundation on which Boorana pastoralists manage their rangelands and govern themselves.

The *gada* system is based on a complex system of age grades. A boy enters the first grade when he is about 8 years old. He spends 8 years in this grade, before progressing to the next higher grade, which also lasts 8 years. There are five grades in all, so the man will be about 40 when he enters the uppermost grade.



Traditional Boorana territorial organization

Each grade is expected to do certain types of work (the youngest run messages, youths are warriors, etc.) and has privileges (such as getting married).

The most senior age-grade forms the *Gada* Council. This formulates and interprets customary laws, adjudicates disputes, and is responsible for teaching the younger generation about customary law. Some of the council members inherit their positions. Others are elected by the members of their *gada* age group.

The *ada*, or customary laws, cover such areas as inheritance, family law and marriage, the prerogatives of traditional leaders and of women and girls, and the management of water, wells and pasture. They also include the *busa gonofa* mechanism of mutual assistance (page 26).

Every 8 years, the head of the *Gada* Council, called the *aba gada*, hands over power to his successor at the *Gumi Gayo*. This is a Boorana-wide assembly that meets at a place called *Gayo*. It is when the previous 8 years are evaluated, new policies are made, and the *gada* tradition is preserved, adapted and handed down to the next age group.

Much of the traditional knowledge and oral histories of the Boorana are connected to the land. They attach special spiritual meanings to shrines or sacred places. They worship their ancestors and conduct special religious ceremonies that have been passed down from generation to generation. Many ceremonies involve offerings to the spirits of nature. People use them to ask *Waka*, or God, to give them rain, peace and stability.

## Social security

In all pastoralist societies, richer people are obliged to help their poorer relatives. *Hantilla*, for example, is when a milking animal is given to destitute Afar so they can have milk. The recipient must return any offspring born to the animal's original owner, but if it has many young, the destitute person may keep one. A destitute herder can ask for a *hantilla* milking animal, or the owner of a large herd may give an animal to someone who needs help. This takes place during the rainy season when there is a lot of milk.

*Zeka* is the Islamic alms payment. It is an animal tax, calculated by the religious leaders based on the number of animals owned.

People who have lost animals through epidemics or raiding can go from house to house asking for *irbu*.

The Afar have other arrangements they use like when a woman has a baby, to feed people who are ill, or during weddings. Other ethnic groups have similar arrangements. Under the Boorana *busa gonofa* system, destitute people can appeal to clan leaders for help. The poor may even be entitled to take animals from their more fortunate clan members.

Mutual support tends to be stronger among pastoralists than among cultivators, since these people live in a very risky environment and are more often



thrown upon the goodwill of their relatives and neighbours. They share a common resource: land. They are also dependent on a very limited number of water sources during a drought, so must cooperate to use these efficiently.

## Weakening traditions

Local government is organized into zones, *woreda* and *kebele* administration. This is different from how traditional institutions are organized - into *kaidoh*, *afa*, *dahla* and *burra* for the Afar, for example. Lack of communication, delays and frustrations are inevitable.

Traditional institutions have been weakened by government policies and development agencies. Funding and skills flow through the government system. The traditional institutions receive very little outside support, so lack capacity and have tended to wither.

Development agencies usually work with government agencies, or set up completely new organizations. Food aid and other forms of relief and development assistance undermine the traditional system because they bypass it.

Nevertheless, traditional institutions are a valuable basis for development efforts. They are well adapted to the local economic, social and biophysical situation. Local people understand how the system works, and they accept the authority of the traditional leaders. Although they exclude women from decision making, traditional institutions often have more elements of local-level democracy and participation than the government system.

### Suggestions for traditional institutions

- Recognize, respect, strengthen and work through the traditional social institutions and systems of administration and laws, rather than undermining them. These traditional systems are particularly useful for managing water and pasture, settling disputes, and helping poorer people in the community.
- Draw on indigenous knowledge, communication networks and organizational skills.
- Encourage pastoralists to make their own decisions to solve their own needs and overcome problems they identify.
- Reinforce traditional communication systems such as the *dagu* by providing access to modern communication facilities to speed information exchange.

## Gender

In general, female pastoralists are ignored by development projects and policies. They are severely disadvantaged compared to men. They have few opportunities for education or social interaction. Many are subjected to genital mutilation and forced marriage. Few have their own source of income.

This has major implications for food security. Poorly educated women are less likely to be able to give their children nutritious food, prevent them from falling ill, or treat them when they do.

Because men are the leaders and decision makers in pastoralist societies, it is sometimes mistakenly assumed that women play no significant socio-economic role. Government agencies and development projects tend to neglect them. This is part of the reason many development interventions fail in pastoralist areas.

A pastoralist household consists of the husband (the household head), one or more wives (depending on the number of animals the household owns), and three or four children (depending on the number of wives). Tasks are generally divided between the men and women.

- **Productive activities** Men are responsible for pasturing livestock and selling animals to buy grain and other household needs. Women do the milking. They process milk to make butter when there is enough surplus. Both share the work of watering the livestock – every 3 days during the dry season.
- **Reproductive activities** Women are responsible for household chores such as cooking, washing, caring for children and the sick, and fetching water and fuel. They also build traditional huts.
- **Community activities** Men attend clan meetings, carry messages, and pay tribute to traditional and spiritual leaders. They represent the household and clan, and act as ritual traditional or religious leaders. Both men and women attend rituals and ceremonies.

### Karayu women and *siiqqee*

In the Boorana *gada* system (page 92) every man is born in to a *gada* grade. Women are actively excluded from this system. But they have their own tradition that protects their rights and empowers them to take part in the social, political, economic and religious activities of the society.

This tradition is embodied by a *siiqqee*, a long, thin stick that women carry. The *siiqqee* allows a woman to own and manage property. It also protects her and gives her status. As long as she is holding her *siiqqee* she will not attract unwanted attention. She also holds the stick when reporting incidents of violence or bad treatment. She can use her *siiqqee* to stop conflicts between clans and between individuals. Preventing violence promotes food security by balancing





A bride and groom accepting their tirma (siiqqee gift)

the harmony in the community. Men who fail to respect the *siiqqee* will be punished by clan elders.

