

HORIZON

Hunger: Africa can get out of the trap



By DANIEL MATARUKA Posted Wednesday, August 19 2009 at 18:03

Africa needs economic and agricultural revolutions greater than the one observed in Asia. With a population of 770 million people estimated to rise to 1.75 billion by 2050, poor performing agriculture aggravated by invasive pests, weeds, land degradation, erosion, droughts and the effects of climate change, Africa faces one of the biggest challenges of its time – assuring its increasing population of a sustainable food supply.

In the US, Europe and Asia, improvements in agricultural productivity has had direct relationship to improvements in economic development. This has not been the case in Africa where Africa continues to suffer under-investment agricultural research and extension, farm mechanisation along with enabling infrastructure such as roads, electrification, irrigation, etc.

The US economic growth during the last half of the 20th century benefited from improved seeds, improvement in crop management and mechanisation. The necessary infrastructure i.e. roads and rural electrification were already in place by then.

The overall efficiencies brought about by mechanisation and herbicides especially after the 1950s freed the larger proportion of the population to engage in non-farm occupations that further supported economic growth and development.

Rural incomes

Similar results were obtained with the Asian Green Revolution where countries like India which were net grain importers became net grain exporters, freeing foreign exchange for other uses and agricultural labour flowed to other sectors due to the expansion of the economy. Rural incomes increased by 193 per cent between 1960 and 2006.

For Africa to realise the benefits of a Green Revolution, a lot more effort, commitment and focus is required from the governments. The continent currently lacks the five key instruments of the Asian Green Revolution — development and use of high yielding varieties, improved utilisation of water through irrigation systems, utilisation of farm inputs such as fertiliser and pesticides, availability of credit facilities (micro-finance) and rural infrastructure.

To move forward, Africa will not only need to address these aspects but to also recognise the new challenges the world is facing and new technological advancement presented by biotechnology. One such aspect of biotechnology is genetic engineering. Recently, use of GM technology to produce medicines has risen steeply.

Between 2001 and 2006, 60 to 70 per cent of drug approvals in the US and European Union involved GM technology. About 25 per cent of new drugs going into the global market are produced using GM technology, while in agriculture, 80 per cent of all cultivated hybrid maize in the US is GM.

Colonial linkages

In his book, *Starved for Science: How Biotechnology is Being Kept out of Africa*, Robert Paarlberg articulates that, unfortunately, most African countries have adopted an anti-GM stance that appears to be influenced by European colonial linkages.

Yet, it is the application of science to agriculture that enabled Europe to produce surplus food. Consequently, while Europe may not require GM technologies to bolster their agriculture, they however, readily embrace them for improved healthcare.

But, where exactly is the role of GM crops in Africa? During the past decade, Africa's population increase is pushing farmers to encroach on fragile ecosystems. Climate change is increasingly manifest through erratic rainfall patterns, prolonged drought spells, and unprecedented floods, making rain-fed agriculture even more risky, thus aggravating food insecurity among resource-poor smallholder farmers.

Compounding this scenario are post-harvest pests that devour their meager harvests. Indeed, the challenges are great, sometimes disillusioning, but certainly not insurmountable.

Elusive

Under these circumstances, GM technologies have a role in addressing challenges that were previously elusive to classical breeding on its own. In Africa, benefits from GM technologies have already been demonstrated; in South Africa, under rain-fed conditions, Bt maize increased yield by 11 per cent.

In Burkina Faso, field trials on Bt cotton resulted in a two-thirds reduction in insecticide usage and a 15 per cent higher yield. Such success can be attained in Africa as well

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