

## Genetically modified crops in South Africa: a failure for farmers

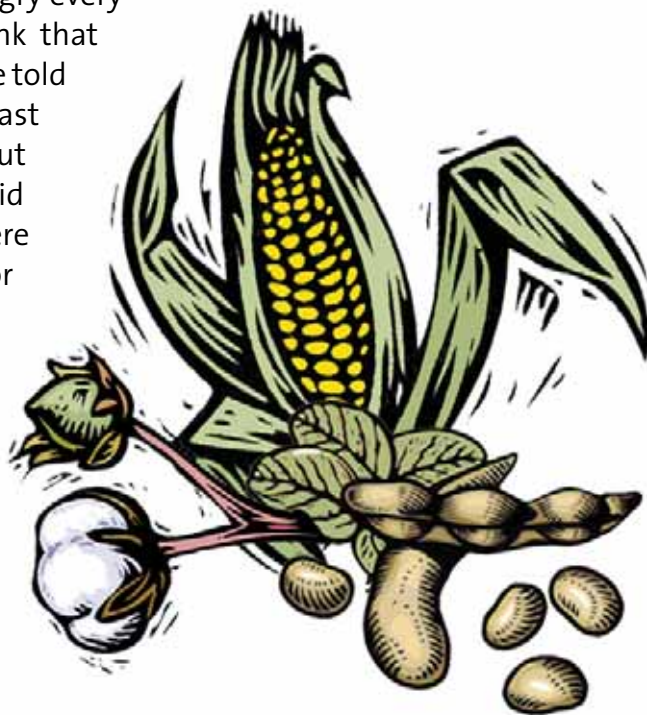
Anybody who has heard of genetically modified (GM) crops has also heard that we in Africa must accept them or face starvation. The primary message is that GM crops have been developed for the poor and hungry. This is a highly emotional argument put forward by the companies that develop GM technology. However, when we look into the past two decades of GM crop production we find that GM technology benefits the developers of GM technology, while farmers and society pay the price.

### GMOs do not feed the poor

Genetically modified crops were first planted in South Africa in 1998, when many other countries were rejecting them over concerns about their safety. At that time, no other African country would allow them. But the South African government assured people that GMOs were necessary to feed the nation. Is there any proof of that after fourteen years of production?

In 2009, about 14 million South Africans went to bed hungry every night! (That's about 24% of the population.) If you think that hunger is a rural issue, think again – in the same year we are told that 70% of the urban poor were food insecure. For the last three seasons South African farmers have produced about 3 ½ million more tons of maize than we need, but this did not reach hungry people. The highest rates of hunger were in the North Western Cape and the Free State - our major maize producing provinces!

With all of this maize around you would think it would be going cheap. However, people who bought a 5kg bag of mielie meal in 2012 paid 84% more than they did just 4 years earlier in 2008.



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Of course there are a lot of reasons for hunger in South Africa, such as unemployment, high transport costs and many other factors. But it just goes to show that the “GMOs will feed the world” argument is too simplistic and simply not true. It is too easy for government to rely on a “techno-fix” and ignore the real political issues underlying food insecurity, such as land reform, service delivery, poverty, unemployment and a whole host of other issues.

