

# From South Africa: ISAAA's 2009 report is fundamentally flawed

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The African Centre for Biosafety (ACB) is a non-profit organization, based in Johannesburg, South Africa. It provides authoritative, credible, relevant and current information, research and policy analysis on genetic engineering, biosafety, agrofuels and the Green Revolution push in Africa.

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## INTRODUCTION

On the 9th March 2010 and at a press conference in Johannesburg South Africa, the industry-sponsored International Service for the Acquisition of Agri-biotech Applications (ISAAA) will announce the extensive adoption of Genetically Modified (GM) crops during 2009. It will present impressive figures showing a ballooning number of hectares planted to GM crops globally, including South Africa. It will tell the South African media of the phenomenal success of GM crops in South Africa based on the single minded focus on figures: that South African farmers are growing 1.8 million ha of GM maize, soya and cotton.

These numbers appear impressive - as long as one does not look too closely. The African Centre for Biosafety (ACB) has looked closely, and in this briefing present a more sobering picture of crop failures in South Africa, biosafety incapacity on the part of South African regulators, the rejection of GM potato (the first commercial GM application ever to be rejected by a pro GM government), and the abandonment by small scale farmers of GM cotton. It also questions ISAAA's data pertaining to Egypt.

Our briefing also points out that only 2.7% of global agricultural land is in fact planted to GM crops, with the majority being grown in the United States, Brazil and Argentina. Together, these three countries account for 79.6% of the GM crops grown globally in 2009. It also shows that only small "gains" were made in India, Canada, Argentina and South Africa; while China, Paraguay and Europe all recorded a drop in GM crop plantings and Australia remained static<sup>1</sup>. It is also significant to note the spectacular rejection, by the Indian authorities last month, of a commercial release application for Bt Brinjal.

In reality, the numbers of hectares planted to GM are of less importance than questions about food security and sovereignty, equity and justice - real issues that industry obfuscates with their single-minded fixation on percentages and hectares and industry profits.

## ISAAA'S HALF BAKED REPORT ON SOUTH AFRICA

The ISAAA's report with regard to South Africa's expansion of GM plantings relies on data provided by FoodNCropBio, a private consultancy firm in South Africa who supplies services to the biotech industry. FoodNCropBio's figures are difficult to verify as there is no official record keeping by the government on the number of hectares grown to GM crops in the country. According to the Crops Estimates Committee, which operates under the aegis of the Department of Agriculture, Fisheries and Forestry (DAFF), the non-segregation of GM and non-GM grains at silos makes the keeping of separate records impossible.<sup>2</sup> FoodNCropBio has compiled its figures for South Africa by way of extrapolation from the confidential records of seed sales it has accessed from seed companies. FoodNCropBio's figures are estimates based on seed orders and the 'intention to plant'. These are the figures that the ISAAA have come to rely on<sup>3</sup>.

FoodNCropBio's 2007/2008 report to the Maize Trust states that GM maize is comprised of 56% of the total maize plantings for the growing season, while the seed industry umbrella body, the South African National Seed Organisation (SANSOR), indicate that the GM share was only 42% in

their annual report for the same period: a substantial difference in the number. How reliable are FoodNCropBio's figures?<sup>4</sup>

## **Problems with GM maize**

### **Crop Failures**

The ISAAA's report is ominously silent about the crop failures that took place in South Africa during the 2008/09 growing season. These failures were caused by Monsanto's GM varieties, MON 810, NK 603 and MON 810 x NK 603. These GM varieties failed to pollinate, leaving up to 200 000 ha of maize fields barren.<sup>5</sup> When these failures occurred, the South African government's response was to give Monsanto free reign to clean up the mess. Monsanto speedily compensated the effected farmers - and silencing them with non-disclosure agreements- paid out \$42 million.<sup>6</sup> It also hastily submitted a cursory 3 page report blaming the failure on the hybridisation process. The Executive Council of the GMO Act, which licensed these varieties, accepted Monsanto's explanation without any independent verification or investigation, despite repeated requests by the ACB for it to do so.

