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Report Highlights:
The production area of biotech crops in South Africa continued to expand in 2011 to reach 2.3 million hectares, making South Africa the ninth largest producer of biotech crops in the world. South Africa's new Consumer Protection Bill came into effect on April 1, 2011. The new act requires virtually every product label in South Africa's food and beverage industry to be changed to comply with mandatory GMO labeling requirements. The intent of the law is to prevent exploitation or harm of consumers and to promote the social well-being of consumers. In recent events, Business Unity South Africa organized a meeting with the Commissioner of the Consumer Protection Act on 29 May 2012, to discuss the current challenges pertaining to the regulations of the Act, including GM labeling. The Commissioner acknowledged the inherent challenges pertaining to definitions and interpretations of the existing GM regulations. As a result, the Commissioner has been collaborating with the Departments of Health, Agriculture, Forestry and Fisheries, Trade and Industry and Science and Technology in an effort to develop more sensible guidelines on GM labeling. The publication of the draft GM labeling guidelines is envisaged by the end of July 2012.

Sections I, II, III and V were updated.

Section I. Executive Summary:

South Africa possesses a highly advanced agricultural industry based *inter alia* on first-generation biotechnologies and effective plant breeding capabilities. The country has been involved with biotechnology research and development for over 30 years and will continue to be the biotechnology leader on the Africa continent. The production area of biotech crops in South Africa continued to expand in 2011 to reach 2.3 million hectares, making South Africa the ninth largest producer of biotech crops in the world, illustrating that South African farmers have adopted biotech and the benefits thereof. Genetically Modified (GM) corn plantings represent 80 percent of total biotech planting in South Africa, followed by GM soybeans (approximately 19 percent) and GM cotton (approximately one percent). Almost 72 percent of corn plantings, 85 percent of soybean plantings and all cotton plantings in South Africa are GM. All of the GM events that are currently commercially produced in South Africa were developed in the United States. However, due to the fact that that the United States has approved corn events that are not yet approved in South Africa, United States commercial corn is not authorized to enter into South Africa.

South Africa is a net exporter of agricultural, fish and forestry products. The Netherlands the United Kingdom and Zimbabwe are the three major destinations of South Africa's agriculture, fish, and forestry products and represents almost a quarter of total exports. South Africa's exports of agricultural, fish and forestry products to the United States were valued at US$252 million in 2011, basically at the same level as 2010, and account for 3 percent of total agricultural exports by South Africa. Wine (US$39 million), citrus (US$37 million), and nuts (US$29 million) were the major items exported to the United States.

South Africa's major partner for importing agriculture, fish, and forestry products is Argentina, which accounts for 12 percent of imports. Argentina is followed by Brazil, Thailand and the United States. Imports from the United States increased by 58 percent to a record US$427 million in 2011 and represents more than six

percent of South African imports of agriculture, fish, and forestry products. The increase in imports from the United States was due primarily to an increase in wheat imports. Wheat (US$168 million), miscellaneous edible preparations ($40 million) and spirituous beverages (US$30 million) were the major products imported from the United States by South Africa in 2011.

On April 1, 2011, the South African Department of Trade and Industry (DTI) published regulations in the Gazette that brought the new Consumer Protection Act (68/2008) into enforcement. The primary purpose of the act is to prevent exploitation or harm of consumers and to promote the social well being of consumers. However, according to the act mandatory labeling of GMOs is required for all domestic and imported food products. In recent events, Business Unity South Africa (BUSA) organized a meeting with the Commissioner of the Consumer Protection Act on 29 May 2012, to discuss the current challenges pertaining to the regulations of the Act, including GM labeling. The BUSA delegates tabled the several concerns regarding GM labeling to the Commissioner.

The Commissioner replied by acknowledging the inherent challenges pertaining to definitions and interpretations of the existing GM regulations as well as disparities leading to the final draft. As a result, the Commission has been collaborating with the Departments of Health, Agriculture, Forestry and Fisheries, Trade and Industry and Science and Technology in an effort to develop more sensible guidelines on GM labeling. The Commissioner furthermore committed that the industry would be consulted on draft GM labeling guidelines before publication dated envisaged to be the end of July 2012.

