RICE | Ethiopia's millennium crop

by **Savitri Mohapatra**

Rice is now a major livelihood option for farmers in Ethiopia and an important crop for the country's food security

Ethiopia, Africa's oldest independent country and the cradle of an ancient civilization, is fast emerging as one of the big rice-producing countries in sub-Saharan Africa.

"Area rose from 6,000 hectares in 2005 to nearly 222,000 hectares in 2010 and paddy production from 15,460 tons to 887,400 tons," Dr. Tereke Berhe, former regional rice coordinator at Sasakawa Africa Association and current special advisor for rice at the Agriculture Transformation Agency in Ethiopia, said. "At the same time, the number of rice farmers increased from 18,000 to more than 565,000."


RICE HAS become a profitable crop for farmers of Fogera District in northwestern Ethiopia.

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Millennium crop

Although rice has just been recently introduced to Ethiopia, recognizing its importance as a food security crop and a source of income and employment opportunities, the government of Ethiopia has named it the "millennium crop," and has ranked it among the priority commodities of the country.

The national rice research and development strategy (NRRDS) for 2010-19 has been prepared to tackle rice-related progress in rice value chain, postharvest, grain quality, and marketing issues.

According to Dr. Berhe, the rice sector in the country saw a phenomenal growth from 2005 to 2010.

Abundant rice

Until a few years ago, the staple food crops in Ethiopia were maize, wheat, sorghum, and teff—a fine grain unique to the country, which is used for making "injera," a traditional Ethiopian bread.

Rice started to be recognized in the country because of its good productivity, available labor, and vast areas suitable for both rainfed and irrigated systems.

In Ethiopia, about 30 million hectares are suitable for rice, according to the NRRDS. Vertisols, or black clay soils, are abundant in the country and have a high agricultural potential. But, these are difficult to work with, as they are hard when dry and sticky when wet.

"Earlier, farmers used to abandon the waterlogged vertisols in the Fogera plains—a major rice belt in northwestern Ethiopia—during the rainy season," explained Bayuh Belay Abera, national rice research coordinator at Adet Agricultural Research Center in Bahir Dar.

"But now rice serves as a major livelihood option in this area," said Mr. Abera. "When farmers saw that it grows well under waterlogged conditions, they have switched to this crop in the rainy season and have become prosperous since then."

Rice has also become popular because it can be used to make many valuable by-products, such as rice husk, rice bran, and beer. It can also partially or fully replace teff in the making of injera.

Contribution of research

Thanks to active rice R&D activities and with strong support from the Ethiopian government, Sasakawa Global 2000 (SG 2000), and the Japan International Cooperation Agency (JICA), farmers have access to several improved varieties and crop management techniques.

SG 2000 introduced NERICA rice varieties from the Africa Rice Center (AfricaRice). In the last few years, NERICA 1 and NERICA 2 have been officially released for both upland and irrigated ecologies; NERICA 3, NERICA 4, and SUPARICA 1 for upland ecologies; and NERICA 14, NERICA 15, and NERICA 16 for irrigated ecologies.

In addition, various other improved varieties, such as Shebele (IR688059-76-3-3-3-2), Gode-1 (BG-90-2), and Hoden (MTU-1001), have been released for irrigated systems. Among the traditional varieties, farmers continue to grow "X-jigna," which was introduced by the North Koreans for the rainfed lowlands.

However, since much of the arable land in the country is located in mid to high altitudes, cold-tolerant rice varieties are essential for these areas. As part of the IRRI-AfricaRice joint Stress-Tolerant Rice for Africa and South Asia (STRASA) project, researchers are focusing on developing cold-tolerant rice varieties for such regions.

