



# Quality seed for Africa

**Many African farmers still lack quality seed, and neither national governments nor commercial companies can meet the demand. The Centre for Development Innovation in Wageningen is working with farmers' groups to meet the demand for quality seed at the local level.** TEXT MARION DE BOO PHOTOGRAPHY CORBIS

**M**aggie's bean plants look beautiful. Healthy, uniform plants with shiny leaves and a plentiful harvest. Maggie is a member of a farmers' cooperative for which she has been growing seed for several years now in her small village in south-west Uganda. The cooperative sells her seed on the local market. It did not take long before she could rent more land, because there is a big demand for quality seed. And now her eight children can go to school. 'There is a lot of demand for the seed from this cooperative, because they are vigorous, healthy seeds of a new and productive variety which was bred at a national research institute,' explains Marja Thijssen of Wageningen UR's Centre for Development Innovation (CDI). 'We put this Ugandan farmers' cooperative in touch with that institute so that the farmers could get to know this new variety.' Thijssen coordinates the seed programme ISSD Africa, which was launched in Nairobi mid-September.

ISSD stands for Integrated Seed Sector Development. Together with the Royal Tropical Institute (KIT), CDI carried out several studies in eight African countries, including Ethiopia and Uganda, between 2010 and 2013. The new umbrella programme, initially for two years, is funded by the Dutch government and the Bill & Melinda Gates foundation. 'Quality seed is increasingly considered a key factor for sustainable growth in agricultural production, so as to combat poverty and improve food security,' says Thijssen. 'We research exactly what it takes to make interesting new varieties available as quality seed to the farmers. Who should tackle it, what are the incentives to take it up, and how do you get businesses on board?'

## SEED MULTIPLICATION

In many African countries, plant breeding is a public activity. There are international and national research institutes which work on developing new varieties.

## ‘Good seed is considered a key factor for food security’



This work is public-funded. ‘However, once a new variety is added to the list of released varieties, the researchers consider their job done,’ explains Thijssen. ‘They don’t start promoting their material themselves, because that is not their role. Yet a few steps still need to be taken to produce the ‘basic seed’ before multiplying it for the market as commercial seed. As long as all commercial seed producers have equal opportunities to get exactly the same variety and basic seed from public breeding programmes, they are not usually very interested in multiplying that seed, as there is no way for them to stand out from the competition.’ Meanwhile, smallholder farmers and local farmers’ cooperatives are often not sufficiently aware of the existence of new varieties. Thijssen: ‘Access to quality seed is a big challenge for smallholder farmers all over Africa.’ Smallholder farmers get their seed from many different sources. They get at most 20 percent of it from seed companies; the other 80 percent they either grow themselves or obtain through barter or from buying it at the local grain market.

From 2006, Thijssen worked on a local project in Ethiopia which aimed at producing better seed for smallholder farmers, and which was gradually upscaled. During her fieldwork she saw that farmers who grow crops such as sorghum and wheat for their own use keep aside some of their seed. ‘They eat the rest or sell it on the local market. That often goes fine for years on end. But, if a disease gets into the crop, the seed can be infected too, and the disease is carried over to the next generation. And with this approach, farmers may carry on growing older varieties for years, even though better

varieties are available. Sometimes a farmer makes a once-off purchase of seed of a new wheat variety and then goes on to grow it himself or herself for years.’ Farmers are usually reluctant to spend money on new seed for their food crops. And the commercial plant-breeding companies are not very interested in developing new varieties of these food crops, because they cannot make much money out of them.’

### CASH CROPS

When it comes to cash crops, however, farmers do not mind investing. Examples of such cash crops are maize, vegetables and sunflowers. If the farmer buys quality seed, it pays off in a better harvest and higher incomes. In the case of maize, a lot of use is made of hybrid varieties which deliver extra high yields and a uniform crop. However, the farmer has to buy new seed every year, because the hybrid varieties are not genetically stable: if farmers harvest and then plant their own seeds, their next yield will be drastically lower. Big companies operating in many African countries sell one or two hybrid maize varieties throughout the country. ‘That can be pretty lucrative,’ says Thijssen. ‘Farmers buy that hybrid maize seed, even if it costs twice as much as seed of a non-hybrid variety. And there is also a market for commercial seed of onions or other vegetables, some of it coming from Dutch plant-breeding companies. At the same time we see a role for local farmers’ cooperatives and small seed companies producing commercial seed on a small scale for the local market of crops such as wheat, sorghum, rice or teff. By doing this you can really strengthen the agriculture sector: farmers get access to quality seed and there is also more chance of it becoming available at the right moment.’