In the Karayu and other Oromo communities where *siiqqee* is practised, a woman can get whatever she asks for when holding her *siiqqee*. So if there is crisis in the family – for example if the house has burned down or family members are ill – the woman can hold her *siiqqee* and ask for *hirpha*. This is a contribution of cattle to a person who has been affected by a crisis. It allows a person to make a fresh start and ensures that her family can survive.

When a Karayu girl gets married, her mother gives her a *siiqqee*. Her parents and relatives give her *tirma* (*siiqqee* gift), which includes a heifer, a cow with calf, sheep, goats and a camel. If she proves to be a virgin on the wedding night, her in-laws give her a gift of cattle. These gifts are her exclusive property. She can use them without consulting her husband, and can sell them if she wishes. This property is a source of empowerment, sparing her from total dependence on her husband.

On the day after the wedding, the bride and groom go to his family's cattle herd, and both choose the animals they want to start their married lives with. The bride uses her *siiqqee* to point out the animals she chooses.

### Suggestions on gender

- Consider the situation and needs of women when planning development interventions.
- Recognize the important role that women play.
- Find ways to accommodate women in day-to-day consultations as well as longer-term planning.



Karayu women work together to build their houses and take care of the home while men take care of the cattle. The group of women plant trees and vegetables near the house to produce additional food for their families. This collective labour is called *jiga*.

## The threat of *chat*

Chewing *chat* (*Catha edulis*) has become a major social activity among men in many parts of the Afar and Somali regions. Groups of friends (mainly men) buy bundles of this plant, and gather to chew. A mild intoxicant that contains amphetamines, *chat* produces a relaxed feeling of openness and euphoria similar to the drug 'speed'.

*Chat* is a major threat to food security in the Afar and Somali regions. It damages not only the health of the addict. It also reduces productivity, distorts the economy, and damages the fabric of society. Contrary to popular belief, it is a relatively recent introduction to many pastoralist areas.

*Chat* speeds the heart rate up to 40 beats a minute faster than normal. This overworks the heart, interferes with the body's ability to absorb vitamins, and leads to various other health problems: gastritis, constipation and kidney failure. It also results in a loss of appetite, lack of sleep, and mental problems. Someone who is 'high' on *chat* becomes talkative, dreams the impossible and makes expansive claims.

*Chat* is grown in large quantities in many parts of Ethiopia, and forms a major part of trade in growing and importing areas. Farmers grow *chat* instead of food, traders deal in *chat* instead of essential goods, and addicts spend a large proportion of their income to finance their habit.

Because *chat* chewing is a social pastime, chewers buy large bundles of *chat*



### Suggestions on *chat*

- Explore ways to discourage the growing and chewing of *chat*.
- Advocate the government to stop supporting the *chat* trade, and to find alternatives for farmers to grow.

so they can make friends and gain influence. They neglect their work, reducing productivity and output. They also neglect their families, leading to broken relationships. They gravitate towards the towns, where *chat* is readily available. The wives and children left behind suffer most.

# 9

## Services



**I**T IS A CHALLENGE to provide services such as schools, health care, extension advice and veterinary services in pastoralist areas. These areas are vast. There are few roads, and infrastructure such as electricity, telephones and water supplies are scarce. The population is scattered and mobile. Outsiders find it difficult to understand and relate to the pastoralist lifestyle. Literacy rates are among the lowest in the world, so few educated pastoralists are available to serve as trained teachers, doctors, nurses, extensionists or vets.

Rather than spreading resources too thinly, the government provides services in a few towns. The result is that the few services available are located in the towns – hardly convenient for people who must follow their herds in search of water and pasture. Pastoralist women suffer the most from the lack of services: they are less mobile than the men, and visit town rarely.

This chapter describes several alternative approaches to providing education, health, marketing and other services in pastoralist areas. It presents three basic approaches:

- **Services at a fixed location** PCAE's approach to girl's education
- **Mobile outreach camp** FARM Africa's temporary camps staffed by live-stock and extension specialists
- **Community-based services** APDA's approach to literacy training and health provision.

The most appropriate approach depends on the circumstances – for example, the type of service to be provided and the characteristics of the people served (pastoralists, agropastoralists, farmers, urban).

Obviously the distinctions between the three approaches are not sharp. There may be considerable overlap between them. For example, community-based services may rely on specialists based in town (or in mobile camps). The best approach may be a mix of two or more types.

The table on the next page summarizes the main advantages and disadvantages of the three approaches.

This chapter deals with health and education. Veterinary services are covered in Chapter 3, while agricultural extension is mentioned in Chapter 5.

## **Schools for girls**

Educating girls has a major impact on food security. An educated woman will provide more diverse and nutritious food to her family. She will know to keep her hands and utensils clean, and to use clean water. Fewer children die of malnutrition and disease. Healthier family members are better able to feed themselves and others. Educated women are more able to earn money themselves to

## Service provision in fixed centres, by mobile teams, or by community members?

	Static	Mobile	Community-based
<b>Characteristics</b>	Facilities in town staffed by outsiders	Mobile camp staffed by outsiders	Community members trained in specific skills, live in and serve their communities
<b>Advantages</b>	<p>Easy to recruit and retain qualified staff</p> <p>Easy to manage</p>	<p>Good entry point to pastoralist communities</p> <p>Enough time for detailed but relaxed discussions</p> <p>All community members have access to services</p> <p>Staff can observe and understand realities and plan activities</p> <p>Builds mutual trust between staff and pastoralists</p> <p>Limited dependency created</p> <p>Central venue to solve conflicts</p> <p>Cost effective</p>	<p>Services are always available in community, especially during migration</p> <p>Local control over services</p> <p>Services can be closely tailored to local needs</p> <p>Service providers known and trusted by community members</p> <p>Income from services stays in community</p> <p>No costly camp or outside staff</p>
<b>Disadvantages</b>	<p>Difficult to interact with pastoralists and build trust</p> <p>Pastoralist people feel threatened or intimidated</p> <p>Pastoralists (especially women and girls) unable or unwilling to come to town to get services</p> <p>Pastoralists move frequently, disrupting the continuity of service</p>	<p>Difficult working conditions for staff</p> <p>Moving camps involves a lot of work</p> <p>Danger of personality clashes among staff</p> <p>Difficult to keep camp supplied</p>	<p>Requires training and refresher courses for service providers</p> <p>High dropout rate</p> <p>Service providers may feel unable to charge for services; clients may be unwilling to pay</p> <p>Quality of service low; limited range of services available (e.g., diagnosis and treatment of simple diseases)</p> <p>Backup of community providers necessary</p> <p>Difficult to keep providers supplied</p>
<b>When appropriate</b>	<p>Education (schools above grade 4)</p> <p>Secondary health services</p> <p>Base for supply of inputs (drugs, feed, food, etc.)</p>	<p>Veterinary services</p> <p>Special-purpose medical treatment (e.g., teeth, eyes)</p> <p>Specialist extension services</p> <p>Livestock destocking during drought</p>	<p>Literacy training</p> <p>Basic education (below grade 4)</p> <p>Basic human health services</p> <p>Basic animal health services</p> <p>Basic extension services</p>



support their families. In the long term, educated women also have smaller families and invest more in each child, reducing population pressure and contributing to development.

