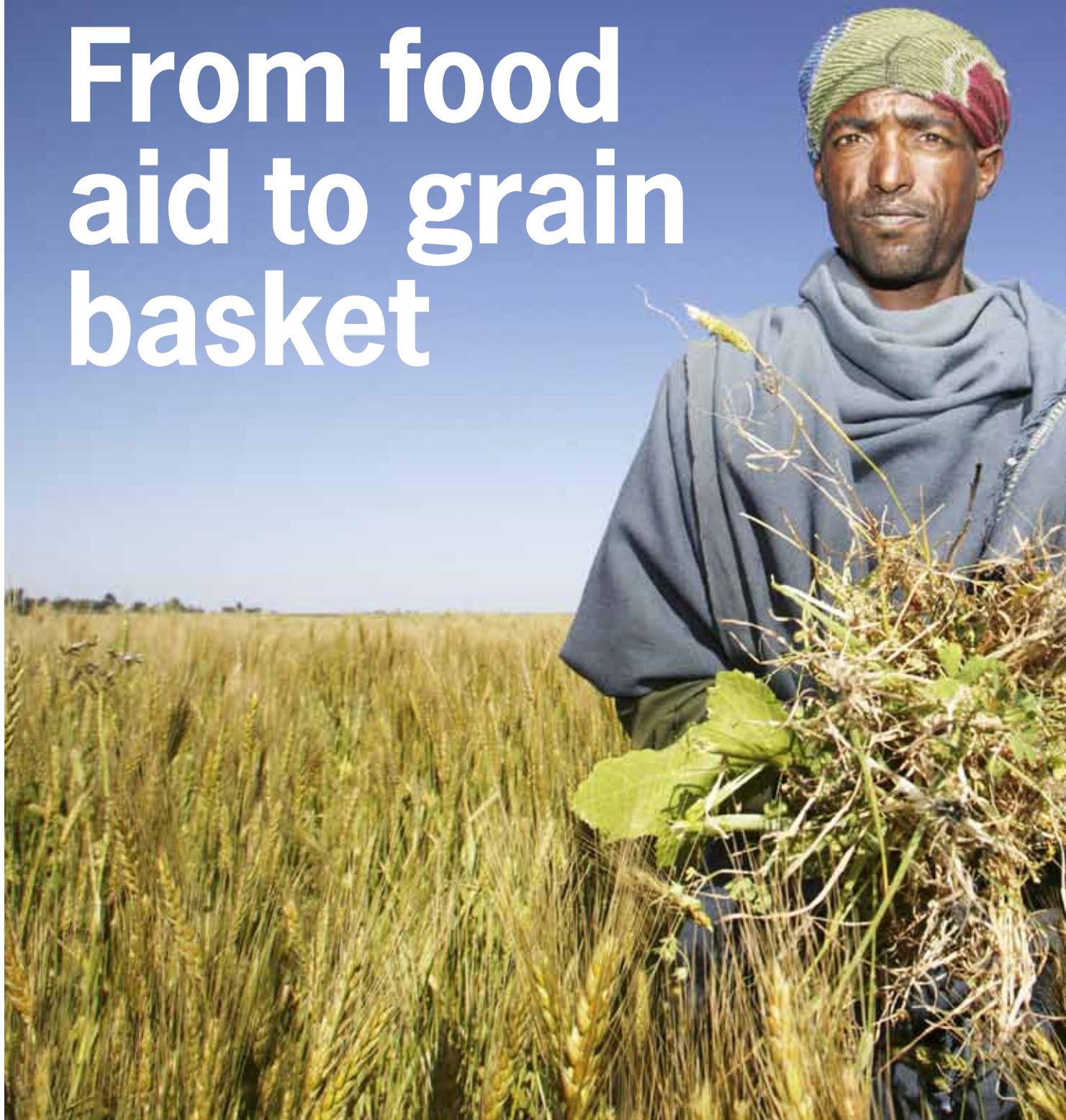


From food aid to grain basket



Ethiopia's image is of a country at the mercy of catastrophic droughts and food aid. But there is another side to Ethiopia. There are big opportunities for small-scale farmers in its fertile, well-watered highlands. The country has the potential to become a rich grain basket, say Wageningen experts. If the government loosens its grip. TEXT MARION DE BOO