ISSD programmes also focus on propagation material for cassava and potatoes. Healthy planting materials for such vegetatively propagated crops are a must too. Potatoes are particularly vulnerable to severe outbreaks of disease. Farmers are often prepared to pay a bit more for healthy seed potatoes and strict quality control. Thijssen: ‘If you tackle this at the local level, your overheads are small and so are your transaction costs. Then it soon becomes commercially viable.’

### SEED COMES TOO LATE

‘It is not just the commercialization of new varieties that causes problems; it is also tricky to get the seed of these

varieties to the right place at just the right time,' says Gareth Borman, one of Thijssen's CDI colleagues and originally from South Africa. 'In the 1960s and 70s, seed supply was seen as a government task in sub-Saharan African countries. There were a lot of problems. Seed did not reach the farmers on time and stayed in warehouses until the sowing season was over. In response to that, people wanted to privatize the seed sector, but many food crops turned out not to be lucrative enough for commercial breeding companies and seed multipliers. 'In our ISSD programmes we are trying to set up a commercial programme for local farmers' cooperatives and small companies, to produce quality seeds of locally adapted varieties. We think this could enable farmers to achieve 30 percent higher yields,' says Borman.

Once an improved, productive variety with good genetic characteristics is available, you need investment in knowledge at the local level. Seed crop cultivation, seed harvesting and seed storage all need to meet certain standards. Thijssen: 'We advise using the best, most fertile tract of land for growing seed, and if the farmer only has a little fertilizer, putting it on the seed crop. The crop should be kept clean so that no seed from other varieties, diseased plants or weeds can get mixed in with the harvest. The harvested seed has to be dried well so that it keeps better, and stored properly to protect it against fungal diseases or rats. Besides all this, we are investing in business-planning, market orientation, promotion and marketing.'

### SENDING SAMPLES

Seed laws and regulations and quality control pose serious challenges too. Borman: 'In countries like Kenya and Ethiopia all the seed has to be certified centrally, even if it is locally produced and destined for the local market. Seed producers have to send in samples which the authorities then sow and test for quality and varietal purity. The sale of uncertified seed, by local farmers' cooperatives for example, is technically illegal in this context. But, governments are often defeated by the task of checking and certifying all that seed, with a lot of bureaucracy and delay as a result.' There are fake seeds in circulation too, which is a big problem in Uganda. What should be used as grain and is of inferior quality gets onto the market as quality seed through admixing by unscrupulous traders in

### ISSD AFRICA

The seed programme ISSD Africa was launched in Nairobi, Kenya, on 18 September. The objective of ISSD (Integrated Seed Sector Development) is to give farmers throughout Africa access to quality seed by bringing donors and organizations together, by supporting entrepreneurship in the seed sector, by translating international agreements on seed into national legislation in developing countries, and by collaborating with the African Union's agricultural programmes. The ISSD Africa programme dovetails with existing national seed programmes in various African countries including Ethiopia, Uganda and Burundi, and with previous research by CDI Wageningen UR and the Royal Institute for the Tropics (KIT).

the seed value chain. It is sold with a professional-looking coloured coating at the price of quality seed, which is often more than twice its true value. But it is fake and it delivers a poor harvest. There are hardly any seed inspectors and few penalties for perpetrators. Borman: 'Quality control starts in the field. We want more decentralized controls. And that needs to be reflected in seed regulation. After all, the most important interventions for ensuring seed quality are carried out in the field by the seed producers themselves. If he or she is a reliable source of quality seed, you don't have to test every batch separately. What is more, you can let the market here do its work. Because only when a business delivers seed of good quality do the customers come back for more.'

Maggie succeeded in this. Participating in the cooperative was not a bad move for the Ugandan farmer. Her thatched round mud hut has been replaced with a solid brick house with several rooms. And her husband has bought a motorbike so as to be able to expand their trade further. ■

[www.issdseed.org](http://www.issdseed.org)