### **The health of South Africans overlooked**

South Africa has the dubious distinction of being the only country in the world that has allowed the genetic modification of her staple food, maize. FoodNCropBio makes the disingenuous statement in its annual report to the Maize Trust that, "some 4.5 million hectares of GM maize were grown over the past nine years, all without any substantiated incidence of damage to human or animal health, or to the environment."<sup>7</sup> Unfortunately this 'absence of adverse effects' is more due to a "don't look don't find" attitude on the part of the South African government and industry, than the inherent safety of the product.

The South African government has done no post-commercial release monitoring of GM maize in particular, on human health in South Africa. The absence of mandatory labelling of GM foods since its introduction 1999 does not allow consumers the right to choose or know what they're eating and therefore cannot trace or report illnesses that may arise due to consuming GM maize. Although the Consumer Protection Act, 2009 provides for enabling provisions regarding the mandatory labelling of GM foods, the regulations that are required to make this a reality are still far from being finalised.

### **No biosafety data available on impacts on the environment**

Not a single environmental impact assessment (EIA) has to date been carried out to determine the impact of GM crops on the environment. In fact, it took a full 11 years after GMOs were introduced into South Africa, before the South African National Biodiversity Institute (SANBI) was mandated to develop a risk analysis and monitoring framework for GMOs.<sup>8</sup> Currently SANBI is carrying out research into the environmental impact of just 1 variety of GM maize, namely, Monsanto's GM maize, MON810 and these results are yet to be released. At the end of 2008, regulatory authorities introduced ecological risk assessment (ERA) guidelines and implemented a monitoring plan requirement for all general release applications.<sup>9</sup> However, it remains to be seen whether these will indeed inform policy and decision making towards the conducting of the very first EIA in the history of GMO plantings in South Africa.

If indeed 1.8 million ha of GM maize, soya and cotton are growing in South Africa, as the ISAAA reports, the alarming lack of political will for monitoring should be the focus of the discussion, rather than the celebration of its expansion. The aggressive push by the biotech industry to

introduce GM crops into countries where the necessary biosafety measures are not yet in place is highly unethical, posing risks to health, environment and socio-economic well-being. This is quite apart from questions as to who profits from GM crops in South Africa.

**Southern Africa does not import GM maize from South Africa**

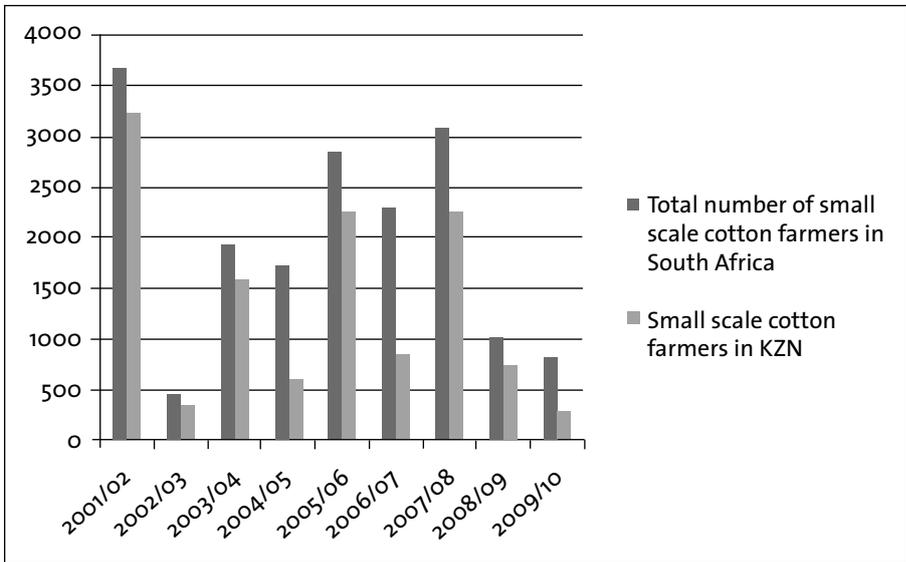
It must be noted that the sub-Saharan African countries, which are the main export destinations of South African maize, do not currently allow the importation or domestic production of GM maize.<sup>10</sup> As a result local producers have had to develop their own methods of segregation and identity preservation, as silos in South Africa are not segregated. These producers must bear the cost of keeping their produce GM-free. Different countries have different requirements for the certification of non-GM maize, while some will allow GM maize in a milled form. Indeed, the premiums for non-GM maize are increasing.<sup>11</sup>