SA requires an additional approval for GM seeds that combines two already approved traits, such as herbicide tolerance and insect resistance. This requirement means that companies effectively need to start from the beginning of the approval process for stacked events, even when the individual traits have already been approved. The Executive Council has reconfirmed in its first meeting of 2012 that each stack event must be subjected to a separate safety assessment as per the

GMO Act.

FAS/Pretoria, as part of a panel of speakers, was invited to brief the South African Parliamentary Portfolio Committee on Agriculture on the United States experience with biotechnology adoption. Unexpectedly, the Portfolio Committees for Rural Development, Health, and the Environment also attended. This marked the first time FAS/Pretoria had addressed the Parliamentary committees that oversee the priorities and budgets of their respective departments for biotech-related rule-making.

Section II. Plant Biotechnology Trade and Production:

Current Status

Table 1 shows all the GMO events that have been approved for general release by South Africa under the Genetically Modified Organism Act of 1997. This means these events can be used for commercial plantings, for food and/or feed and the importation and exportation of these events are allowed. All the GMO events that are currently commercially available in South Africa were developed in the United States. These events is present in three crops namely, corn, soybeans and cotton.

Table 1: GMO events approved for general release in South Africa

Company	Event	Crop	Trait	Year approved
Syngenta	BT11xGA21	Corn	Insect resistant Herbicide tolerant	2010
Syngenta	GA21	Corn	Herbicide tolerant	2010
Monsanto	MON89034xNK603	Corn	Insect resistant Herbicide tolerant	2010
Monsanto	MON89034	Corn	Insect resistant	2010
Monsanto	Bollgard II x RR flex (MON15985 x MON88913)	Cotton	Insect resistant Herbicide tolerant	2007

Monsanto	MON88913	Cotton	Herbicide tolerant	2007
Monsanto	MON810 x NK603	Corn	Insect resistant Herbicide tolerant	2007
Monsanto	Bollgard RR	Cotton	Insect resistant Herbicide tolerant	2005
Monsanto	Bollgard II, line 15985	Cotton	Insect resistant	2003
Syngenta	Bt11	Corn	Insect resistant	2003
Monsanto	NK603	Corn	Herbicide tolerant	2002
Monsanto	GTS40-3-2	Soybeans	Herbicide tolerant	2001
Monsanto	RR lines 1445 & 1698	Cotton	Herbicide tolerant	2000
Monsanto	Line 531/Bollgard	Cotton	Insect resistant	1997
Monsanto	MON810/Yieldgard	Corn	Insect resistant	1997

Note: *The events can be used for importation/exportation, commercial plantings ,and for food and/or feed*

In Table 2, GMO events that have received commodity clearance are indicated. Commodity clearance means the importation of these events for the use as food and/or feed are allowed. In 2011, 24 new events receive commodity clearance. The events cover five crops, namely, corn, soybeans, cotton, rice and rape seed.

Table 2: GMO events with commodity clearance

Company	**Event**	**Crop**	**Trait**	**Year approved**
Syngenta	MIR604	Corn	Insect resistant	2011
Syngenta	BT11 x GA21	Corn	Insect resistant Herbicide tolerant	2011
Syngenta	BT11 x MIR604	Corn	Insect resistant Herbicide tolerant	2011
Syngenta	MIR604 x GA21	Corn	Insect resistant Herbicide tolerant	2011
Syngenta	BT11 x MIR604 x GA21	Corn	Insect resistant Herbicide tolerant	2011
Syngenta	BT11 x MIR162 x MIR604 x GA21	Corn	Insect resistant Herbicide tolerant	2011
Syngenta	BT11 x MIR162 x	Corn	Insect resistant	2011