But pastoralist girls have very little opportunity to get an education. Traditional culture and religion discourage schooling for girls. From an early age, girls are expected to help their mothers with household duties - cooking, cleaning, caring for young animals, and so on. Many get married while still young. Families which are short of money prefer to send their sons to school. Some pastoralist areas have boarding schools, located in the towns, but mothers need their daughters' help on a daily basis, so resist sending them to school for weeks at a time. And parents fear for their daughters' safety, especially in areas where abduction and forcible marriage are common.

Pastoralist Concern Association of Ethiopia (Pcae) supports a girls' school that may be a model for others. The school, in Dolla district, in the Liban Zone of the Somali Region, serves girls from relatively settled agropastoralist families.

The school differs from normal government schools in several important respects.

- **Location** The school is located in the village rather than the nearby town of Dolla Ado. It uses houses donated by the community, the Women's Affairs Office and Pcae itself as classrooms. The girls live at home and have to walk only a short distance to the school each day.
- **Curriculum** The curriculum includes subjects such as Somali language and health that normal schools do not teach. Subjects are selected for their relevance to the girls' situation. For example, maths lessons teach how to manage a business (many of the girls earn money as petty traders), while health lessons discuss female genital mutilation, birthing, and child nutrition. Instruction is in Somali rather than English.
- **Timetable and calendar** The teaching timetable is flexible to cater to the pupils' special needs. Teaching hours are generally from 8:00 to 10:30 (shorter than a regular school) so the girls can go home to help their mothers, or can





run their businesses and earn money. The calendar takes into account religious holidays (such as the fasting month of Ramadan) and the dry months of December to February, when many pupils will be away at remote grazing sites.

- **Pupil orientation** The school management committee actively tries to solve girls' problems. For example, if a girl is repeatedly absent, a committee member will visit the family to find out why, and will try to help. Girls who attend regularly and who perform well are awarded prizes (such as tea flasks and cups) that they can use in their petty businesses.

The school currently has about 200 girls enrolled, plus some 60 women who attend special classes for adults. Some 90 girls have completed the 3-year cycle and of these, 70 have joined a grade 4 or 5 of a regular school. Dropout rates from the regular school are high – the girls still have their other duties, and as they get older, many leave to get married. Nevertheless, 40 of the 70 girls who went on to the regular school are still enrolled.

Perhaps more important than this, the school is changing attitudes towards girls' education in the area. By making it possible for girls to become educated while still contributing to their families, it is making the idea of girls' education more acceptable in this traditional society.

## Mobile outreach camps

Since 1998, FARM Africa has operated 'mobile outreach camps' to serve pastoralists in the Afar region. The three camps serve 16 *kebeles* in Gewane and Amibara *woredas* in Zone 3, and in Telalak and Dewe *woredas* in Zone 5. The camps provide a range of livestock- and income-related services. These include:

- Training and support for community-based animal health workers
- Marketing promotion
- Support for small-scale irrigation
- Support for destocking during drought, and restocking afterwards
- Emergency livestock feeding and animal health services.

The camps move from place to place within the area they serve. They stay at one site for 10 weeks – long enough to set activities in motion, but not so long as to create dependency. One site serves the pastoralist communities in two *kebeles*. After 10 weeks, everything is moved to a new site to serve two more *kebeles*. Camp staff continue to visit the areas they have left to provide backup support and to monitor activities. The camp will return to the same area the following year.

The camp serves as a good entry point to pastoralist communities. The mobile lifestyle is similar to the pastoralists' own, so they find it easy to accept. The location in the field and an open-door policy make communication easier than do the closed doors and fixed opening hours of town-based offices. Discussions



can be relaxed and not constrained by time. Meetings, visits and field work can be adjusted so they are convenient for the pastoralists.

## What's in a camp?

Each camp consists of local huts (*tukuls*) made of flexible sticks covered with local grass mats. During the wet season the huts are covered with plastic sheets. Inside are folding beds, mattresses, sleeping bags and mosquito nets. The camp also has a latrine and a shower tent, as well as a kitchen. A shade covers an area used for training.

Drugs equipment and food are kept in the tents. The camp vehicle is used to fetch water from the nearest well or water source, to visit nearby pastoralist settlements, and to move the staff and equipment when it is time to move camp. The staff communicate with FARM Africa headquarters by VHF radio.

The core staff of three usually consists of a qualified veterinarian, a community development worker and a women's development worker (both of whom are diploma holders). Support staff include a cook, a driver, and one or more locally recruited guards.

The staff and local pastoralists choose where to site the camp. It must be close to the targeted community, and there must be enough shade and reasonable access to water.

The camp staff provide the following types of services.

- **Training and support for community-based animal health workers** These are members of the pastoralist community, selected jointly by local leaders and the camp staff. They live, work and move with their own communities. They are given kits of simple veterinary equipment and drugs. They advise fellow livestock holders about health problems. They deworm animals, spray against ticks and other parasites, vaccinate against infectious diseases, and



treat other common livestock health problems. They charge other community members for their services so they can replenish their stock of drugs.