**Small scale farmers abandon GM cotton**

Cotton production is a relatively small agronomic activity in South Africa. Nevertheless, ISAAA will make much of the almost 100% adoption rate of GM cotton in South Africa. This, however, belies the reduced farmer choice of cotton cultivars available due to the massive consolidation taking place in the cotton seed industry and lack of funding for public research. Cotton SA, service provider for the cotton industry recommended only 6 cultivars for the 2009/10 growing season<sup>12</sup>, five of which are distributed by Delta & Pineland. Of the five varieties, 3 are GM. Only one variety, Acala OR3, has been developed by the Agricultural Research Council specifically and exclusively for conditions in the Lower Orange River region.

Small-scale farmers play a minor role in South African cotton production and their numbers have dropped significantly from year to year. According to Cotton SA, 450 small scale farmers of a total of 950 cotton famers for the whole country did not grow any GM cotton during the 2009 growing season.<sup>13</sup> An analysis of the number of small scale farmers growing cotton from year to year shows a complete dropping off since the 2007/o8 season. Over the years, these small-scale farmers have suffered crippling debt and low market prices for cotton.

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



<sup>14</sup>Derived from Cotton SA

## The rejection of GM potatoes

The ISAAA report obviously does not mention the South African government's rejection of a commercial release application for GM potatoes. The refusal was based on no less than 11 biosafety, socio economic and agronomic concerns.<sup>15</sup> The precautionary decision taken by the EC concluded that the toxicology studies of the applicant, the Agriculture Research Council, were inadequate, scientifically poorly designed and fundamentally flawed. It was unconvinced that the GM potato would benefit small holder farmers and found that the Potato Tuber Moth, which the GM potato is designed to target, is a low priority for most farmers<sup>16</sup>. The ARC has appealed this decision but is unlikely to be successful.

## DUBIOUS FIGURES FOR EGYPT

Each year when the ISAAA announces their global figures of burgeoning GM plantings, eyebrows are raised around the world and the question also asked is "where *does* it get its data from?" This is a pertinent question in the case of its figures for Egypt for instance.

In its 2009 report, ISAAA claims that Egypt cultivated 0.05 million hectares of GM maize in 2009.<sup>17</sup> However, a USDA report dated 15 July 2009 appears to contradict this by stating categorically that Egypt has not released any commercial transgenic crops to date and that although policy exists on the importation of GMOs, Egypt has yet to finalise her national biosafety legislation.<sup>18</sup>

The USDA report states further:

"Although Egypt has planted GM corn and cotton in several regions throughout the country to conduct field trials, the situation of biotechnology in Egypt is rather complex in that stalled progress on commercial planting approval for Mon 810 results from bureaucratic territoriality, lack of institutional development, mistakes on the commercial side, the Parliament's involvement, in addition to some political issues."<sup>19</sup>

Perhaps the ISAAA is reporting the hectares of maize field trials growing in Egypt or are reporting on illegally planted GM maize? The fact that a great deal of GM experimentation involving maize, cotton, potato, wheat, rice, squash, sugarcane and figs<sup>20</sup> is taking place in Egypt in the absence of any biosafety legislation is probably more relevant than alleged hectares under GM commercial cultivation.