PHOTOGRAPHY HOLLANDSE HOOGTE ILLUSTRATION SCHWANDT INFOGRAPHICS

The road north from the provincial capital Bahir Dar is quite passable in the dry season. The fertile Ethiopian highlands stretch into the distance on both sides. The land looks green, with plenty of trees and bushes, and small herds of cows and goats grazing here and there. About 35 kilometres down the road the Farmers Training Centre of the district of South Achefer comes in sight. Meanwhile the burning sun is high in the sky. Muluken Lulie has a meeting here today. 'The rainy season is coming; it is time to plant,' says Lulie.

Lulie tills three hectares of land together with his wife. They mainly grow maize for their family but they also grow barley, teff – an old grain variety – and potatoes for the market. 'During busy times we sometimes hire help when the children are at school, but we do most of the work ourselves. One of my sons will soon graduate as a doctor.'

Muluken Lulie is one of the 'model farmers' in the Ethiopian government's national agriculture programme. He learns new farming techniques at the Farmers Training centre and is then expected to share his newly won knowledge with ten neighbouring families. They in turn should reach out to ten other families so that a snowball effect is created and tens of thousands of farmers are eventually reached. Lulie's neighbours, Teshome Melese and Yeshialem Addis, were day labourers without land of their own. This year they were able to lease 2.5 hectares. They are looking to their neighbour for guidance on how to go about things, they explain in the shade of their mud hut, where chickens scratch around and a watchdog barks. Female farmer Yeshialem runs the household with four children but also helps as much as she can on the farm. 'Raking, weeding, harvesting; the ploughing is the only thing I leave to my husband.'

FERTILE AND WELL-WATERED

Ethiopia often seems to be synonymous with drought, hunger and food aid. 'And yet >

there is tremendous potential,' says tropical soils expert Arie van Kekem of Alterra Wageningen UR. A considerable proportion of this African country – an area the size of France and Spain combined – consists of fertile highlands with more than enough rain. 'With a bit more knowhow farmers here could increase their yields in no time,' says Van Kekem. 'Ethiopia has the potential to become a major agricultural export country. For the time being it is the small-scale farmers who produce most of the food. Improving their harvests is the basis for increasing rural prosperity so that children can go to school.'

Van Kekem is project leader of CASCAPE, a scientific five-year plan for increasing the agricultural yields, the trade in farm produce and the food security of small-scale farmers in Ethiopia. CASCAPE is a collaboration between six Ethiopian universities and Wageningen experts from Alterra and the Centre for Development Innovation. Six



ARIE VAN KEKEM,
expert on tropical soils at
Alterra Wageningen UR

**'With a bit more knowhow
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promising growth regions of the fertile Ethiopian highlands have been selected. These 'high potential' regions each have their own CASCAPE team with an interdisciplinary group of mainly young, well-educated Ethiopian experts. The project focuses on agriculture, livestock, natural resources, gender and nutrition-related issues. The Dutch department of Development Cooperation is funding CASCAPE to the tune of 12.5 million euros up to the end of 2015.

'I was shocked to discover that 50 percent of the young children in our research area in Amhara were malnourished,' says Van Kekem. 'The soil there is often very fertile, it gets almost twice as much rain in a year as the Netherlands and there is plenty of irrigation water. But the daily menu is too one-sided, especially for small children and pregnant women.'

Firew Tegegne Amogne, vice president of the University of Bahir Dar and assistant coordinator of the CASCAPE project, talks of a paradox. 'Amhara has the highest yields in Ethiopia, but it also has the most malnutrition. That is why it is important not just to look at food security but also at nutrition security. Fortunately our project team has now been expanded to include a nutrition expert.'