	GA21		Herbicide tolerant	
Syngenta	BT11 x MIR162 x TC1507 x GA21	Corn	Insect resistant Herbicide tolerant	2011
Pioneer	TC1507 x NK603	Corn	Insect resistant Herbicide tolerant	2011
Pioneer	59122	Corn	Insect resistant	2011
Pioneer	NK603 x 59122	Corn	Insect resistant Herbicide tolerant	2011
Pioneer	356043	Soybean	Herbicide tolerant	2011
Pioneer	305423	Soybean	Higher oleic acid content Herbicide tolerant	2011
Pioneer	305423 x 40-3-2	Soybean	Higher oleic acid content Herbicide tolerant	2011
DowAgroScience	TC1507 x 59122	Corn	Insect resistant Herbicide tolerant	2011
DowAgroScience	TC1507 x 59122 x NK603	Corn	Insect resistant Herbicide tolerant	2011
Bayer	LLRice62	Rice	Herbicide tolerant	2011
Bayer	LLCotton25	Cotton	Herbicide tolerant	2011
Monsanto	MON863	Corn	Insect resistant	2011
Monsanto	MON863 x MON810	Corn	Insect resistant	2011
Monsanto	MON863 x MON810 x NK603	Corn	Insect resistant Herbicide tolerant	2011
Monsanto	MON88017	Corn	Insect resistant	2011
Monsanto	MON88017 x MON810	Corn	Insect resistant	2011
DowAgroScience & Monsanto	MON89034 x TC1507 x MON88017 x 59122	Corn	Insect resistant Herbicide tolerant	2011
Monsanto	MON810 x NK603	Corn	Insect resistant Herbicide tolerant	2004
Monsanto	MON810 x GA21	Corn	Insect resistant Herbicide tolerant	2003
Pioneer Hi-Bred	TC1507	Corn	Insect resistant Herbicide tolerant	2002
Monsanto	NK603	Corn	Herbicide tolerant	2002
Monsanto	GA21	Corn	Herbicide tolerant	2002
Syngenta	Bt11	Corn	Insect resistant	2002
AgrEvo	T25	Corn	Herbicide tolerant	2001
Syngenta	Bt176	Corn	Insect resistant	2001
AgrEvo	Topas 19/2, Ms1Rf1, Ms1Rf2, Ms8Rf3	Oilseed rape	Herbicide tolerant	2001
AgrEvo	A2704-12	Soybean	Herbicide tolerant	2001

Notes: *Excludes events that have obtained general release clearance before commodity clearance; the events can be used for importation as food or feed*

Corn

Corn is the main field crop produced in South Africa and is used for both human consumption (mainly white corn) and animal feed (mainly yellow corn). The first GM corn event (insect resistant) approved in South Africa was in 1997 and since then there was a progressive and steady increase in GM corn plantings. Table 3 illustrates the plantings of GM corn in South Africa over the past 7 years. GM corn plantings increased from 28 percent of total corn planted in the 2005/06-production year to 72 percent in the 2011/12-production year. Of the 1.9 million hectares of corn planted with GM seed in the 20011/12-production year, single Bt comprised 45 percent, herbicide tolerant 14 percent and stacked Bt and herbicide tolerant 41 percent (see also Table 4). White corn plantings in the 2011/12 production year were 1.6 million hectares of which 72 percent or 1.1 million hectares were GM seed. Yellow corn plantings were 1.0 million hectares of which, also 72 percent, or 747,000 hectares were GM seed.

Table 3: Planting of GM corn in South Africa over the past 7 years

	Area planted '000 ha		
Production years	**White corn**	**Yellow corn**	**Total corn**
2005/06			
Total	1,033	567	1,600
Biotech	281	175	456
% of total	27%	30%	28%
2006/07			
Total	1,625	927	2,552
Biotech	851	528	1,379
% of total	52%	56%	49%
2007/08			
Total	1,737	1,062	2,799
Biotech	975	588	1.563
% of total	56%	55%	55%
2008/09			
Total	1,489	939	2,428
Biotech	892	724	1.616
% of total	59%	77%	66%

2009/10			
Total	1,720	1,023	2,743
Biotech	1,212	667	1,879
% of total	70%	65%	68%
2010/11			
Total	1,418	954	2,372
Biotech	1,060	765	1,825
% of total	75%	80%	77%
2011/12			
Total	1,564	1,038	2,602
Biotech	1,126	747	1,873
% of total	72%	72%	72%