## GMOs do not help small-scale farmers

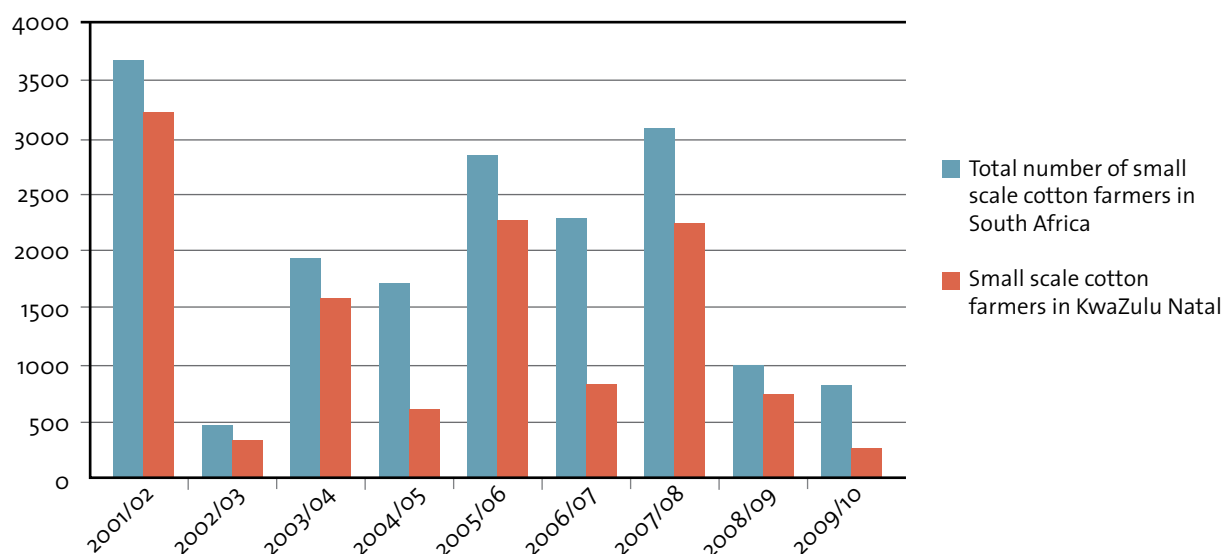
Genetically modified crops are designed to be used in large-scale industrial farming systems. In such systems, single crops are grown on endless hectares of land. Industrial farmers use vast land areas, expensive machinery, irrigation, fertilizers, pesticides and herbicides, and generally have access to credit and good markets.

### The Makhathini cotton fiasco

In 1997 Monsanto wanted to prove to the world that GMOs bring benefits to small-scale farmers. They were desperate for an African success story. They developed a project in Makhathini, Northern KwaZulu Natal, where they introduced GM cotton to small-scale farmers. They gave a handful of farmers a lot of support to grow their crops and made credit available to farmers in the area. Within 2 years almost 90% of small farmers in the Makhathini Flats were growing GM cotton.

Monsanto brought the media, government officials and development organisations from all over the world to visit and witness the farmers’ success. They flew local farmers around the world to speak to governments, the media and other farmers about their new wealth. Academics published papers about the suitability of GMOs for small scale farmers. Ten years later the public still remembers the “success” of Makhathini, but what has happened since then?

Number of small scale farmers growing cotton in South Africa and number of small scale farmers growing cotton in KwaZulu-Natal from 2001 to 2010



Source: derived from [www.cottonsa.org](http://www.cottonsa.org)

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At the height of Makhathini's success, in 2001/2002, there were over 3000 small scale-cotton farmers in KwaZulu Natal. By 2009/2010, most of them had abandoned cotton, there were only about 300 left in operation.<sup>1</sup>

One of the biggest problems with the project was that it was all based on credit. Farming with GM seeds is expensive because the seeds are more expensive and farmers must apply the correct pesticides and fertilizers. Farmers had to take out loans to begin production and these were provided by a private company called Vunisa, along with the Land Bank.

By 2002 there was a crisis in Makhathini – farmers could not pay back their loans and an amount of R22 million was outstanding. You will see on the graph that in the 2002/03 season, very few farmers planted cotton. Vunisa was crippled and there were no more loans forthcoming. At this point, another company – the Makhathini Cotton Company (MCC) stepped in to become the sole cotton buyer. The MCC created new rules for buying the cotton. They would only buy in bulk and would only buy from farmers whose cotton was packed in the specially marked bags farmers received when they bought Bt cotton seeds at the local dealer. In some cases the MCC simply leased land from farmers and the company did the farming. The MCC began to develop irrigation systems in the area in the hopes of developing the cotton industry.