- **Marketing promotion** The camp staff help organize groups of pastoralists to market their animals and to start petty trading. FARM Africa provides a grant to each group, which members can use to start a savings and credit club. FARM Africa also provides training and assistance in finding markets for livestock and for products such as meat and milk.
- **Small-scale irrigation** Where irrigation is possible, pastoralists use it to grow small plots of crops. The camp team provides training on crop production, irrigation water management, weeding, harvesting and storage. It also provides inputs such as seeds, tools, oxen and pumps on a cost-recovery or cost-sharing basis. Beneficiaries must repay money to the group rather than to FARM Africa, so adding to the capital of the savings and credit club.
- **Restocking** After a drought, many people may be left destitute: their animals may have died, or they may have been forced to sell them to buy food. The camp team works with local religious leaders to identify widows – the weakest members of society. The team provides these women with four goats each, helps organize them into groups, and trains them how to keep goats and control diseases. When the women have recovered economically, each one is expected to pass on a gift of four weaned kids to destitute women in another group.
- **Destocking** During a drought, livestock prices fall, making it difficult for pastoralists to buy feed and water for their animals or food for themselves. FARM Africa buys animals at a fixed price, distributes some of the meat to community members, and dries the rest so it can be stored. All the slaughtering is done in the cool of the early morning. This is possible only in a camp sited near the pastoralists' own settlement.
- **Emergency livestock feeding and animal health services** During a drought, the camp team and facilitators in each community identify those people who are in most need of help. The team buys hay and concentrates and distributes it to their animals. Droughts also trigger livestock disease problems. The team vaccinates animals, treats their animals against parasites, and provides multivitamins to help them survive.

## Camp impacts

The FARM Africa camps are popular among pastoralists. The services are closer, more convenient and easier to use than their equivalents in town. The health services and emergency feeding have reduced deaths of livestock. The camps have helped pastoralists find new ways to grow food and earn money, so they are now better able to survive drought.

The camps also help to bring government staff and communities together. The government has used the camps as a base for mass vaccination campaigns, community discussions and efforts to resolve conflicts. A major World Bank-funded



pastoralist development project aims to use the mobile camp approach in its work.

## **Teachers who move with the herds**

Literacy is basic to development. Illiterate people are cut off from the outside world. They find it almost impossible to learn and apply new ideas, and are forced to rely on tradition to guide them in all aspects of their lives. Illiterate people are far more likely to suffer from food insecurity than people who can read and write.

Illiteracy is endemic among pastoralists. Because they live in remote areas and are constantly on the move, they have little opportunity to send their children to school. Traditional culture also does not promote modern education, especially for girls.

Only 2% of Afar are literate. This severely restricts their ability to learn how to solve their problems, and puts them at a severe disadvantage compared to other groups.

The Afar Pastoralist Development Association (APDA) trains pastoralists to teach literacy and basic health to other people in their community. The community chooses who is to be trained as a teacher or extension worker. If this person is illiterate, APDA first teaches him or her how to read and write before training



them in other skills. Once trained, the new teachers and extension workers return to serve their community. They live and work in the community, and move with them when they seek new grazing areas. They carry everything with them on a camel or in a backpack.

APDA works with and through Afar culture. Koranic teachers and healers have traditionally moved with the people they serve. APDA has adapted this approach, using an agreed curriculum and training manuals. The project is governed by clan law and is controlled by local leaders. They strongly support the teachers. Almost all of the people in one group can now read and write because the newly literate clan leader insisted that everyone, young and old, attend classes.

## Literacy

Since 1995, APDA has trained 127 teachers, who have in turn taught around 37,000 Afar how to read and write their own language. Nearly one-third of the learners are women and girls. Children who have learned literacy, basic English and Amharic under a tree are spontaneously enrolling in grades 3 and 4 in government schools in local towns. Newly literate people frequently send letters to each other, and previously isolated people are interacting with the government as never before.

Very few books are written in the Afar language, so APDA's Afar Language Development Center writes and publishes materials to form a literary base for the society. APDA also produces and shows videos and broadcasts radio programmes in the Afar language.

## Health

APDA has also trained 134 health workers using a 6-month course certified by the Bureau of Health. Fifty-nine pastoralist women extension workers teach and motivate women on hygiene, nutrition, safe pregnancy and delivery, and the harmful effects of various traditional practices. Another 370 traditional birth attendants are networked to the health workers and women extension workers. Each has a delivery set for each delivery, and provide prenatal checking of pregnant women, and refer women at risk to clinics. The impact of the health programme can be seen by a remarkable drop in chronic illnesses. People are beginning to use soap and mosquito nets, and to eat iron-rich grains to combat anaemia - a common cause of poor health. There are now few desperately ill people carried to the roadway for help.

APDA also trains paraveterinarians to provide basic animal health care services in their communities.



## Cost-effective

The APDA programme is very cost-effective. More than one-quarter of the estimated 1 million Afar pastoralists have so far benefited from it.

The APDA network provides an effective early warning of trouble brewing - be it epidemics of human or animal diseases, drought, or conflict. The workers alert the government, which can then respond in an appropriate way.

APDA is now trying to expand its work to other parts of the region, leaving the government to manage established services.

A problem is that government standards insist that health workers and teachers have formal education. But few Afar have such qualifications, and to be effective, the health workers and teachers must come from, and travel with, their communities. Few outsiders are willing to do this, and the community

### Suggestions for providing services

- Promote a variety of approaches to providing services. Adapt the approach to local situations, rather than be confined by rigid, centrally determined bureaucratic rules.
- Redesign school curricula and lesson schedules to suit pastoralist needs.
- Adapt the services provided by extension agents.
- Adjust the training and qualifications required for teachers and animal health workers.
- Work with NGOs and community organizations to develop appropriate ways of providing services.

would not be accept them anyway. Paradoxically, APDA workers lack formal qualifications, but are far more effective because they are members of the community, understand its problems, and can help people find acceptable solutions.



**10**

**Conflicts**

**C**ONFLICTS OCCUR in all societies, but they take on a particular significance in pastoralist areas because resources are scarce, livelihoods are precarious, and clan members support one another strongly.

Armed conflicts seem to be becoming more frequent and more serious. With the spread of automatic weapons, more people are killed. Different clans are often involved, giving rise to long-standing feuds that take on a life of their own.

Disputes do not always cause bloodshed. Many disputes are settled amicably by clan elders, through traditional institutions, or the modern justice system. Even though the traditional mechanisms generally work well, outsiders (police, government courts, external mediators) have often ignored them.

This chapter summarizes the effects of conflicts and outlines their causes, then offers some ways of managing conflicts using traditional and modern approaches.