Source: FoodNCropBio supported by the Corn Trust

Table 4: Percentage of the biotech corn crop planted with the different traits the past 7 years

Production year	White corn	Yellow corn	Total corn
2005/06			
% Insect Resistant	79	61	72
% Herbicide Tolerant	21	39	28
% Stacked	0	0	0
2006/07			
% Insect Resistant	84	72	80
% Herbicide Tolerant	16	28	20
% Stacked	0	0	0
2007/08			
% Insect Resistant	71	69	71
% Herbicide Tolerant	22	27	24
% Stacked	6	4	5
2008/09			
% Insect Resistant	66	63	64
% Herbicide Tolerant	17	18	17
% Stacked	19	19	19
2009/10			
% Insect Resistant	81	49	70
% Herbicide Tolerant	10	23	14
% Stacked	9	28	16
2010/11			
% Insect Resistant	50	39	46

% Herbicide Tolerant	9	21	13
% Stacked	41	41	41
2011/12			
% Insect Resistant	46	44	45
% Herbicide Tolerant	10	20	14
% Stacked	44	36	41

Source: FoodNCropBio supported by the Corn Trust

The long term trend in corn production indicates South Africa is producing more corn on less area (see Figure 1). The main reasons for this trend are more efficient and effective farming methods and practices, the use of less marginal land in the corn production systems, better seed cultivars, and the adoption of biotechnology. Figure 2 illustrates another remarkable trend, where the average corn yield almost doubled over the past 15 years in South Africa, mainly after the adoption of biotechnology in the late 1990's. Indications are that this trend of producing more corn on fewer hectares will continue in future.

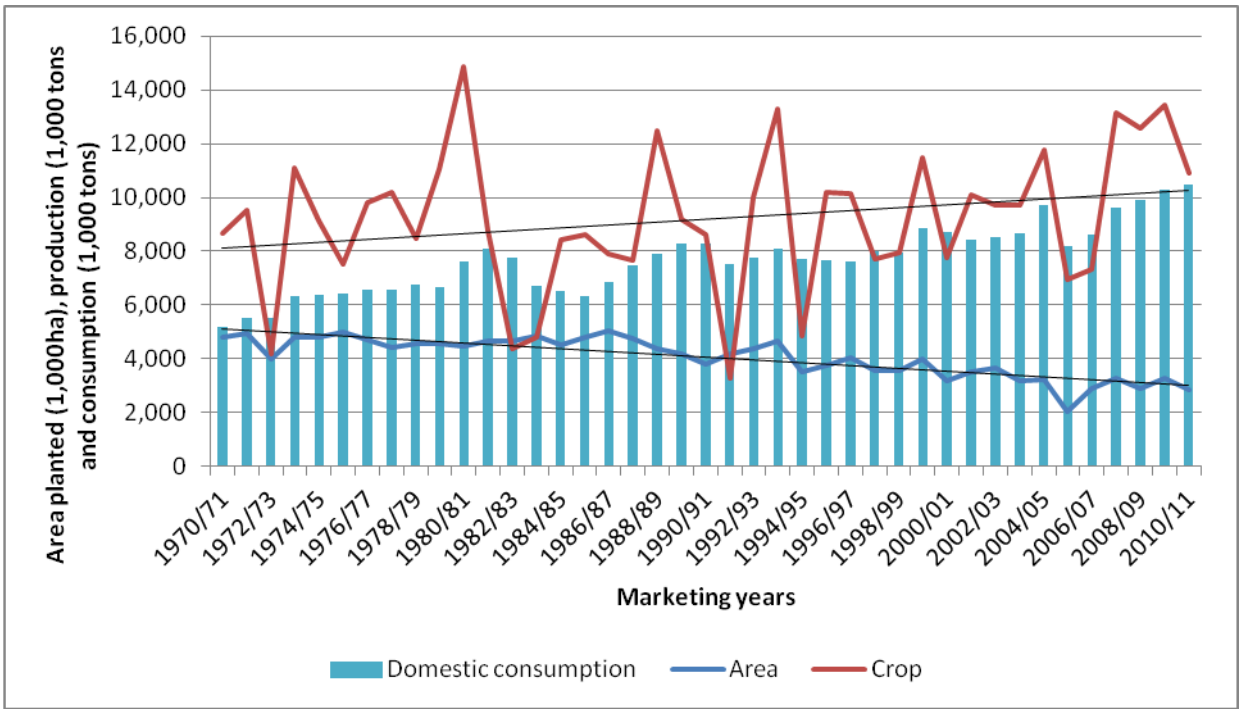

Figure 1: The trend in corn production and consumption in South Africa over the past 40 years

