

Africa is heading for an ecological disaster

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First introduced commercially in South Africa in 1998, genetically modified (GM) seeds are used extensively in our agriculture. In just over 10 years, 56 percent of South Africa's white maize and 72 percent of its yellow maize have been converted to genetic modification.

A staggering 96 percent of the area planted to cotton is comprised of GM varieties and 88 percent of soyabeans are GM. Genetic modification is an imported technology, and licensed for use in South Africa. A small handful of multinational agro-chemical/seed corporations - Monsanto, Syngenta and Pioneer Hi-Bred - control the GM seed market. Monsanto has bagged the lion's share of the patents on GM traits and secured access to the South African market through an extensive and well-oiled agribusiness dealer network.

Profits are secured through the extraction of exorbitant technology fees from farmers. Farmers using Monsanto's GM seed sign away the right to save or exchange seed. They also absolve Monsanto from liability for contamination. Monsanto has ruthlessly taken legal action against farmers for patent infringement.

Last year alone, the South African government acting through the Department of Agriculture granted 425 permits for imports of GM seed into South Africa, field trials and commercial releases. It is unashamed in its support of GM technology and sees it as a key growth area for the economy.

It is thus not concerned that farmers who use GM seed are locked into an industrial agricultural system dependent on ready-made packages of industrial inputs - a process that de-skills farmers. It also cannot see that these corporations are now moving away from the single trait GM technology on the market since 1998, to the production of seeds with "stacked" traits.

A single GM maize variety can contain up to eight transgenes - genes expressing for herbicide tolerance and insect resistance. Farmers are having to continuously upgrade and adapt to an externally driven agenda over which the government has no control.

Drought tolerance in GM maize is also being touted in The Time of Global Warming. Monsanto is feverishly conducting field trials in South Africa of four varieties of abiotic stress maize and is set to provide patented germ-plasm and transgenes to the highest bidder. At the same time, millions of dollars from the Bill and Melinda Gates and Howard G Buffet foundations are pouring into Africa for GM drought-tolerance research and development. GM drought tolerance is being offered to African countries as a panacea in the alleviation of poverty and hunger, and in combating climate change. This will

usher in massive field trials across Africa, finally pushing open hitherto closed doors to GM-based agriculture.

The Bill and Melinda Gates Foundation through the Warren Buffet Foundation, the Yara Foundation and the Soros Foundation has committed over \$300 million (R2.2 billion) to the New Green Revolution push in Africa. This is an agriculture system underpinned by the single-minded objective of increasing crop yields.

The term was coined by the US Agency for International Development (Usaid) in 1968, to describe breakthroughs in the development of seeds responding well to inorganic fertilisers and agro-chemicals.

The model was introduced in South-East Asia and India, heralding a historic shift in global farming away from local production for local consumption to large-scale production of mono-crops for the global market.

Cut from a similar cloth, the African Green Revolution discourse defines rural poverty in terms of insufficient productivity, which a technological "fix" comprised of high-yielding varieties, GM seeds and agro-chemicals will resuscitate.

A tendency of the Green Revolution is to myopically view food shortages as a shortcoming of food supply rather than a more complex phenomenon requiring a holistic understanding of why people go hungry. Nevertheless, this ideology has received the endorsement of the African Union, and is propagated through the New Partnership for Africa's Development. Heads of state in Africa have also thrown their weight firmly behind it.

The philanthropic money pouring into Africa is used to lay the groundwork for the industrialisation of African agriculture and creation of markets for agribusiness. In turn, this is paving the way for the emergence of a new rural private sector, agro-processors and exporters who contract small farmers to produce crops for them.

Added to the mix are the ongoing attempts by USAID to undermine the sovereignty of African governments by unduly influencing biosafety laws. It is only a matter of time before national biosafety spaces will acquiesce to the expanding needs of Monsanto, Syngenta and their ilk.

With the exception of South Africa, small-scale African agriculture predominates in Africa. African farmers practise smallholder diversified farming systems, which provide most of the food consumed, as well as a substantial share of cash crops. At least 17 distinct farming systems exist in Africa.

Crop diversity is at the centre of such systems and farmers typically cultivate 10 or more crops in diverse mixtures. Many small-scale farmers practise intercropping - they grow a variety of crops, often intermingled in the same field - as a way of safeguarding their

production from shocks such as drought and as a means of maintaining the fertility and productivity of the soil.

Small-scale farmers understand, from their vast experience, that these intercropping approaches allow them to spread risk in the event of crop failure, contribute to a more varied and balanced diet, maximise land use and so forth. Other widely used practices include seed saving, where a portion of the harvested crop is set aside for the next year's planting. Over years, these seeds have gradually adapted to the specific microclimate, and unique varieties have organically developed to withstand the environmental and pest pressures exerted on them.

Saved seed is a critically important resource that the poorest depend on to carry them from one year to the next.

The imposition of a technology and technological quick-fix solutions to what are inherently social, political, historical and economic crises within African agriculture will drastically transform African rural economies, social relationships, agrarian policies and, generally, the rural development trajectory in Africa. Agricultural production in Africa will increasingly be dominated by transnational seed, GM, agro-chemical and agribusiness. This will accelerate the destruction of traditional agricultural systems and facilitate the shift towards an externally oriented, input-based agricultural system.

Africa is heading for an ecological disaster. This includes genetic contamination by GM crops, loss of agricultural genetic diversity and the degradation and pollution of soils and water. It is anticipated that the health of Africans will deteriorate as they begin to consume more chemically infused and risky GM and Green Revolution food.

The Green and Gene revolutions are threats to the richness of African traditional agriculture. It stands in sharp contrast to the many successful African alternatives in organic agriculture, sustainable agriculture, agro-forestry, pastoralism, integrated pest management, farmer-led plant breeding, sustainable watershed management and many other agro-ecological approaches.

The widespread food riots that occurred last year were precipitated by a growing dissatisfaction and frustration among many of the world's poor about the "collateral" damage they incurred by the globalising forces of capital. A brutally frank appraisal is urgently required to dismantle the "structural meltdown" brought about by policies such as the Green Revolution, which transformed food that is sacred into a global commodity for speculation and bargaining.

This seems highly unlikely to happen. A significant report published last year by the International Assessment of Agricultural Science and Technology for Development is largely ignored by global policy makers.

Commissioned by the UN's Food and Agriculture Organisation and the World Bank, and compiled by over 400 experts over a period of four years of rigorous peer-reviewed research, the report makes some ground-breaking recommendations.

It suggests that food security, food sovereignty and sound environmental practices for current and future generations are inextricably linked to the adoption and enhancement of ecological agricultural systems, based on local knowledge.

Far from promoting GM technology, it highlights the many scientific uncertainties and socio-economic impacts with the technology. Although many countries have signed on to the report, South Africa has predictably refused to do so. The government turned its nose up at the final meeting of the International Assessment of Agricultural Science and Technology for Development held in Jo'burg last year, when it failed to send even a single official to represent it.

South Africa is a poor steward of Africa's biodiversity. It has granted close to 1 600 GM permits since 2003, yet its regulatory, biosafety and administrative capacities lag far behind. This situation is severely compounded by its failure to meet national and international obligations demanding transparency in decision-making, public participation and access by the public to adequate information.

Frustrated by the government's intransigence to meet these obligations, and as a last resort, the African Centre for Biodiversity lodged a complaint last month with the Compliance Committee established under the auspices of the UN's Cartagena Protocol on Biosafety, for its breach of international law.

Our government's honeymoon with big business is stale. It must throw its weight behind agricultural systems that support local production for local consumption, based on ecologically sound environmental practices and local knowledge.