FROM AID TO TRADE

CASCAPE offers scientific support to the Ethiopian government's ambitious national agriculture programme, funded by the World Bank and many other donors. The government's aim for this Agricultural Growth Programme is to make the switch as fast as possible from food aid to trade and economic collaboration. The new Dutch development policy – Trade, not Aid – is a perfect fit. Both Dutch and Ethiopian policymakers point to the example of the Dutch flower growers who came to Ethiopia with the help of development

funding and have turned the country into a major flower exporter.

Within CASCAPE a lot of attention is paid to soil fertility and advice on fertilizers. Project leader Van Kekem points out the big discrepancies in soil fertility. 'There are deep red soils with a thick layer of rich topsoil, but there are also places with a lot of erosion where that fertile soil has disappeared and the ground is stony. There is a lack of good advice on fertilizer use and the traditional extension service functions poorly. Extension workers are not adequately trained and the knowledge which is generated in agricultural research and at universities does not get through to farmers enough.'

But CASCAPE workers do go into the field. They talk to farmers, address their problems, demonstrate new methods and offer advice on good seeds, combatting diseases and pests, and the right fertilizer. 'Then you see fantastic results within a short period of time,' says Van Kekem.

GOVERNMENT CONTROL

There is little scope in Ethiopia for private initiatives – in the artificial fertilizer sector for instance. The government controls the import and distribution of artificial fertilizer. Farmers often lack good seed and a well-functioning cycle of organic matter. 'In the end organic matter is much more important than artificial fertilizer for keeping the soil healthy,' says van Kekem.

'Farmers do not put enough organic matter back into the soil because they also need it for livestock feed, fuel and roofing. All that happens at the expense of soil fertility. We advise the farmers to put more animal manure, kitchen waste and other sources of organic matter on their land.'

'Our work really isn't rocket science,' says Christy van Beek of Alterra. 'The harvest can often be tripled immediately with simple interventions.' The supply of artificial fertilizer in Ethiopia is in government

‘The harvest can often be tripled immediately with simple interventions’

hands. There are only two kinds of fertilizer for sale, namely urea and diammonium phosphate (DAP). They are far from suitable for all soil types and crops, says Van Beek. ‘Farmers have to bend over backwards to pay for artificial fertilizer but on acid soils ammonium fertilizer can even have a counterproductive effect. What is more, the same standard advice is issued for all crops. We have started drawing up fertilizer advice tailored to each soil type and crop. That has proven to be a massive improvement,’ says Van Beek.

‘There is a huge biodiversity in the country,’ she continues. ‘You come across biophysical conditions such as differences in altitude and climatic zones, and you also get differences in access to things like markets and extension services. There is no standard formula for all farmers. But Ethiopia is

a country in which everything is extremely centralized. People prefer to decide and control everything from above, the same for every farmer, whereas what they really need is tailor-made solutions.’

INNOVATIVE THINKING

‘The starting point for the Agricultural Growth Programme in Ethiopia is to look for farmers who are doing exceptionally well so as to enable other farmers to copy those best practices,’ says Irene Koomen of the Centre for Development Innovation (CDI) in Wageningen. ‘Our centre has been called in to stimulate innovative thinking in the project. The technology is available – we all know that good seed and sufficient fertilizer lead to better harvests. Innovative thinking means that together with local farmers, extension workers and other

stakeholders, you look into what is required at a specific place to speed up progress.’

This thinking includes an examination of why some new ideas are taken up and others are not. For this it is important not to tar all farmers with the same brush.

Someone who has five hectares can afford to experiment a bit more than his neighbour with only a quarter of a hectare of land. Some farmers are dirt poor and illiterate, while others have been to school or may have managed to save some money as migrant workers. Some farms are run by women, often widows. They do not have their own oxen for ploughing – which is primarily men’s work.