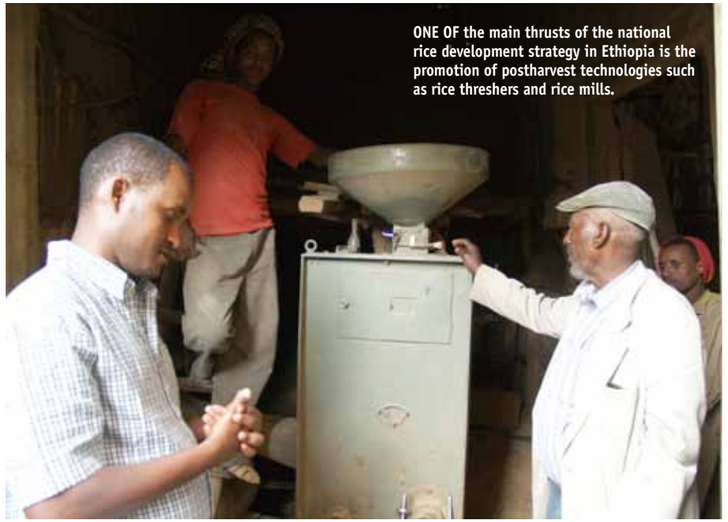
"We have been evaluating varieties for cold tolerance in partnership with the Ethiopian Institute of Agricultural Research and the Amhara Region Agricultural Research Institute," said Dr. Negussie Zenna, an AfricaRice researcher who is closely involved with the STRASA project.

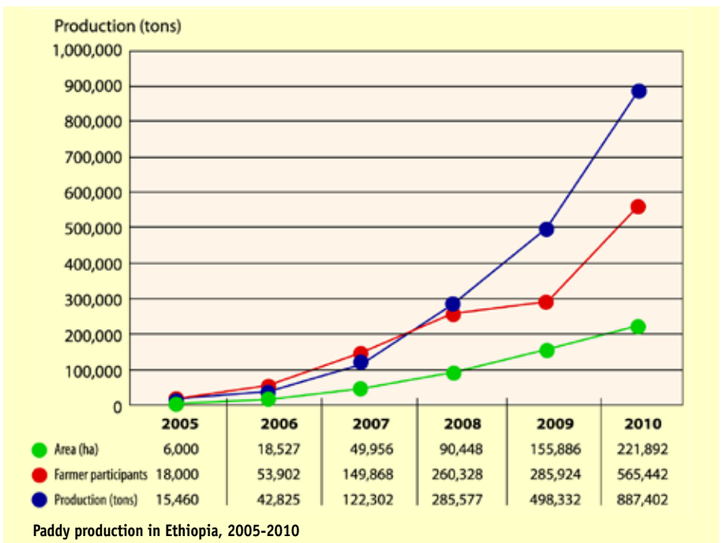
As a result of this work, two cold-tolerant varieties have been selected—FOFIFA 3737 from the Madagascar national program released in 2010 for the irrigated ecology and WAB 189 from AfricaRice released in 2011 for rainfed lowlands. Through participatory varietal selection, farmers confirmed that both varieties have acceptable grain quality.

"The farmers showed great interest in WAB 189 because of its earliness, high yield, and good biomass," said Tadesse Lakew, rice breeder at Adet Center.

Dr. Lakew is among the new generation of young African rice scientists who are trained through the AfricaRice Breeding Task Force, which has been launched to build the rice breeding capacity of national partners and stimulate the delivery of improved technologies through strong partnership between international and national rice scientists.

Such partnership will be vital to realizing the Ethiopian government's plan to raise paddy production to about 4 million tons in 2019 and increase rice area to 774,000 hectares.


ONE OF the main thrusts of the national rice development strategy in Ethiopia is the promotion of postharvest technologies such as rice threshers and rice mills.



	2005	2006	2007	2008	2009	2010
Area (ha)	6,000	18,527	49,956	90,448	155,886	221,892
Farmer participants	18,000	53,902	149,868	260,328	285,924	565,442
Production (tons)	15,460	42,825	122,302	285,577	498,332	887,402

Paddy production in Ethiopia, 2005-2010


DR. BAYUH Belay Abera, national rice research coordinator at Adet Agricultural Research Center in Ethiopia, hopes to strengthen R&D partnership with international organizations.


DR. TADESSE Lakew, rice breeder at Adet Agricultural Research Center, shows variety WAB 189, which was released in 2011 for the rainfed lowlands.

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Traditionally, rice threshing is done using oxen in many parts of Ethiopia. The oxen trample on rice stalks and the grains are swept and gathered. Farm machines such as mechanical threshers are now being promoted in the country to reduce yield losses and save time.