

Improved Maize for African Soils



An alliance to improve food security and livelihoods in sub-Saharan Africa by creating and sharing new maize varieties that use fertilizer more efficiently and help smallholder farmers get higher yields, even where soils are poor and little commercial fertilizer is used.

African maize farmers must deal with drought, weeds, and pests, but their problems start with degraded, nutrient-starved soils and their inability to purchase enough nitrogen fertilizer. Maize yields of smallholder farmers in sub-Saharan Africa are a fraction of those in the developed world, due mainly to the region's poor soils and farmers' limited access to fertilizer or improved maize seed. On average, such farmers

apply only 9 kilograms of fertilizer per hectare of cropland. Of that small amount, often less than half is captured by the crop; the rest is leached deep into the soil where plants cannot recover it or otherwise lost.

Launched in February 2010, the **Improved Maize for African Soils Project (IMAS)** will develop maize varieties that are better at capturing the small amount of fertilizer that African farmers can afford, and that use the nitrogen they take up more efficiently to produce grain. Project participants will use cutting-edge biotechnology tools such as molecular markers—DNA “signposts” for traits of interest—and transgenic approaches to develop varieties that ultimately yield 30-50% more than currently available varieties, with the same amount of nitrogen fertilizer applied or when grown on poorer soils.

The varieties developed will be made available royalty-free to seed companies that sell to the region's smallholder farmers, meaning that the seed will become available to farmers at the same cost as other types of improved maize seed.

In four years or less, African farmers should have access to IMAS varieties developed using conventional breeding that offer a 20% yield advantage over current varieties. Improved varieties developed using DNA marker techniques are expected to be introduced within seven to nine years, and those containing transgenic traits are expected to be available in approximately 10 years, pending product performance and regulatory approvals by national regulatory and scientific authorities, according to the established laws and regulatory procedures in each country.

IMAS is being led by CIMMYT and funded with USD 19.5 million in grants from the Bill & Melinda Gates Foundation and USAID. The project's other partners—the DuPont Business, Pioneer Hi-Bred; the Kenya Agricultural Research Institute (KARI); and the South African Agricultural Research Council (ARC)—are also providing significant in-kind contributions including staff, infrastructure, seed, traits, technology, training, and know-how.