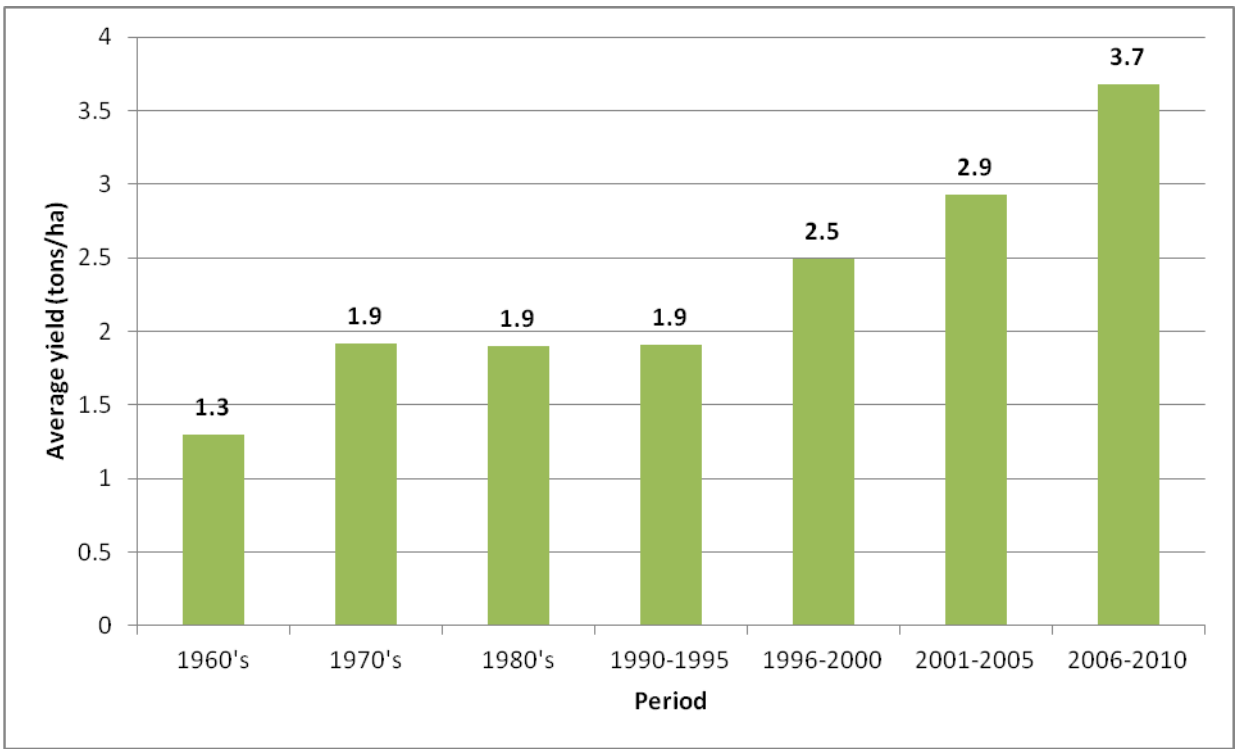

Figure 2: Trends in the average corn yields in South Africa

South Africa is the major exporter of corn on the Africa continent and a large percent of South African corn exports are destined for countries in Africa. In the 2010/11 MY, South Africa exported 2.4 million tons of corn, which included 1.7 million tons of white corn and 710,334 tons of yellow corn. Almost half of the corn exports (1.1 million tons of white corn) went to Mexico. Other major export destinations included the countries neighboring South Africa (399,632 tons of white corn and 114,170 tons of yellow corn), Korea (302,259 tons of white corn and 45,234 tons of yellow corn) and Taiwan (161,550 tons of yellow corn). Despite the unfavorable climatic conditions, South Africa is expected to continue to be a net exporter of corn in the 2011/12 MY. Post estimates that these exports will be around 1.5 million tons.