## Effects of conflicts

Conflict alone is damaging. But in pastoralist areas it often is intertwined with other problems: environmental degradation, water and pasture scarcity, increasing human and livestock population, expansion of the cultivated area, and conversion to mining or nature reserves, and appropriation by outsiders. This places an enormous strain on pastoralists and their livelihoods.

Recovering from the impact of conflicts takes a long time, not only for the people directly involved, but also for support services and development activities in the area.

**Loss of lives** Young men are the main perpetrators of conflicts, and they are more likely than others to be injured or killed. Their deaths deprive their families of their potentially most productive members. Increasing numbers of women, older people and children are also killed or injured.

Many more people may die as a result of food shortages caused by the conflict, rather than from violence itself.

**Displacement of people** Conflicts force families to flee their homes to safer areas – often to refugee camps or towns. There they have no source of livelihood and are cut off from their traditional support mechanisms.

**Loss of food** Raiders may steal animals, and loot or burn grain stores. Their owners flee, abandoning their animals and leaving seeds unplanted and crops in the ground.

**Destruction of capital** Houses and property may be destroyed, animals killed, and infrastructure damaged or neglected. Unused farmland may revert to bush.



**Loss of livelihoods** A loss of livestock or crops means a loss of livelihoods. A man who has lost all his animals has few choices: become destitute and move to the town, rely on clan members to give or loan animals, or raid someone else's stock. A woman has fewer options still.

Even if a herd is intact, conflict may close off vital pasture or water sources. Large areas of pastureland may remain unused because of disputes over land ownership, or because people are afraid to go out in small groups to graze their animals. Farmers who are driven off their land may lose a whole season's crop if they cannot plant at the right time.

**Effects on women** Fewer women than men are killed as a direct result of violence, but they may suffer more indirectly because of food shortages and disruptions that result from conflict. Women are often the victims of kidnapping or rape.

**Spread of diseases** The large number of displaced people living in insanitary conditions in towns or refugee camps encourages the spread of disease. The lack of health services allows diseases such as malaria (in humans) and trypanosomiasis, anthrax and other parasitic and infectious diseases (in animals) to spread.

**Loss of services and development opportunities** Conflicts disrupt all types of services: education, human and livestock health, markets, transport and administration. Insecurity makes outsiders and local people alike unwilling to invest in the area, halting or reversing development. The government diverts resources away from services and infrastructure, into security. The loss of 'social capital' makes people less willing to trust one another.

Conflicts exacerbate food insecurity further because they make it difficult and costly to provide assistance to needy people. The problems of guarding food warehouses, transport and staff raise the costs of providing relief.



## Causes of conflicts

Why do conflicts occur? The many causes include politics, disputes over land ownership, access to resources, ownership of animals, service delivery, and women and marriage.

**Politics** Many of the conflicts that afflict Ethiopia emanate from pastoralist areas and have political roots. Different groups jostle for power at the national and regional levels, and peaceful opposition to the government can lead to armed conflict. Local grievances can also become politicized and degenerate into violence.

**Land ownership** Land claims are an important source of disputes between agropastoralists and pastoralists. Rangelands that used to be accessible to both pastoralists and agropastoralists are being settled. Illegal land grabbers take control of large areas. Farmers fence land to keep pastoralists and their animals off.

Disputed areas are often in favoured sites (along rivers, close to water sources), are located across pastoralists' migration routes, or lie in traditional dry season grazing reserves.

**Access to resources** If two groups have no other disputes, they can use each other's territory in search for pasture and water. But frequent droughts and degraded rangelands increase competition for grazing and water. The enforcement of internal and international boundaries makes it difficult for pastoralists to use resources that were traditionally open to them.

**Animals** Animal theft is a source of many disputes. Armed groups may raid each others' herds in order to replenish their own. Many disputes involve camels, the most important type of livestock, which are used to pay bride price and blood compensation.

**Services** Clans may disagree if they think that one clan is receiving better services than another. They may feel that the service provider is biased in recruiting workers or in distributing resources. There are conflicts about which group should get food aid and where development activities should take place.

**Women and marriage** Young men may raid neighbours animals in order to pay the bride-price. Girls in pastoralist areas are often abducted and forced to marry one of their kidnappers. The woman's family may accept the forced marriage as a *fait accompli* and negotiate for an acceptable dowry. Or they may object to the crime. Rape, a breakdown in negotiations over a dowry, or failed payments of dowry may also kindle conflict.

**Insults** against a member of another clan or tribe also lead to fights.

Once started, conflicts can be hard to stop. Unscrupulous individuals may exploit them for political gain. Women praise young men for their bravery and accuse non-fighters of cowardice. Tit-for-tat exchanges between opposing groups can lead to running feuds and many deaths.

## Traditional conflict resolution

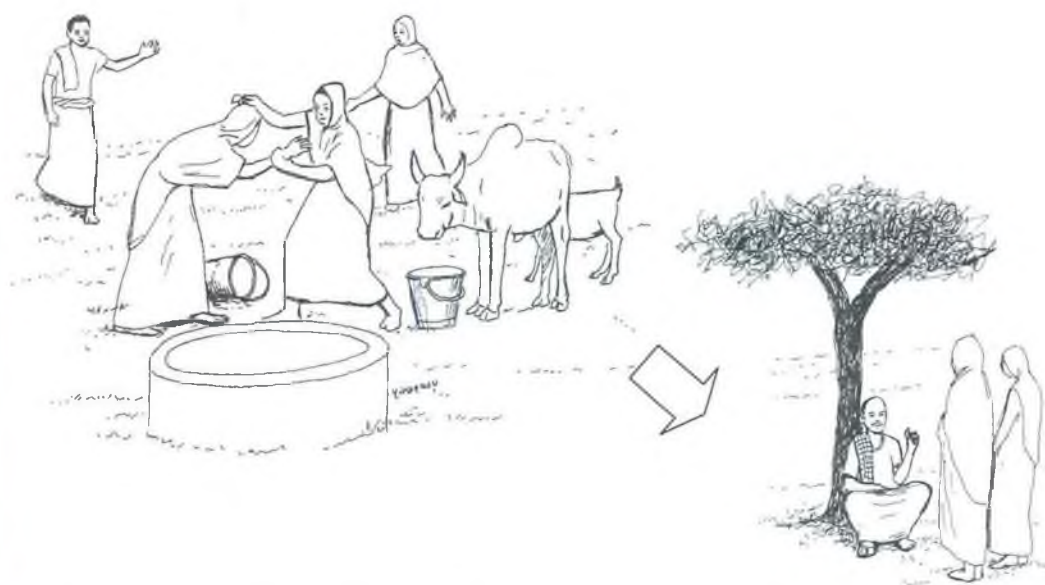
Most conflicts are settled by traditional authorities: respected community leaders, religious leaders, or elders of the opposed parties. Either party may refer the dispute to these authorities, or the leaders may themselves choose to intervene. Women carrying their *siiqee* sticks as symbols of womanhood may also intervene in a dispute and refer it to the elders (see page 95).