In 2005/06 the KwaZulu-Natal Department of Agriculture made R6.4million available for loans and you will see in the graph that farmers tried to grow cotton again. Once this credit line dried up the numbers of farmers planting cotton dropped once more, never to be revived again. The truth about Makhathini is that it was a failure.

## The Massive Food Production Programme

<sup>1</sup>Other attempts to introduce small-scale farmers to GM technology have also failed. An example is the Massive Food Production Programme (MFPP) operating in the Amathole District of the Eastern Cape as part of the provincial government's Growth and Development Plan (PGDP). Their aim is to develop subsistence farmers into commercial farmers. Through this programme farmers were encouraged to shift away from traditional agriculture and adopt technology packages of GM cotton, maize and soya; purchase of expensive equipment and access to credit. The Uvimbo bank purchased seed and supplies directly from suppliers to give to farmers, so in most cases farmers were unaware that they were growing GMOs. Research into the programme found that switching to cash crops did not improve household livelihoods. One problem among many, was that farmers could not get good prices as they have very little bargaining power.

Technology is a part of the solution but it must fit within a well thought out development and delivery programme that ensures people can make their own decisions, manage their own systems and access the resources they need to do so.

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## GMOs puts big farmers at risk

South Africa has a well developed industrial agricultural system and GMOs are designed to suit this system. Have large scale farmers benefited from GMOs?

Commercial agriculture is a risky business because farmers have to deal with uncertain weather conditions and volatile markets. Farmers have become very vulnerable in a very risky game. In the last sixteen years about 20 000 commercial farmers left the sector; about 40 000 still remain.

Commercial farmers are steadily receiving less for their produce on the market but the costs of their inputs are steadily on the rise. GM Maize farmers in particular have really felt the rising cost of seed pinching their profit margins in recent years. The price of yellow GM maize seed was 35% higher in 2011 than it was in 2008. In the same period the cost of white GM maize seed increased by 30%.

During 2010 South African farmers produced a bumper harvest and a record surplus. This sounds like good news but more maize on the market means lower prices. The extremely low prices that farmers could get for their maize put about 30% of maize farmers in danger of bankruptcy.

Other problems with GM maize should be worrying commercial farmers. A study on the Bt maize variety called MON810 was recently published by the South African National Biodiversity Institute (SANBI). They found that in some regions, insects are beginning to develop a resistance to the Bt; certain insects should die when they eat the maize but this is not happening. This means that farmers can no longer rely on their crop being protected by the GM technology.



The industry is responding to resistance by introducing crops with many different GM genes stacked in one variety. Most of the GM crops that are growing in South Africa now are “stacked” varieties. This makes them more expensive for farmers. There are

also scientific concerns about their safety because they are even more complex than single trait varieties. (See the factsheet ***Monsanto – waging a war on farmers and nature*** for more about stacked varieties).

In 2009, three GM maize varieties failed to pollinate (the varieties are called MON810, NK603 and stacked MON810xNK603). Over 200 000 hectares of maize fields did not produce cobs. Monsanto claimed that it was the breeding process, not the GM technology that caused the problem. No independent inquiries were carried out by government authorities, despite numerous requests by the ACB.

One of the reasons that farmers use GMOs is because they believe that they know what crop will result from the seeds they purchase even at considerable cost. If GMOs are no longer reliable, farmers put their livelihoods at considerable risk.

# GMOs in South Africa Series

## References

Unless noted otherwise, information in this factsheet comes from the in-depth publication by the African Centre for Biosafety, “Hazardous Harvest: Genetically modified crops in South Africa, 2008 – 2012” available at <http://www.acbio.org.za/images/stories/dmdocuments/Hazardous%20Harvest-May2012.pdf>

1 <http://www.cottonsa.org.za> Small-scale farmer cotton farmer development accessed 8 August 2011

i Masifunde Education and Development Project Trust. (2010). **Threats to the Food Security and Food Sovereignty in the Eastern Cape. Impacts of the Massive Food Production Programme (MFPP), GMOs and cash crops in four villages in the Amathole District Municipality.**