HOUSEHOLD KITTY

Ethiopian women generally find it hard to make ends meet. They get to do their >



LESS THAN 5 HECTARES

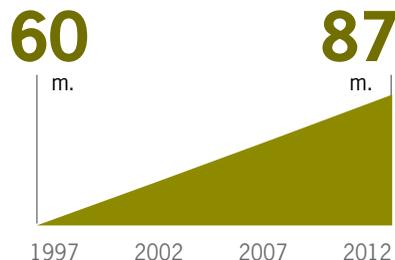
Ethiopia has tens of millions of small-scale farmers. After a communist coup all land was nationalized in 1991. Large landowners were driven off their land, which was divided among the population. Village elders usually decided who was allowed to farm where. Ninety percent of the farmers own less than 5 hectares of land, some no more than half a hectare. The population is still growing fast. One century ago the population was 10 million, now it is 90 million. The average farmer has about six children and if they become farmers too then land ownership becomes more and more fragmented. Only 13 percent of the population earn their keep from something other than farming.

Food production in Ethiopia

Location



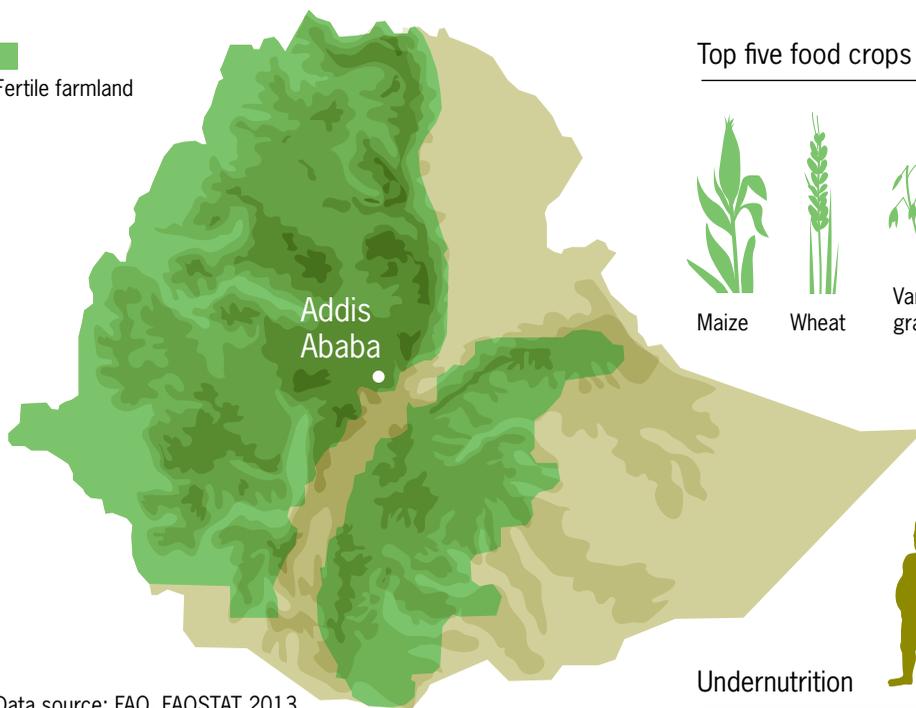
Population



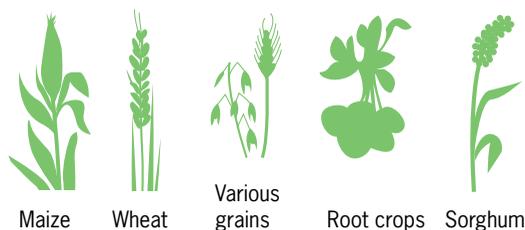
Population distribution



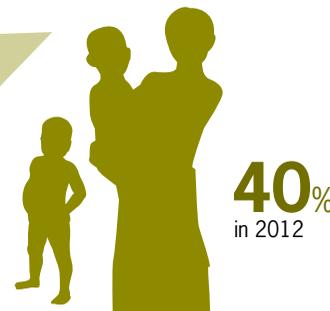
Fertile farmland



Top five food crops



Undernutrition



Data source: FAO, FAOSTAT 2013

share of the work but not of the decision-making. Traditionally, the man is in charge of the cash crops while the woman grows beans for the family on a leftover patch of land. If more emphasis comes to be laid on cash crops the possibility cannot be ruled out that women will be made to give up their land. 'And the question is whether the money earned at the market always goes into the household kitty,' says Koomen. 'In some districts the man eats separately and goes first. Women and children have

