

HORIZON

## Mock planting of first GM maize



Workers at the Kiboko research site carry out the mock planting exercise in preparation for the country's first field trials for transgenic maize. PHOTO/Bernard Muthaka

By BERNARD MUTHAKA Posted Wednesday, November 11 2009 at 13:47

An African saying cautions that when you have eaten your fill, you should cover your stomach. Economists who study behaviour say rich nations have for years been doing the opposite. The richer they get, the more wastefully the people eat.

Generally the poor eat vegetables, while the rich eat food that eats vegetables. While Americans consume 120kg of meat each per year; in the developing world they eat only 28kg.

Mainly because of trends such as this, the economists and other professionals who project how people will live in the future say that in only 40 years, we will need the equivalent of two earths to feed mankind.

### Economist

According to experts, this is going to be the hungriest century in history, with the global population estimated to increase three-fold. To feed all these people, the Food and Agriculture Organization says man will need to produce twice as much food.

She is no economist, and 65-year old Nduku Katunge's rapport with hunger is anything but a projection. As she plants maize at a research site in Kiboko near Makindu, Katunge, a widowed mother of seven, is wondering whether she will eat tonight, and whether she will be able to pay this month's rent of Sh 300.

Katunge is one of the casual workers hired by Kenya Agricultural Research Institute (KARI) to help in the country's first mock trials for development of genetically engineered maize varieties, which are expected to withstand moderate drought periods.

### Improvement

The project, known as the Water Efficient Maize for Africa (WEMA) is led in Kenya by KARI, and is also being implemented in four other African countries including Uganda, Tanzania, Mozambique and South Africa. It is coordinated by the African Agricultural Technology Foundation (AATF).

Other organizations taking part include the International Maize and Wheat Improvement Center (CIMMYT) and Monsanto. Katunge remembers a time when she could feed her family reasonably well. "We have not had rain for almost three years, and all my crops were wiped out, and I had to come here for casual jobs, leaving my daughters to also find ways to fend for themselves," she says.

While she is grateful to earn her wages at the project, Katunge and other poor farmers hope that eventually fortunes will change. But experts predict worse times, as climate change patterns indicate that the tropics will be most affected. Maize, the staple of more than a quarter of a billion East Africans, is vulnerable to water problems and to temperature changes. It is estimated that maize production will drop in sub-Saharan Africa by 15% in the next 10 years alone.

### Experimental

If the WEMA project goes as planned, the moderately drought-tolerant maize varieties will result in an additional two million tons of maize in the participating countries, meaning 14 to 21 million people would have more to eat and sell.

According to Dr James Gethi of KARI, the mock trial planted in September at the Open Quarantine Facility at Kiboko are one step towards increasing the country's self-sufficiency in maize, by far the most popular food item in the country. The mock trial planting was done under the supervision of the Kenya Plant Health Inspectorate Service (KEPHIS).

### Varieties

Mock trials simulate the steps that will be carried when the actual confined field trials for the genetically engineered maize varieties begin, a stage expected next year. KEPHIS will determine the country's readiness for the trials.

Confined field trials are small, restricted experimental trials that are required before regulatory approval of genetically modified crops is given. The experiments serve as a training tool to give researchers important information on management of the experimental crop before the actual crop is planted.

The mock trials also provide a chance for researchers to fine tune the procedures on crop environmental interactions and agronomic performance of an experimental crop, in a safe and contained manner.

### **Irrigated**

While the country hopes for the best, Dr Gethi regrets that basic technologies such as use of fertilizer and irrigation are still largely unexploited in Kenya.

According to a World Bank study, rainwater-fed farms lose about Sh 2000 with every 1°C rise in temperature - equivalent to a month's profit for the average poor farmer – while irrigated farms gain about Sh 2,600.

According to Dr Daniel Mataruka the African Agricultural Technology Foundation Executive Director, the WEMA project is designed as part of the solution to hunger in developing countries.