Due to the fact that the United States has approved corn events that are not yet approved in South Africa, United States commercial corn is not authorized to enter into South Africa. South Africa is not opposed in principle to these events, but if they have not made it through the regulatory approval process of South Africa they cannot

be imported. Commercial corn that contains biotech events that are already approved in South Africa is not affected by this.

However, U.S. food aid destined to Lesotho, Malawi, Swaziland, Zambia and Zimbabwe ordinarily passes through the port of Durban, South Africa. In order for the shipment to pass through South Africa, the GMO Registrar's Office requires several measures:

- Advance notification so that proper containment measures can be taken;
- Letter from the recipient country stating that they accept the food aid consignment and that they know that it contains GMOs;
- Milling near the port. Southern African Development Community (SADC) regulations state that if food aid has biotech content then it must be milled.

Soybeans

GM soybeans were first approved for commercialization in South Africa in 2001; by 2006, 75 percent of the soybean crop grown was GM. In the 2011/12 season the area planted with soybeans increased by 13 percent, from 418,000 hectares in the 2010/11 season to 472,000 hectares. In the 2011/12 season, soybean plantings surpassed sunflower plantings for the first time ever. This illustrates the remarkable increase, of almost 4-fold, in the hectares planted with soybean in South Africa the past ten years. An estimated 85 percent of the 2011/12 season's soybeans plantings are GM (herbicide tolerant). Many South African producers are now recognizing the value of soybeans in a crop rotation system with corn and, in addition, the production of soybeans is made relatively easier with the GM cultivars that are available in South Africa. With the increase in crushing capacity, indications are that this upward trend in soybean plantings will continue in future.

Cotton

Bt cotton was the first GM crop variety to be grown commercially in sub-Saharan Africa. Early adopters were small-scale farmers in the Makhatini Flats in

Kwazulu-Natal, South Africa, who have been growing the crop since 1998. Total cotton planting remained unchanged in 2011/12 at 15,000 hectares. All cotton plantings in South Africa are GM. The stacked variety is the most favored one and represents 95 percent of total cotton planting.

Biotech crops under development:

Permits issued

The Executive Council (EC) review all applications submitted in terms of the GMO Act and use a case-by-case and precautionary approach to ensure sound decision-making in the interest of safety of the environment and the health of human and animals. Most applications considered by the EC involve GM corn, soybeans and cotton and in most cases represent modifications and refinements of existing traits. Mindful of other challenges beyond that of agriculture, the EC also evaluate applications for vaccine trials involving GMOs.

South Africa has seen an increase in the submission of comments on GMO permit applications from a wider audience of stakeholders and interested parties in recent years. These organizations include academic institutions, consumer forums, commodity organizations, provincial departments, and other stakeholder organizations representing the anti- and pro-GMO movements.

In terms of the GMO Act, a total number of 387 permits were issued in 2011, compared to 396 in 2010 and 359 in 2009. The majority of permits being issued were for the import and export of GM crops (see also Table 5). Imports focused mainly on commercially approved corn, soybeans and cotton for activities relating to planting, contained use, food and feed. In addition, imports also include GM HIV and tuberculosis vaccines for contained use in South Africa. The main exports permits issued included GM corn and to a lesser degree GM cotton primarily for contained use, planting activities and GM corn exported as a commodity for human and animal use. Twenty-four commodity clearances were approved in 2011(refer back to Table 2), after safety assessments were completed. These

approvals were basically for corn for the use as food, feed and processing.

