

Who are developing GMOs?

The South African regulatory authorities have to date approved 18 different GM crop events for general release. These represent only three different crops, i.e. cotton, maize (both first approved in 1998) and soybean (first approved in 2001), and they share only two GM traits, i.e. insect resistance and herbicide tolerance, or both. Multinational seed companies are currently the only developers who have commercialised GM crops in South Africa.

The current limited number of crops and GM traits and the dominance of multinational companies is an international trend and is the result of many varying, practical obstacles to the market, including the technical challenges associated with the current technologies, intellectual property rights, regulatory complexity, high developmental costs and market uncertainty – issues typical of an emerging technology. In agriculture, GM applications have therefore largely been limited to large, international commodity products and universally important agronomic traits to help ensure an adequate return on investment for the technology developers.

Ironically, one of the general advantages of the use of GM technologies in agriculture is that it can effectively deliver a great variety of potential benefits (traits, choices, etc.) through a broad range of appropriate vehicles (crops, livestock, etc.) to diverse beneficiaries (communities, markets, etc.). However, this will only be realised when the above obstacles are overcome – part of Biosafety SA's mandate. An effective and sustainable national GM innovation system will allow the development of locally relevant products that can contribute to locally important priorities, such as food security and social development.

Public-private partnerships could play an important role in realising this vision. Such collaborative partnerships have led to the development of a disease resistant GM papaya cultivar that saved the industry in Hawaii and more recently the commercialisation of locally relevant GM maize and bean cultivars in Brazil. Many such collaborative GM research projects have been conducted across Africa on crops like maize, banana, cassava and sorghum, but none of these have been commercialised yet.

The [Water Efficient Maize for Africa \(WEMA\) project](#) is of particular significance to South Africa. In this project the national agricultural research organisations of Kenya, Malawi, South Africa, Tanzania and Uganda are collaborating with international research and funding organisations and private companies to develop locally adapted, drought tolerant maize cultivars. As part of the agreement between all the parties this technology will be made available royalty-free to smallholder farmers in these countries. The first licensed GM line for the project was approved for commercialisation in South Africa early in 2016.

Water Efficient Maize for Africa Project:

Environmental safety considerations: [Download brochure here](#)

The environmental safety of WEMA GM maize will be ensured before commercial release by evaluating the potential environmental risks including the potential impacts on the food web, the potential increase in the weediness of the crop, the potential impacts via pollen mediated gene flow and potential changes in farming practices.

Socio-economic considerations: [Download brochure here](#)

The sustainability of WEMA GM maize for use by smallholder farmers will be ensured by providing the technology royalty-free, using locally adapted maize varieties, providing agronomic support services and enabling farmers to generate an income through the selling of any surplus maize harvested.