## THE REALITY OF GM PLANTINGS GLOBALLY

### Who is growing all the GMOs globally?

ISAAA's report states that 134 million hectares of biotech crops were adopted in 2009, indicating an 80-fold increase from 1996 to 2009 and a year to year growth of 9 million hectares or 7%.<sup>21</sup>

In fact, only 2.7% of global agricultural land is planted to GM crops<sup>22</sup> and the majority of that is grown by the largest user of GM crops - the United States, who recorded 64 million hectares in 2009. Along with Brazil and Argentina, growing 21.4 and 21.3 million ha of GM maize, cotton and soybean respectively, these 3 countries account for 79.6% of the GM crops grown globally in 2009.<sup>23</sup>

While substantial hectares under GM crops grew in the United States and Brazil, only small "gains" were made in India, Canada, Argentina and South Africa; while China, Paraguay and Europe all recorded a drop in GM plantings with Australia remaining static.<sup>24</sup>

### GMOS play no role in food security, poverty alleviation

GM herbicide tolerant soybean continued to be the principle biotech crop in 2009, occupying 69.2 million ha, followed by GM maize at 41.7 million ha.<sup>25</sup> However, both these crops are principally produced for animal feed. In 2007 for example, South Africa imported 1 887 000 tonnes of GM yellow maize from Argentina, all bound for coastal livestock feed manufacturers.<sup>26</sup> The next most popular GM crop is cotton, pegged at 16.1 million ha.<sup>27</sup> The vast majority of GM production does little to address food security and in fact exacerbates poverty and hunger as the technology is suited really only for large scale capital intensive production.

At the time of writing, the Food and Agriculture Organisation (FAO) sponsored a conference on Biotechnology for Developing Countries<sup>i</sup> held in Mexico. A small scale farmer from the Philippines, Isidoro Ancog, representing the Asian Farmers Alliance for Sustainable Rural Development (AFA), announced that she would be on hunger strike for the duration of the conference in protest. In her impassioned speech on the destructiveness of GMOs for resource poor farmers of the world she said:

"My third FEAR is centred on the title of this first plenary; "Targeting biotechnologies to the poor". I do not believe that the poor people are well represented in this room especially from Asia where I came from. As a poor farmer in a remote province of Bohol, Philippines, I am extremely threatened rather than happy.... Why am I a target to technologies that are designed without my knowledge? That I do not really need?"<sup>28</sup>

## **GM crops cause massive environmental damage**

Herbicide tolerant transgenic crops cause the destruction of biodiversity on a massive scale. It has resulted in an increased use of chemicals in agriculture over the last 13 years. A recent study published in the United States shows that “compared to pesticide use in the absence of GE crops, farmers applied 318 million more pounds of pesticides over the last 13 years as a result of planting GE seeds. This difference represents an average increase of about 0.25 pound for each acre planted to a GE trait”.<sup>29</sup>

Industrial agriculture, which is the agricultural system in which GMOs are located, is heavily dependent on the oil industry as chemicals and fertilisers are by-products of the oil industry. It promotes the use of mechanisation (needing fossil fuels) and the production of crops for global markets, which entails the mass movement of commodities around the globe, using enormous amounts of fossil fuels.

## **CONCLUSION**

The ISAAA figures will likely be trumpeted around the world by the global media as a massive success story and a compelling argument in favour of GMOs in addressing world hunger and the environmental crisis.

However, a report commissioned by the FAO and World Bank released in 2008, but since buried as an inconvenient truth<sup>30</sup> outlines the solutions to these problems. The report was produced by the International Assessment of Agriculture Knowledge, Science and Technology for Development (IAASTD), and strongly recommends a shift in global agriculture policy that supports ecological farming practices, small-scale producers and local production for local consumption. The IAASTD highlights the fact that rural development problems are rooted in the conditions associated with environmental sustainability, access to water, land and energy and food quality. It also recognises that the cause and persistence of poverty is associated with power relations and the unequal distribution of resources.<sup>31</sup> The promotion of genetically modified crops, which are resource hungry, capital intensive and protected by intellectual property rights, is the exact opposite approach to the one applauded by the IAASTD and its cohorts.

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