

CLIMATE ADAPTATION IN ETHIOPIA

# Living with drought

**In the climate change hotspot of Ethiopia, increasingly frequent droughts affect nomads more than anyone. They have no choice but to adapt their lifestyle. Some pastoralists have started growing crops, while others are keeping camels. Wageningen UR is working on climate adaptation in a land full of traditions.**

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**T**he village chief at Logrian in southern Ethiopia greets me with a large bowl of camel's milk. Welcome refreshment in this bone-dry region, where nomadic pastoralists of the Hamer ethnic group eke out a subsistence. Rivers have dried up, and there is not a blade of grass in sight. The young men have migrated in search of the last scraps of vegetation for their livestock. The elderly, women and children are left behind in the villages. Dust clouds billow in the air.

The chief tells me about the steps the people here have taken to try to cope better with the drought. Introducing Arabian camels, for example. Traditionally, the Hamer only keep cows and goats. When development organization Farm Africa brought them camels from the south-eastern region of Borena a few years ago, they responded warily. 'We had to get used to the idea', says the chief. 'When the first well was sunk at that time, we thought there was something satanic about it. There were similar feelings about the introduction of camels. Now we see them as a real solution. One camel produces as much milk as three cows. You are better off with camels than with children. They eat thorny plants rather than grass, they can go two weeks without water and they don't need to be herded – they come back to the village to be milked in the evening of their own accord.'

### **EROSION AND OVERPOPULATION**

The lives of these nomadic pastoralists depend on their livestock, making them extra vulnerable to the effects of climate change. Other factors making their lives increasingly difficult are erosion, overpopulation, and the takeover of fertile land by private investors and the government for the large-scale cultivation of jatropha, cotton and sugar cane. Land scarcity and drought are aggravating local conflicts. Any area where there is still a little grass growing is quickly invaded by hundreds of thousands of cattle from the neighbouring districts.

Traditionally, nomadic pastoralists have been able to cope with unpredictable factors such as drought. But now that it is increasingly frequent, it is beyond their resources. Many development organizations have therefore adopted approaches based on climate adaptation. One of the best-known of these is the Drought Cycle Management (DCM) programme of Dutch development organization Cordaid.

Wageningen UR is very active in Ethiopia too. One of its institutes, Alterra, runs an annual course on climate adaptation in agriculture for researchers and civil servants, in collaboration with the Horn of Africa Regional Environment Centre and Network (HoAREC/N). And in 2009 a partnership for research and knowledge transfer was formed between Wageningen UR, Ethiopian universities and the Ethiopian Institute for Agricultural Research (ELAR). The role of Wageningen UR is mainly to train researchers and government staff on topics related to horticulture, oil crops, seeds, natural resources and soil fertility.

### **LAND OF TRADITIONS**

By taking preventive action, Ethiopia hopes to be prepared for drought so that it claims fewer victims and less emergency aid is needed. Such measures are stimulated in numerous development projects and range from rainwater harvesting to the introduction of drought-resistant animals. The aim of the development organizations is to up-scale effective projects so they are no longer isolated successes. But in view of the great cultural differences between ethnic groups, introducing change and learning from each other's experience are not easy tasks: Ethiopia is a land of traditions. What is more, some changes, such as the introduction of animals from another region, carry an element of risk. Many of the first camels to be introduced, for instance, died of disease. Seated on a cowhide, the chief explains: 'We have now learned to keep a closer eye on the health of our animals, so



as to make them more resistant to drought.' The Hamer followed veterinary courses run by Farm Africa, to learn how to recognize and treat diseases. And now their camels are thriving. Nomads who did not dare take on these animals initially are now regretting it. A spokesperson for Farm Africa: 'Now that the experiment is a success, it is important to draw other communities into it as well.'

The Borena people from south-eastern Ethiopia have a long history of herding camels. But even they are taking some precautions against drought. One of these is to improve their traditional wells. Traditionally, they have hauled water >



In an effort to cope with drought, Ethiopian nomads are growing vegetables (left), keeping camels for their milk (above right) and renovating their singing wells (below right).