The opposing parties may be called to present their cases before a traditional court of respected elders. The parties may have to swear on the Quran – for example, that they do not know who is guilty of a murder. Indigenous lawyers – experts in the traditional rules – are present during the discussion. The court may force the guilty party to pay compensation for killing or for other offences.

Fines and compensation are paid in the form of animals – under Sharia law, 100 camels for a man killed, 50 for a woman. Rules govern the age and type of animals paid: for example, the first 12 must be milking camels that have had calves, and are given to the family of the person killed. Rules also stipulate the type of the other animals, and who receives them.

Relatives and other clan members group together to help pay the compensation. This practice gives the whole clan an interest in preventing violence, because all clan members must pay help pay the fine if one of their relatives is found guilty.

After a dispute has been solved and the fine paid, the clan of the guilty party may show goodwill by giving a woman in marriage to a member of the injured clan. The blood tie this creates helps to maintain peace between the two clans.



Traditional ways of solving conflicts are often the best



## External intervention

Outsiders – local authorities, formal courts, the police, army, or NGOs – may intervene to resolve conflicts. Unfortunately, the government system often ignores or even undermines the traditional court system, especially if people have been killed. This may aggravate the conflict rather than resolving it.

## Gereb courts in northeastern Ethiopia

There are inter-community conflicts between pastoralists in northeastern Afar and neighbouring Tigray communities. Such conflicts are usually caused by competition over resources, such as grazing land, farm land, watering points and salt licks. Raids and counter raids fuel the conflict.

The *gereb* court is an institution established by elders of both sides to try and solve the dispute. The *gereb* is effective because it is based on principles shared by both the Afar and the Tigray communities. These include fair treatment of both sides, prioritizing offences, notions of justice, etc.

Disputants from both sides generally accept the decisions made by the *gereb*. In recent years, local government structures have facilitated the *gereb*. For example, as a conflict escalates, the government will seek to restore order and create an environment in which *gereb* proceedings can start. During the proceedings themselves, the state provides logistical support to the elders, or '*abo gereb*'. After the *gereb* has done its arbitration work, the state enforces its resolutions.

The *gereb* has various drawbacks: it is not gender-sensitive; youths (who cause many of the conflicts) are not adequately represented; and pre-emptive measures are not taken before a dispute turns to violence.

## A successful external intervention in South Omo

The Chelbi plain, a grazing area between Boorana and South Omo, was underused for 10 years because of a conflict among the Boorana, Hamar and Arbore. Each clan claimed grazing rights, and if they met on the land, fighting broke out. The conflict made the pasture inaccessible to all.

To solve the problem, the Ethiopian Pastoralist Research and Development Association (EPARDA) convened a conference for all stakeholders in April 2002. EPARDA invited 30 people from each group (10 women, 10 young men and 10 elders) to the conference, which was held in Konso, a neutral place. At the conference, the stakeholders passed a resolution to jointly patrol the disputed area and catch those who violated the agreement by harassing members of other clans. The participants requested that subsequent meetings be held in each of



the clans' areas. Such meetings were held in Boorana, then Hamar and finally Arbore, all within 6 months of the initial meeting. This intervention has allowed all three groups of pastoralists to use the grazing resources.

## The danger of ignoring traditional mechanisms

Two clans that live near the Wabe Shebelle River in Somali Region both claimed a piece of land. The matter was referred to the tribal leader, who selected a committee of clan elders to resolve the dispute. This committee referred the case to the Sharia law. But then the government stepped in and said the case should go to the courts.

The courts told both clans to stop farming until a solution had been found. But Clan A continued to farm. Feeling that some administrators were biased towards Clan A, Clan B attacked their rivals.

The conflict was too large for the *woreda* police to handle, so the federal and regional governments sent in the army. The troops arrested the fighters and confiscated their guns.

Clan B killed 10 men and 1 woman; they in turn lost 6 men. According to the traditional rules, they had to pay compensation for the difference: four men and one woman. Clan B paid the required number of camels immediately, ending the dispute. But the ownership of the farmland is still not resolved: the case is still pending in the courts.

The government's insistence on referring the conflict to the formal courts probably did more harm than good. The perceived bias of the officials exacerbated the problem and led to many deaths. And the case is still not resolved. A traditional court might well have produced a better, quicker result.

## An unresolved conflict

The Afar live in the Afar Region and Djibouti, while the Issa live in Djibouti, part of Somali Region and one zone of Afar Region. Erratic rainfall and periodic droughts are the major cause of the conflicts between the two groups. Efforts to end these conflicts through negotiation and through military intervention have failed.

The government has sponsored seminars before the negotiations. Participants were encouraged to discuss the factors that led to the disputes, and to find ways to resolve their differences without taking to arms.

The government formed a joint peace committee to oversee the peace effort. The committee had to resolve cases of murder, livestock theft, road robbery and land

ownership disputes. Meanwhile, the government deployed troops to enforce peace. Despite the efforts of the peace committee and the presence of troops, the conflict was not resolved. It has evolved into border demarcation issues and competing claims to ownership of territory.

Various problems have dogged peace efforts. One side did not recognize the joint peace committee, while the other failed to comply with its decisions. The various communities were not equally represented on the committee. Delegates to the committee did not develop trust for each other. They avoided discussing the root causes of the dispute (land and resources). The federal government structure, which divides the country into ethnically based regional states, helped fuel the dispute, and the easy availability of firearms at the border helped sustain it.