Table 5: Summary of GMO permits issues in South Africa from 2008

	2008	2009	2010	2011
Exports	95	167	225	197
Imports	135	150	128	131
Trials	16	35	33	32
Contained use	2	7	6	3
Commodity clearance	24	0	0	24
General release	0	0	4	0
Total	**272**	**359**	**396**	**387**

In 2011, 32 field, or clinical trials permits were authorized. Table 6 summarizes the event, trait, product and company involved of the permits issued. The products include corn, soybeans and cotton for evaluation of insect resistance and/or herbicide tolerance and the long-awaited drought tolerance in corn as well as for the evaluation of GM sugar with altered sugar content and growth rate. Clinical trial permits were issued for HIV and tuberculosis vaccines.

Table 6: GMOs approved for trial release in 2011

Company	Event	Crop/product	Trait
Monsanto	MON87460	Corn	Drought Tolerance
	MON87460	Corn	Drought Tolerance
Bayer	Bollgard II x LLCotton25	Cotton	Herbicide tolerance Insect resistant
	Twinlink x GlyTol	Cotton	Herbicide tolerance Insect resistant
	Bollgard II x GlyTol x LLCotton25	Cotton	Herbicide tolerance Insect resistant
Triclinium	AERAS-402	Vaccine	TB
	AERAS-422	Vaccine	TB
	VPM1002	Vaccine	TB
	OncoVEX		
	Ad26.ENVA.01 & Ad35-ENV	Vaccine	HIV
SASRI	pihUMPS	Sugarcane	Increase yield & sucrose content

	pCel	Sugarcane	Increase cellulose content
	piHADK	Sugarcane	Increase yield & starch content
	piAGPase	Sugarcane	Decrease starch content
Pioneer	TC1507	Corn	Insect resistant
	TC1507 x MON810	Corn	Herbicide tolerance Insect resistant
	TC1507 x MON810 x NK603	Corn	Herbicide tolerance Insect resistant
	PHP36827	Corn	Insect resistant
	PHP37046	Corn	Insect resistant
	PHP36826	Corn	Insect resistant
	PHP37047	Corn	Insect resistant
	DP-32138-1	Corn	Male fertility Pollen infertility
	PHP37050	Corn	Herbicide tolerance Insect resistant
	TC1507 x NK603	Corn	Herbicide tolerance Insect resistant
	TC1507 x 59122 x MON810 x NK603	Corn	Herbicide tolerance Insect resistant
	TC1507 x 59122	Corn	Insect resistant
	TC1507 x 59122 x NK603	Corn	Herbicide tolerance Insect resistant
	59122	Corn	Insect resistant
	356043 x 40-3-2	Soybeans	Herbicide tolerance
Wits	SAAVI MVA-C TBC-M456	Vaccine	HIV

Grapevines

The South African wine and table grape industries are funding research to develop GM cultivars. The research is focused on the development of fungal and viral resistant vines and the metabolic engineering of grapevines towards enhanced environmental stress resistance and improved grape berry quality factors such as color and aroma. Several transgenic grapevine lines are being evaluated in greenhouse trials. In 2006, the Institute for Wine Biotechnology at Stellenbosch University applied for a permit to perform the first GM grapevine field trials in South Africa. The objectives of the trial were to evaluate the morphology, growth, and fruit quality of the transgenic plants under field conditions. In September 2007, the Advisory

Committee (AC) evaluated the application and a list of questions about the trials was referred back to the applicant. The applicant responded to those questions and the permit for field trials was finally approved in September 2009. Wine is one of the major agricultural products exported to the United States by South Africa, with an annual value worth around US$40 million. The wine industry and government, through the Department of Trade and Industry and the National Research Foundation, have together invested about US$1.5 million over the past two years in vine and wine biotechnology.

Bt Potato

The tuber moth resistant Bt potato, SpuntaG2, developed by the South African Agricultural Research Council and Michigan State University was denied general release by the EC in 2009. The EC dismissed the application for a permit to release the potato on safety and economic grounds. The Agricultural Research Council appealed against the EC's decision in October 2009. The appeal decision is still pending.

The potato, SpuntaG2, contains a gene from the soil bacterium Bacillus thuringiensis which acts like a built-in pesticide against the tuber moth (Phthorimaea operculella). The moth caused R40 million (US$5 million) of losses to the potato industry in 2008. Scientists had hoped the potato would allow farmers to use fewer pesticides, reducing costs and helping the environment.

