

No maize, no life!



Rashid Said Mpinga, a farmer in Tanzania's Morogoro District, holds up ears of TAN 250 maize variety, which he grew between March and June this year.

In Morogoro, a drought-prone area in Tanzania, farmers are using certified maize seed and urging other farmers to grow a new drought tolerant variety, TAN 250, which they say is like "an insurance against hunger and total crop failure, even under hot, dry conditions like those of recent years."

"Without good quality maize seed, you cannot earn enough, you cannot have life!" says Rashid Said Mpinga. He should know. At 79 years, he has been growing maize for nearly 50 years. "Over the years, I've used many maize varieties, and they worked very well when we had more reliable rainfall. These days, most of these varieties are no longer suitable." Mpinga refers particularly to the last two maize seasons, which were characterized by high temperatures and irregular rainfall.

His farm is in the Mkambarani area of Morogoro, an area whose soil fertility has declined over the years. When it rains, the water quickly drains away. "We needed varieties that can cope with these changes," says Mpinga. He is one of thousands of farmers who have tried a new variety-TAN 250-developed to cope better with drought and poor soils.

"I like this variety [TAN 250]. It's fast-maturing, drought tolerant, and has large, white, and hard kernels, which make it good for flour milling," says Mpinga's neighbor Pangras Tairo. Having grown the variety for two seasons now, both farmers are happy with its performance. "Last season, we were able to get 39 bags (3.9 tons) per hectare. This season, we're hoping for a better yield; 49 bags (4.9 tons). We'll be assured of food and an income when we sell the extra maize, and will be able to send our children to school," says Tairo. Farmers also say the variety's hard kernels are not easily attacked by pests in the field or in storage.

From Chiredzi to Morogoro

TAN 250 is one of two improved drought tolerant varieties recently developed and registered for sale in Tanzania, through the Drought Tolerant Maize for Africa (DTMA) Project. They represent years of fruitful collaboration between CIMMYT and Tanseed International Limited, a Tanzanian seed company. TAN 250 and TAN 254 come from

ZM 401 and ZM 721, varieties selected for tolerance to drought and low soil fertility conditions by CIMMYT at Chiredzi, Zimbabwe.

"The Ministry of Agriculture in Tanzania grew both varieties in trials and I was impressed by their drought tolerance, yield, and disease resistance," says Isaka Mashauri, managing director of Tanseed International. "I selected them because I wanted to give Tanzanian farmers options when it comes to growing maize under drought."

Mashauri requested the experimental varieties from CIMMYT and evaluated them in variety trials in Tanzania. In 2005, he attended an intensive maize breeding and variety release course organized by CIMMYT. "During the course, I learned useful techniques and knowledge on the procedures and requirements for registration of maize varieties, especially how to do this cost-effectively and within the shortest time," says Mashauri. "I conducted several trials at



Isaka Mashauri, managing director of Tanseed International showing the performance of the TAN 250 maize variety at the company's demonstration plot in Morogoro, Tanzania.

research stations and with farmers, to be sure that the varieties were indeed well adapted to Tanzania and liked by farmers." This approach proved successful and Tanzania's competent authorities officially registered TAN 250 and TAN 254 in 2008.

Saving crops from sketchy rains

The main rainy season was irregular in Tanzania this year. In certain areas, rains began late or were meagre, leaving patchy maize stands and barren plants. Farmers who paid for seed, fertilizer, and labor for such crops will lose both their investment and their harvests—that is, they will receive neither food nor income. In contrast, in fields planted to TAN 250, rains that fell during critical growth stages brought the maize to maturity after only 90 days.

Crop insurance inherent in the seed

"At Tanseed, we aim to offer farmers many choices when it comes to drought tolerant maize varieties. We promote the use of certified seed and with our varieties we offer them the promise of a good crop," says Mashauri. "When the rains are good, farmers

can harvest a very good crop. Even when rains are unreliable, farmers can still harvest something—it's like insurance."

Many farmers continue to grow very old maize varieties simply because they have no access to information on newer, better performing varieties available. With support from the DTMA Project, Tanseed has used radio, television, brochures, demonstration trials, field days, and farmer field schools to reach many farmers with messages on improved, drought tolerant maize varieties. The payoff is that farmers have quickly come to know about and demand these varieties, particularly TAN 250. Those who have grown TAN 250 think of it as 'kinga njaa, okoa maisha' -Kiswahili for 'that which prevents hunger and saves lives.'

Rising temperatures and increasing frequency of droughts spur CIMMYT to continue developing varieties that help small-scale farmers face the challenges of climate change and to champion seed testing and release policies which put the improved materials quickly at farmers' disposal. Key to this for maize in Africa is partnerships with Tanseed and other small- and medium-scale companies throughout sub-Saharan Africa that are the chief providers of maize for such farmers.



A notable difference in maize ears: From left to right: the traditional variety, Asili; the improved variety, TMV 1; and the improved, drought tolerant variety, TAN 250.

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