

## New rice for Africa

Rice consumption is growing dramatically in West Africa, partly fueled by population growth, partly by increasing consumer demand. Growth in local production is slow, so that production is falling ever further behind demand. The region is now importing about half its requirements, some 3.5 million tons, at a cost approaching one billion dollars per year.

However, the prospects for rice self-sufficiency are now looking much better. In recent years the West Africa Rice Development Association (WARDA) has developed a family of new strains – known as the NERICA (New Rices for Africa) rices – that hold enormous promise of high yields under West African conditions. This success demonstrates that biotechnology has much to contribute where public funding ensures that the interests and needs of small poor farmers are made paramount.

WARDA has achieved the daunting task of crossing African rice (*Oryza glaberrima*) with the Asian species (*O. sativa*). The scientists have now fixed some 3,000 new rice lines, resulting from the crossing, backcrossing and subsequent selections of best performing plants. The rices share many of the characteristics of their African ancestors. They grow well in drought-prone, upland conditions and their early vigorous growth crowds out the

weeds that ordinarily consume vast amounts of labour for their removal. They are resistant to local pests and disease, and tolerant of poor nutrient conditions and mineral toxicity. But as they mature, they take on some of the characteristics of their Asian ancestors, producing more erect leaves and full panicles of non-shattering grain. And they are ready for harvesting in 90 – 100 days, which is 30 – 50 days earlier than current varieties. Under low inputs they yield up to 3 tons per hectare, and with high inputs up to 5 tons (current average yields in the region are barely above 1 ton).

WARDA has brilliantly combined the high science of biotechnology with an approach that creates a central role for farmer participation. Given the great diversity of African ecologies the traditional top-down extension approach is inappropriate. In seventeen countries farmers are conducting their own farm trials of over 300 of the new lines.

WARDA and others have been developing a strategy for involving farmers in the selection and evaluation of varieties, in several West African countries. Farmers evaluate the different strains and pass their judgment back to the breeders. Since seed supply can often be a major problem with new varieties, this is being organized through community-based seed systems, which builds on farmers' own seed saving practices. The spread of these varieties has been rapid, with 8,000 hectares planted in Guinea in 1997, and 90,000 in 2000. Plans are now underway to distribute these seeds throughout the region.

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Women harvesting rice

