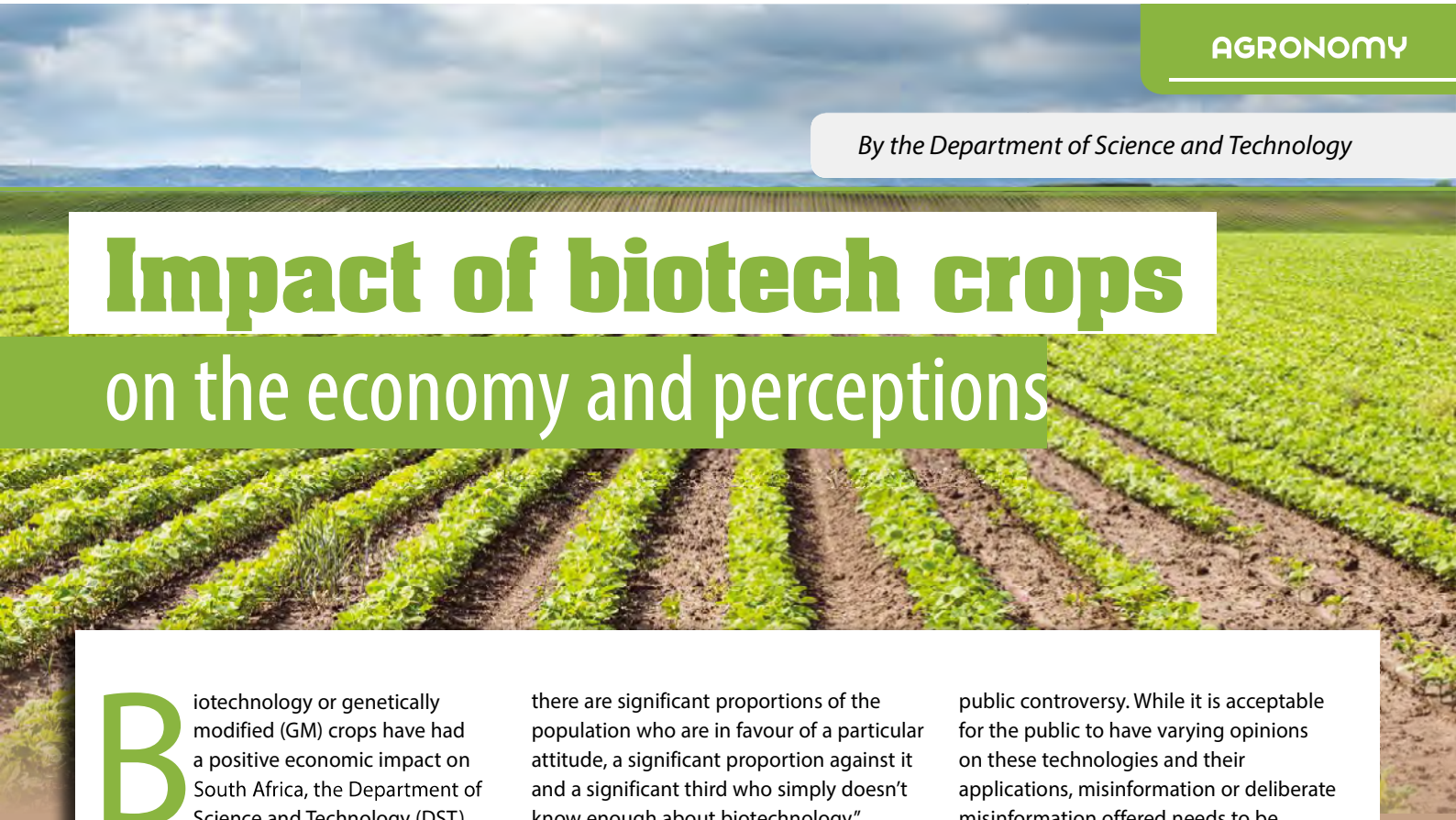
*By the Department of Science and Technology*



# Impact of biotech crops on the economy and perceptions

Biotechnology or genetically modified (GM) crops have had a positive economic impact on South Africa, the Department of Science and Technology (DST) director-general, Dr Phil Mjwara, said upon releasing the second survey on the 'Public Perceptions of Biotechnology in South Africa'. The survey was conducted by the Human Sciences Research Council (HSRC).

"It is estimated that the economic gains from biotech crops in South Africa for the period 1998 to 2013 was US$1,6 billion, and US$313 million for 2013 alone. In 2014, the country was growing more than 2,7 million hectares of GM crops. Approximately 86 and 90% of maize and soya produced, respectively, are GM. Cotton is 100% GM," he said.

## Familiarity with the technology

Dr Michael Gastrow, chief research specialist at the HSRC, said one of his observations from the survey, which was conducted among 2 900 adults in 500 locations across the country, was that there was a better understanding of biotechnology among the younger generation, and that attitudes regarding this tend to be more positive with the youth. Dr Gastrow also said that the privileged – with a higher level of education and those with a better living standard – have more knowledge of biotechnology.

"When you investigate attitudes toward biotechnology in terms of health, safety, environment and economic contribution, there are significant proportions of the population who are in favour of a particular attitude, a significant proportion against it and a significant third who simply doesn't know enough about biotechnology."

Most South Africans are aware of the fact that they consume GM food. The survey revealed that 48% were aware that they were ingesting GM organisms, while 49% believed it was safe to do so. The first survey conducted in 2004 revealed that public familiarity with the term 'biotechnology', stood at only 21%, while public awareness of GM consumption was at 13%. The latest survey commissioned by the department last year indicated that these figures have tripled to 53 and 48% respectively.

Dr Gastrow said there has also been a major increase in attitudes that favour the purchasing of GM foods. The proportion of the public that would purchase GM foods on the basis of health considerations has increased from 59 to 77%, while that of cost considerations increased from 51 to 73%, and environmental considerations from 50 to 68%. GM forms of maize, soya bean and cotton have been approved for commercial production in South Africa, and these crops are now established in certain parts of the country.

## Creating awareness

Dr Mjwara said that while GM crops have been approved and adopted in South Africa and abroad by science-based regulatory systems and producers, they still remain a source of apparent public controversy. While it is acceptable for the public to have varying opinions on these technologies and their applications, misinformation or deliberate misinformation offered needs to be countered with scientific evidence.

## Precautionary approaches

"This controversy contributes to extreme precautionary approaches by certain countries, resulting in increased regulatory burdens and delays, with associated development costs, timelines and risks that have limited the number of countries adopting the technology – including nations in Africa. It has limited the application of the technology to relatively few crops with limited traits, and only a handful of developers – usually multinational companies – have the capability and the resources to commercialise GM crops," Dr Mjwara said. To combat this perception, the DST has established the Public Understanding of Biotechnology (PUB) programme, which seeks to promote awareness and understanding of biotechnology to the broader public.

The PUB programme has been broadly successful in a number of interventions, including developing media roundtables, critical thinker sessions, exhibitions, training of media on science and technology issues and the development of biotechnology in school curricula. However, it has had a very limited ability to respond to inaccurate, misleading or vague media reports via newspaper, television and radio.