### **Suggestions for managing conflicts**

- Use an early warning mechanism to monitor the situation and identify potential conflicts so they can be resolved before they become serious. This monitoring should be done in a participatory manner.
- Improve the ability of both formal and traditional authorities to resolve conflicts. Train outsiders on how to use traditional conflict resolution, and traditional leaders on modern conflict management techniques. Incorporate traditional conflict management in formal courts and government procedures.
- Involve all stakeholders in peace conferences. Rather than dictating procedures and solutions, allow the stakeholders to discuss the issues among themselves and make the decisions.
- Involve women in conflict resolution activities.
- Investigate the root causes of a conflict in order to identify possible solutions.
- Avoid conflicts by removing their root causes. Provide adequate social services (water, markets, schools, health), increase land tenure security, enhance cross-border trade, diversify the income sources of local people, share power within local government, and curb the flow of arms.
- Promote peace among various groups. Promote dialogue among traditional foes. Facilitate cross-border networking among pastoralists and government authorities.
- Assist the victims of conflict to avoid further suffering, hunger and disease.

**11**

**Policies and  
advocacy**



DEVELOPMENT INTERVENTIONS depend on appropriate policies of national governments, local administrations, donors, NGOs and development agencies. Interventions can be successful only if the policy environment is right. Efforts to build market infrastructure, for example, will succeed only if policies promote livestock trade. Training of community animal health workers must be accompanied by changes in the law to allow them to treat animals. Educational norms (such as teachers' qualifications) must be applied in a flexible manner to cater for the special situation in remote, mobile communities.

Policies tend to disadvantage pastoralist areas in various ways.

- They are often designed with the situation in highlands in mind - where the majority of Ethiopia's people live. They ignore the very different needs to lowland, dry, pastoralist areas.
- They assume a sedentary way of life - the norm in the highlands, but the exception in pastoralist areas. They see sedentarization as an ideal, and encourage people to adopt it.
- They are often based on inadequate understanding of the political, economic, social and technical context of pastoralism. For example, they may be based on an outdated notion that pastoralists overexploit their environment and cause overgrazing and land degradation. In fact, pastoralism is almost the only viable method of using dryland resources. Pastoralist practices such as herd maximization are sustainable and perfectly rational given the uncertain climate and the cyclical nature of drought.
- Pastoralists have little power and are poorly represented in national decision-making bodies.
- Infrastructure and services in pastoralist areas are poor, giving pastoralists little opportunity to improve their livelihoods.
- Pastoralist areas are prone to conflict, making them difficult areas for government to work in, and unattractive for investment by the government, NGOs or the private sector.
- There is a lack of national-level institutions devoted to pastoralist issues.
- Educational curricula neglect pastoralism, meaning that few in coming generations understand pastoralist issues.

Development interventions in pastoralist areas have also suffered from institutional problems. Some efforts duplicate each other, while some agencies retain a monopoly of interventions in their sector - leading to inflexibility and a lack of innovation. Administration is complex, with a large number of institutions at various levels involved in approving, funding and implementing a single project. This leads to slow decision making, blurred accountability and wastage.

The policy outlook may be improving. The federal government increasingly recognizes the importance of Ethiopia's pastoralist areas. The government and in-

## Organizations involved in pastoralist areas

### Federal ministries

*Determine policies and overall strategies, coordinate among regions*

- Ministry of Agriculture, Pastoral Extension Team
- Ministry of Education
- Ministry of Federal Affairs, Pastoral Development Dept – *coordinates pastoralist development in Ethiopia, disburses funds to regions*
- Ministry of Finance and Economic Development
- Ministry of Health
- Ministry of Industry, Trade and Tourism – *plans agro-based industries, etc.*
- Ministry of Infrastructure
- Ministry of Revenues
- Ministry of Rural Development
- Ministry of Water Resources – *plans and builds water collection and storage facilities*

### National-level agencies

- Environmental Protection Authority
- Ethiopian Parliament, Pastoralist Standing Committee
- Ethiopian Investment Authority
- Ethiopian Privatization Agency
- Livestock Marketing Authority – *collects data on prices, etc.*
- Pastoral Development Commission
- Cooperative Promotion Bureau

### State and local governments

*Provide services such as extension, water resources, veterinary services, etc.*

- Zone administrations
- Woreda administrations
- Kebele administrations

### Donor agencies

- Multilateral donors
- Bilateral donors
- Foundations
- UN agencies

### Research organizations

- Ethiopian Agricultural Research Organization
- Oromiya Agricultural Research Institute
- International Livestock Research Institute

### Non-government

- Local non-government organizations
- International non-government organizations

### Private sector

- Input supply firms
- Livestock marketing
- Livestock health

### Traditional

- Traditional authorities
- Community groups

International organizations are devoting special attention to managing pastoralist range development. Various organizations directly oversee pastoralist development and natural resource management issues. These organizations are at both federal (e.g., the Ministry of Federal Affairs, the Pastoralist Permanent Standard Committee in the parliament) and regional levels. Moreover, higher learning institutions are recognizing the importance of pastoralist resources, and new ones are being established in these regions.

## Advocacy

Nevertheless, much still needs to be done. In order to change policies, it is first necessary to bring about other changes. For example, to change policies on natural resources, investment and land tenure (the first row in the table on the next page), it is necessary for policymakers first to understand the pastoralist way of life. Only then will they be able to revise policies accordingly. Pro-pastoralist advocacy efforts should aim to help key policymakers achieve this understanding.



**Examples of policy goals and changes needed to achieve them**

<b>Policy goal</b>	<b>Changes required to achieve goal</b>
Change policies on natural resources, investment and land tenure to be more supportive of pastoralists	Improve understanding by policymakers of pastoralist mode of life Revise law to recognize traditional land tenure systems and institutional systems
Increase the representation of pastoralists in government	Change representation of pastoralists at federal and regional levels Change educational approach in pastoralists areas at all levels Change delivery approach of basic social services to reflect the rights of pastoralists
Change policy of promoting sedentarization	Change National Vision, which underpins all agricultural policies Change assumption that some water development projects are promoting sustainable development for pastoralists Change government's attitudes towards land use by pastoralists
Improve relationships among pastoralist groups	Increase contacts and exchange among pastoralist groups Change the attitudes, cultural and other practices between different groups that damage relationships Change the preoccupation with negatives to a focus on positives

The table has some other examples of policy goals and the changes needed to achieve them.