to see what is left over. We need to have a good look at whether the Agricultural Growth Programme really improves the nutritional situation at all. As a researcher you always have to be alert to the fact that interventions can work out counterproductively.' According to Koomen, extension workers like working with the progressive farmers, who are quick to pick up on new ideas. 'They visit them often and enthusiastically. They have much less contact with all the other farmers.' Farmers are also given the chance to visit a

network of training centres. But Koomen feels the approach is very top-down. 'Extension workers and research institutes pump all sorts of new ideas into the system from above, without having much affinity with their target group and without distinguishing between different kinds of farmers.' Meanwhile, they are running into various practical problems. Artificial fertilizer and seed, for instance, are often hard to come by in time for the start of the planting season. What is more, farmers have to borrow money for them, but mi-

‘There is no standard formula for all farmers’

crocredits from farmers’ organizations or regional banks are often not issued in time. ‘In Ethiopia fertilizer is distributed centrally and there are always delays,’ says Koomen. ‘The Agricultural Growth Programme should primarily look at what the farmers need and what the opportunities in a region are for commercializing production.’

LETTING FARMERS CHOOSE

The first step taken by CASCAPE in 2011 was to select six high potential regions as its working area, and to find out what the differences were between the model farmers and the others. The next step was a joint consultation process with stakeholders in each village to identify the local opportunities and problems.

Koomen: ‘The Wageningen input consists of coaching and developing local capacity. Ethiopia has excellent universities but they all tend to train their academics for education and academic research. For an academically trained Ethiopian researcher, it takes a whole new way of thinking to go about a varieties test not by measuring leaf lengths and cob sizes but by letting the farmers pick out the most suitable variety themselves. A farmer on drought-sensitive soil stands to gain more from a variety that ripens fast, before the drought starts in earnest, than from a variety that may have a higher yield but ripens later.’

Model farmer Yekoyesew Emru – 2.5 hectares, six children – is applying himself to growing potatoes. ‘Two years ago we compared seven varieties. The Beletta variety came out as the best. Beletta turned out to be much more productive than our old varieties, so now everyone wants those seed potatoes. We also learned a new storage technique in the project. I used to just dump all the seed potatoes in a heap in a corner of my house. Now they lie on a shelf in a well ventilated shed, so you get

less rot. The new variety is so much more productive that I am considering growing less maize next year because you can earn more from potatoes.’

RELIGIOUS HOLIDAYS

Raising productivity does not always hold an immediate appeal for farmers. Ethiopians are a proud race and for an Ethiopian livestock holder there is a lot of status in a large herd, even if each cow only gives a couple of litres of milk a day. And overgrazing has caused degradation of marginal land. In experiments with better cattle feed, the milk yield quickly rose from 2 to 2.5 litres a day. ‘Five healthy cows that are well looked after and have a roof over their heads might give as much milk as 50 cows that roam around the area causing soil erosion,’ says Koomen. ‘But a farmer with five cows is seen as a loser.’

‘I come to Ethiopia six or seven times a year but it is always hard for a westerner to really get to grips with a country like this and to understand how decisions are reached. It is noticeable for instance that there are a lot of religious holidays bang in the middle of the planting season. All work comes to a standstill and no weeding is done, however badly it is needed.’ Ethiopian agriculture is still largely dependent on manual labour and is therefore very labour-intensive. ‘And Ethiopia has many different tribes and an enormous cultural diversity. The country really is different to the rest of Africa. Our biggest challenge is to set up something sustainable here. Something that sticks even after the western experts have left again. Farmers who work with CASCAPE get a lot of attention and extra resources now but will they go on digging after we leave? Be that as it may, in CASCAPE we have developed an innovative concept that we can apply in other countries as well as in Ethiopia, and beyond the agriculture sector as well.’ ■



CHRISTY VAN BEEK,
Alterra Wageningen UR

‘We give fertilizer advice tailored to each soil type’



IRENE KOOMEN,
Centre for Development
Innovation (CDI) Wageningen

‘And the question is whether the money earned at the market always goes into the household kitty’