



Farmers at Mutomo market selling cereals.  
Photo: Mary Mwendwa



## Finding a way out of the maize

*Written by Mary Mwendwa*

Recurring drought and crop failure in many parts of the world have led to food and nutrition insecurity, and a dependence on food aid. But recently, some farmers in Kenya have been developing their own sustainable way to secure enough nutritious food along with extra income so that they can send their children to school. Traditional drought tolerant, nutritious crops such as cassava, sorghum and millet, that were losing popularity due to a surge in maize production, are again becoming commonplace, with reliable harvests improving diets and income.

The dryness of the soil in Mutunga's farm shows that it has not rained for a long time in Mutomo district in eastern Kenya. "The last time I had a good maize harvest was in 2003," says Mutunga. He is among a growing group of farmers in the area who are diversifying their crops as a way of dealing with the changing climate that is putting their lives at risk. But this has also had other benefits, including greater nutritional diversity.

## The coming of maize

Following colonialism, maize gradually became a staple in the Kenyan diet, replacing traditional crops such as sorghum and millet. Nutritional repercussions from this dietary shift were significant, as maize alone does not provide a balanced diet in terms of proteins, vitamins and minerals. Sorghum and millet are rich sources of B-complex vitamins, and cassava is a source of calcium and vitamin C, as well as a major provider of calories.

“People here were used to planting maize, but harvests have failed more and more, so they have turned to drought tolerant crops such as sorghum,

millet, cowpeas and cassava,” says Benedict Mathitu, an extensionist. These crops are not new. In fact, they used to be highly valued but we have forgotten about them. Neglected by people and science, they are also sometimes called ‘orphan crops’. Musenya Joseph, one of Mutunga’s neighbours explains, “These crops were planted by our ancestors a long time ago, but we abandoned them. Now that things have turned bad on us in terms of the harsh climate, we are going back to these crops as they can withstand drought.

We have seen the benefits and no doubt this is our best option for now.”

## Spreading risk

The average annual rainfall in Mutomo district is 300-600 mm. It is one of the poorest parts of Kenya. Farmers find it difficult to invest in planting anything that is not drought tolerant. They need to spread their risk and also plant as many different crops as possible. Intercropping sorghum, millet and cowpea with cassava and maize is one way of doing this. Cassava is suited to areas where rainfall is uncertain.

A well-established cassava plant can resist drought by shedding its leaves, and resuming growth only when the rain starts. Similarly, sorghum and millet are relatively easy to maintain. They are less susceptible to pests and diseases, and when harvested and stored in a dry place, they can be kept for long periods.



Farmers in a training on cassava in Mutomo – Photo by Mary Mwendwa

## Diversifying crops and diets

The benefits of returning to orphan crops are primarily felt in farmers' bellies. Although the main motivation for returning to these traditional or neglected species was to guarantee a harvest during drought years, moving from maize to cassava, sorghum and millet has also had profound implications in terms of nutrition. Anastancia Musenya, whose farm is dotted with cassava plants, says, "Cassava is our saviour in this hunger-stricken region where we get regular droughts and famines. Cassava can withstand harsh weather and its nutrition is really good." Cassava is a good source of carbohydrate, though there are considerable differences between varieties in their nutritional content, with some containing cyanide that requires a lot of cooking to break down. But where Anastancia lives, cassava has become the new staple crop replacing maize.

Farmers in Mutomo also know that a diverse diet is more than just the sum of its parts, and is more than just calories. "We don't grow cassava alone, we have

cowpeas, millet and sorghum too," says Musenya. "Sorghum and millet are some of our traditional crops which we grind to make highly nutritious porridge flour" adds Mutunga. "Lactating mothers and babies feed on it and even during drought everybody is saved by the porridge."

Orphan crops are regaining popularity as farmers realize the nutritional wealth that was left behind by their forefathers. Intercropping is also becoming common as farmers strive to cultivate diversity. Tamarind trees, pigeon pea and green gram are just some of the traditional legumes that had been forgotten but are now being grown again. Anastancia says, "Tamarind and pigeon peas were a part of our forefathers' diet. Tamarind is very good for adding to the porridge which we cook here, for flavour and more protein." Other complementary crops growing in popularity over recent years include mangoes, bananas and other fruits.

## Support and self-help

Although recurrent drought forced many farmers to start diversifying their crops, the transition needed community level support to address remaining challenges. Cultural barriers such as associating cassava with a 'poor man's diet', and practical barriers such as pests and diseases, needed to be overcome. A large number of self-help groups became established to discuss and tackle these challenges, enabling many more farmers to make the change.

Mutunga is a leader of several self-help groups. One of the groups, *wikwatyo wa Kandae*, meaning 'the hope of Kandae', organises training on cassava farming for its members. The group receives a lot of support from the Ministry of Agriculture and from community based organisations.

Musenya, also a member of the group, says that the biggest challenge they faced when starting to grow cassava was getting hold of quality seeds. Two problems were that the cassava mosaic virus and

cassava brown streak virus are common, and that cassava takes longer to mature meaning that more planning is needed. Thankfully, Dr. Cyrus Githunguri, a government agronomist and crop physiologist, helped to develop a disease resistant and quick-maturing variety. He calls upon farmers to use such new varieties of old crops to help fight poverty and poor nutrition in their homesteads.

Martha Mwangi works with more than 40 farmer groups in the region. Her role is to assist them with training on farming methods that are more suitable for the current climate. She works closely with KARI and the Ministry of Agriculture, and facilitates communication between them and the farmers in Mutomo. She believes that cassava farming has greatly improved the livelihoods of many farming families in the area. Extensionists confirm that farmers have really welcomed the shift to drought tolerant crops after participating in training through their self-help groups.

## New crops, new opportunities

The self-help groups do more than just facilitate training on growing crops, however, explains Mutunga. "We also have a savings scheme where members contribute money, which is used in times of emergencies like drought, and for providing school fees for our children."

They motivate each other to learn more about making nutritious and tasty food and support farmers to sell the surplus from the crops they now grow, such as millet, sorghum and pigeon pea.

The groups that Martha Mwangi works with own a bakery which makes bread from a mix of wheat and cassava flour. Cassava chips, crisps, cakes and chapattis are also made and sold in local markets, with sales contributing an estimated 300-500 Kenyan Shillings (about US\$3-5) per day to each household. This is an important addition to farm income, and it provides more nutritious foods for others to consume.

This renewed diversity means that more food is available from the harvest. The diversity brings added nutritional value into the home and market while also building resilience. This is a real boost to farmers who have until recently been suffering from recurrent drought and relying on food aid. Having rediscovered traditional crops, farmers spread their risk, learn together, and pass on the nutritional benefits to their families and others who buy their new processed products.

The diversity brings  
nutritional value  
into the home,  
onto the market and  
at the same time  
builds resilience.



Wikipatyo wa Kanda  
farmers being trained  
by Martha Mwangi.  
Photo: Mary Mwendwa

### CONTACT

**Author:** Mary Mwendwa is a freelance science journalist based in Nairobi, Kenya. 2014. *This case study is adapted from an article published by ILEIA in Farming Matters magazine, [www.farmingmatters.org](http://www.farmingmatters.org)*

**Contact:** For more information, contact Mary Mwendwa  
**Email:** [mary.mwendwa@yahoo.com](mailto:mary.mwendwa@yahoo.com)

Other case studies by AFSA can be found here: [www.afsafrica.org/case-studies](http://www.afsafrica.org/case-studies)

Supported by:

**AgroEcology  
Fund**

Pooled fund for agroecological solutions