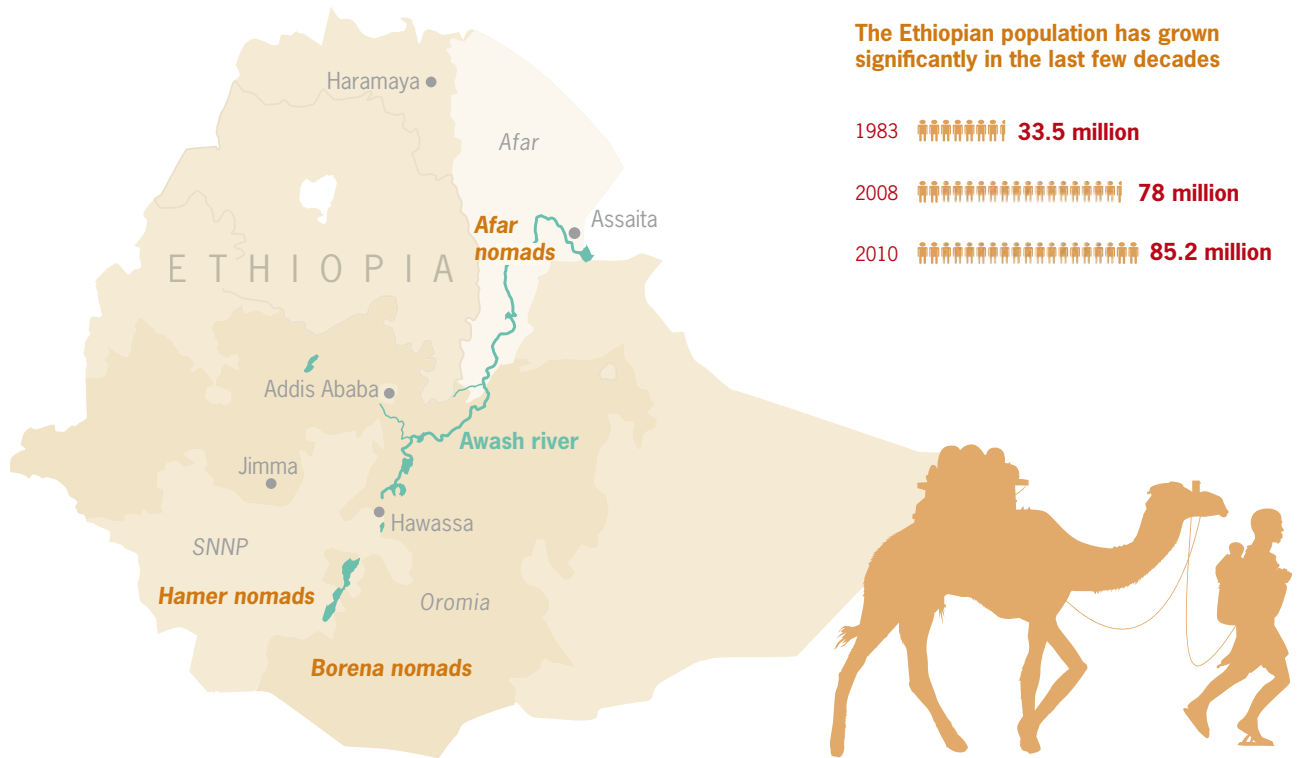
## CLIMATE CHANGE AND ADAPTATION

In February 2011, the annual course on climate adaptation in agriculture will be given for the third time, run jointly by Alterra and the Centre for Development Innovation (CDI), both part of Wageningen UR, together with the Horn of Africa Regional Environmental Centre and Network (HoA-REC/N) in Addis Ababa. This training programme for researchers and staff of government and non-government organizations from East African countries is supported with funding from the Dutch NUFFIC

Fellowship Programme. The HoA-REN is a network of knowledge organizations from six countries in the Horn of Africa in the fields of environmental conservation, sustainable development and capacity development, with a strong focus on climate change. Professor Araya Asfaw of the University of Addis Ababa is director of HoA-REC/N and regional coordinator of the climate adaptation course. 'Local engineers are often astonished when the implementation of their projects is a total failure', he asserts. 'Adjusting food

supply to climate change demands a multi-sectoral programme for community development. We have to move towards 'climate-smart' agriculture. The next step is to develop projects, especially among the nomads who are focusing more and more on agriculture. Scientists and development organizations should collaborate and exchange experiences. We want to monitor practices and then upscale the good projects. That kind of upscaling is the only way to adapt to climate change.'

## NOMADS IN ETHIOPIA



out of what are known as ‘singing wells’- very deep wells dug by their ancestors. In times of drought, people go down into the wells and pass buckets of water up ladders, singing as they work. Thousands of cows descend the slope to a midway platform, to drink water there. Their trampling hooves and heavy bodies have caused many wells to collapse and fall into disuse. Borena nomad Kerala takes me along to a restored well. With help from a development organization, the Borena have reduced the gradient of the slope and installed concrete drinking troughs on the platform. Cows can descend in two rows now. ‘We have built a tank for our drinking water’, says Kerala. He points out a deep trough in which rainwater is harvested. Once the dust has settled, the water drains into a tank which is surrounded by a thorny fence to keep cattle out and prevent the water getting dirty. Women used to walk 18 kilometres twice a day to the nearest

traditional well. Now they have drinking water just around the corner. Every household has its ration. ‘But someone who has just had a baby or who is sick gets more’, says a village elder.