The main audiences of networking and policy advocacy work include:

- Policymakers: parliamentarians, Cabinet members, regional councils, regional pastoralist coordination offices, Prime Minister's office, federal and regional Ministry of Agriculture offices
- Donors
- General public
- Mass media.

Advocacy methods include:

- Workshops, seminars
- Informal discussions, visits to members of parliament
- Newspaper columns (such as the Panos column on pastoralists in a national newspaper)
- Press releases, interviews
- Exhibits
- Strategy papers
- Field visits for decision makers.



Policy (Chapter)	Federal govt	State, local govt	Dev agencies, donors, NGOs
<b>Water (2)</b>			
Plan for drought contingencies		*	
Use traditional coping mechanisms			*
<b>Livestock (3)</b>			
Ensure freedom of movement for herds and people	*	*	
Develop appropriate technologies			*
Deter expansion of cultivation and permanent settlement in dry season grazing areas		*	
Provide for health needs of livestock; control major livestock diseases		*	
Orient development and extension services to needs of pastoralist communities		*	
<b>Resource management (4)</b>			
Respect traditional pastoralist production systems	*	*	
Assure traditional land tenure for pastoralists	*	*	
Promote traditional pastoralist resource management system			*
<b>Crops (5)</b>			
Avoid inappropriate water development in wet season grazing lands		*	
Orient development and extension services to needs of pastoralists communities		*	
<b>Income diversification (7)</b>			
Invest in transport, markets and livelihood diversification	*	*	
Ensure freedom of trade			
<b>Institutions (8)</b>			
Develop appropriate pastoralist institutions		*	*
Design development and relief programmes with participation of pastoralist communities		*	*
Encourage indigenous institutions to promote pastoralists' participation in national development processes		*	
Use traditional/local leadership structures			*
Promote women's participation in decision making		*	*
Promote equality of women	*	*	*
Alleviate women's workload through appropriate technology			*
<b>Services (9)</b>			
Democratize and decentralize pastoralist service system	*		
Address health needs of people		*	*
Facilitate awareness of and access to education; develop appropriate curricula	*	*	
<b>Conflict (10)</b>			
Use traditional conflict management institutions		*	*
<b>Policy (11)</b>			
Develop an early warning management system that addresses the special characteristics of pastoralist areas	*		
Collaborate and share information with neighbouring countries, regional, and international organizations	*	*	
Establish pastoralist advocacy group in parliament	*	*	
Promote participation of NGOs in pastoralist development		*	
Promote representation of pastoralists in decision making	*	*	*
Establish appropriate pastoralist taxation system	*	*	
Establish pastoralist society commissions	*	*	

### Suggestions on policies

- Provide appropriate social services, such as water, education and health, that suit pastoralist lifestyles.
- Develop technological packages in light of the physical, social, and cultural environment typical of pastoralists.
- Work with, and fund, community projects that improve the food security situation in pastoralist areas.
- Design and implement community development interventions from the context of the prevailing physical, social and political realities.
- Respect pastoralists' indigenous knowledge and integrate it into interventions.
- Integrate technical interventions and social services in projects that are designed in a more participatory manner. Give beneficiaries equal status and power with donors and other stakeholders in identifying, implementing and monitoring projects.

The table on the previous page shows some further suggestions for policies, ordered according to the chapters in this book. The heavy dots show which organizations have primary responsibility for these policies.

Many of the suggestions in the other chapters also relate to, or rely on, appropriate policies in the relevant areas.

**12**

**Appendices**



## Further reading

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# Participants' profiles

This list contains profiles and contact information for the participants and staff who compiled this book.

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Abdirahman holds an MSc in agricultural entomology. For many years he was the senior protection expert in the Somali Region Bureau of Agriculture. In his work with SORPARI, he manages research projects and monitors adaptation trials in the region.

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Abdu holds a BSc in soil and water conservation from Mekelle University, a diploma in general agriculture from Jimma College of Agriculture, and certificates in sustainable agriculture and rural development from overseas institutions. He has a wide range of experience in rural development.

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Ahmed has an MSc in animal science, and studied camels for his MSc thesis. He initiated SORPARI, an institute which now has eight research programmes and implements adaptation trials in Gode and Jigjiga.



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Alemayehu has an MSc in pasture and range science from the Agriculture University of Sweden, Uppsala, and studied advanced post-research and development studies at the University of Western Australia. He has worked with the World Bank, African Development Bank, FAO, ILRI, SIDA, FINNIDA, DANIDA and other organizations. He has also served as lecturer at various Agriculture Universities (Alemaya Agriculture College, Faculty of Veterinary Medicine etc.). He is the author of seven books and over 50 papers. In addition to his work at Addis Ababa University, he provides consultancy services on pasture, range and livestock research and development.

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Alemu has a BSc in agricultural economics and worked as a planning expert and acting department head in different planning offices, including the Afar Region. In his last 10 years work in the Afar Region, he has written or coauthored 11 research papers.

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Ayele holds a magister degree in social anthropology from the University of Bergen, Norway. His work experience includes research, planning, monitoring and evaluation of integrated rural development projects among farming, agropastoralist and pastoralist communities for ILRI, FAO, IGAD, NORAD, NEI and NGOs. He has written numerous working papers and articles in international publications on sociological and socioeconomic aspects of livestock marketing, sustainable livestock and conflicts, particularly on pastoralist and agropastoralist production systems.

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This is a book about food security in the harsh and fragile lowlands of eastern and southern Ethiopia. It describes how local people and development organizations ensure food security in such an environment. It documents the experiences of over 30 development organizations and projects in the Afar and Somali Regions, and the Boorana Zone of Oromiya Region. This book also offers a series of suggestions that government, donors and development organizations can consider when designing and implementing food security interventions in the region.

The book covers the following areas:

- Water
- Livestock
- Rangeland and resource management
- Crops
- Alternative foods
- Income diversification
- Institutions
- Services
- Conflicts
- Policies and advocacy

This book is not exhaustive, either geographically or in terms of topics. It is written with the hope that it is sufficiently broad to give ideas and lessons for developing food security interventions and strategies in pastoralist and dry areas of Ethiopia.

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