### FROM PASTORALIST TO FARMER

I travel on to the north-east of Ethiopia. Huge dust clouds loom on the horizon: everywhere, Afar pastoralists are on the move with their herds. In the shade of a banana tree in a small oasis, Omar is carving a plough out of wood. Until recently, he eked out an uncertain livelihood as a nomadic pastoralist. Through drought, conflicts and

cattle thefts, he lost many goats, cows and camels. Thanks to an irrigation project funded by a development organization, he learned to irrigate fields and grow crops that were new to him. ‘My life has improved a lot; my family has enough to eat and we can sell our surplus. And we have shade. I have got rid of most of my cattle; I have only kept a few goats and a couple of camels, which I can use to plough my fields. I have swapped my gun – which I always used to carry around because of the conflicts over grazing rights – for a spade.’ Omar’s wife is happy with the switch from the nomadic life to farming too. ‘We used to follow our

‘If a cow dies, at least we still have the crops’

husbands and the cattle. We used to have to walk hours to fetch water and were always having to take down the hut and build it up again. Now we have learned to prepare vegetables, which were always taboo because we saw them as cattle fodder. Formerly, if a cow died, it was a disaster: we lived on milk. If an animal dies now, we still have the crops. As long as the river brings enough water, we don't have any problems.' Proudly, Omar and his wife give me a few maize cobs and a bottle of camel's milk for the road.

### TRADITIONAL LAWS

In 2003, development organization Support for Sustainable Development (SSD) set up camp among the Afar nomads. When the development workers proposed jointly installing irrigation canals for growing cattle fodder and vegetables, the nomads were suspicious. Pastoralism was part of their identity: they did not see much future in becoming part-time farmers. Field worker Tesfaye says: 'In view of the powerful position of the clan leaders, we started by talking to them. Because of the great losses they had suffered on account of the drought, they capitulated. Then the clan leaders convinced the villagers. The crucial thing was that we adopted their traditional rules and regulations as the starting point. So the irrigation schemes and their maintenance are based on their traditional legal system. Anyone who contravenes that is punished according to the Afar law', says Tesfaye. 'None of the nomads knew anything about agriculture. We dug the canals and built a dam together with them. We sowed fast-growing crops such as cabbage and maize and planted a garden for training and also as a seed nursery. That way farmers can always get hold of seeds.'

Now the Afar nomads have built huts near their fields and have become semi-sedentary. The young men still go off with the cattle, but the adult men and women stay behind to till the fields, growing cattle fod-

der, vegetables and fruit. The farmers aim at both good harvests and healthy herds. The irrigation works look good: and the riverine plants they have planted filter the sludge from the water. Bridges have been built over the canals so that the animals do not trample their banks, and multifunctional trees have been planted, such as *Moringa oleifera*, which fixes nitrates as well as producing oil and cattle fodder. The irrigation schemes are maintained by water committees.

### PEOPLE AND CATTLE DROWNED

But then, in September this year, large tracts of the area where the Afar live – between the villages of Assaita and Mile – were flooded.

I find Omar a few dozen kilometres away on the higher ground of the hills. He is making an enclosure for his cattle and his wife is weaving new sleeping mats. 'There are tens of thousands of refugees; about thirty people and 6,000 livestock animals have been drowned. The water came six metres higher than usual, our huts and fields disappeared, and almost every bridge in Afar land has been swept away.' The flood took everyone by surprise. 'If a lot of rainwater comes down, it is usually from the Awash River',

says a village elder. 'We were on the alert for that. But quite unexpectedly, it came from the other direction, from the Mile River. We have never had such a big flood before.'

An engineer from Addis Ababa explains: 'Something like this is caused by climate change. We are going to renovate the dam; we've got donors. The Afar are used to moving home temporarily: they will come back.' The cause of the flood is the extremely high rainfall, he thinks. But someone else mutters: 'It is not just climate change. The government's massive irrigation project for the sugar factory downstream is part of the problem too: the accumulated water overflowed at the dam.' A third says out loud: 'No one is allowed to talk about it. The government thought that it would be alright for eight or nine years, and did not imagine the dam would give way so fast. They are planning to move the local population.' The Afar do not give up easily: 'We would really prefer to carry on with farming; we can remember all too well that neither we nor our forebears got much out of our nomadic way of life. In a short time, horticulture has brought us many benefits. We hope that our irrigation system will soon be repaired.' ■

### WAGENINGEN UR AND ETHIOPIA

In June 2009, the Ethiopia-Wageningen UR collaboration partnership Collaboration on Science for Impact got off the ground. In this programme, Wageningen UR is working with Ethiopian partners on knowledge exchange and research in the area of agriculture and food security. Ethiopian participants are the Ethiopian Institute for Agricultural Research (EIAR) and the Universities of Addis Ababa, Jimma, Hawassa, Mekelle and Haramaya. From the Wageningen UR side, several parties are involved: Plant Research

International, the Centre for Development Innovation, agricultural economics institute LEI, Alterra and the Climate Change Group. They focus mainly on training researchers and government staff in projects on horticulture, oil crops, seed production, natural resources and soil fertility. Wageningen alumnus Eyasu Elias (PhD in soil fertility, 1997) has been the Wageningen UR liaison officer in Addis Ababa since December 2009, and coordinates the various projects carried out by this partnership.  
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