The local potato industry, represented by Potatoes SA, stressed that, while they support GMO innovations and understand the potential of GMOs to strengthen agricultural productivity, they felt the introduction of the Bt potato would negatively affect potato demand in South Africa. Potatoes SA is focusing on increasing potato consumption in South Africa, which has been falling over the past few years. It is not clear if the statement of Potatoes SA against the approval of the Bt potato had influenced the decision of the new GMO trait. If the appeal fails there is a strong possibility that the GM potato research will cease due to lack of funding.

Cassava

South Africa's Agricultural Research Council (ARC) received authorization for contained use of a starch enhanced cassava variety. The main goal of this crop is to produce an industrial starch crop, as a means to improve jobs and income for South Africa and the region. USAID/South Africa obligated $800,000 over two years to this research and the initial focus was on further development and roll-out of a transgenic pest-resistant variety of cassava for use as industrial starch. The project is being managed by Michigan State University in collaboration with the CGIAR.

Transgenic Sorghum

An application for contained greenhouse facility testing of transgenic sorghum was approved by the South Africa's GMO Executive Council after twice being denied due to technical reasons. The Council for Scientific and Industrial Research (CSIR) works on the African Bio-fortified Sorghum Project (ABS) in level 3 biosafety greenhouses. Using genetic engineering and conventional plant breeding methods, the scientists hoped to develop a more easily digestible strain of sorghum with increased levels of vitamins A and E, iron, zinc, and essential amino acids

Sugar

The Variety Improvement Program of the South African Sugarcane Research Institute (SASRI) encompasses operational and research activities that facilitate the development and release of varieties with sucrose, yield, pest and disease, agronomic and milling characteristics that are desirable to both millers and growers.

Currently, modern biotechnological approaches are deployed to (1) enhance parental selection, (2) deliver novel, desirable traits ('precision breeding'), (3) develop systems for the rapid bulking and distribution of high-quality seed cane and (4) investigate the biological basis of sucrose accumulation in sugarcane, with a view to enhancing the process. While these research efforts are

guided strongly by breeding imperatives, they are also informed by priorities determined within the Crop Protection and Resource Optimization programs. Research projects include:

- Analysis of transgenic sugarcane lines designed to test perturbed sugar metabolism.
- Drought tolerance induced in sugarcane by genetic modification.
- Overcoming transgenic silencing in sugarcane.
- Unlocking genetic variation in sugarcane for disease resistance.
- Improved nitrogen use efficiency via GM technology.
- Medium and long-term conservation of strategically-important transgenic germplasm.

Other Research

Research is continuing on corn and cotton for evaluation of insect resistance and/or herbicide tolerance and the long-awaited drought tolerance in corn. The ARC is also busy on transgenic virus resistant selections of an ornamental bulb species, *Orinthogalum*, a type of hyacinth (Chinkerinchee or Sun Star).

Pannar Seed and Pioneer Hi-Bred's proposed partnership approved

The South African Competition Appeal Court announced in May 2012, its approval of the transaction between Pannar and Pioneer, overturning an earlier decision by the South African Competition Tribunal. The transaction, where Pannar will sell the majority of its business shares to Pioneer, has already been approved by the competition authorities in other African countries where approval was required, including Kenya, Malawi, Namibia, Swaziland, Tanzania and Zambia.

The approval of the transaction is subject to a number of conditions that Pioneer and Pannar have committed to, including significant, long-term investment in South Africa. In addition to its investment in Pannar, Pioneer has committed US$7.5 million by 2017 to establish a regional research centre in South Africa that would bring advanced R&D breeding technologies to Africa and apply these technologies to the companies' complementary germplasm pools. The research centre will be similar to the innovative centers that DuPont has established in Brazil, India and China and will allow South Africa the opportunity to play a leading role in agricultural development for the African continent.

Pioneer and Pannar have further committed to working with communities, government and other groups to develop programs addressing the challenges faced by small-scale and developing farmers to increase their overall farm productivity, profitability and food security. Pioneer has committed US$2.5 million over six years toward programs, in addition to its current endeavors, that will benefit developing famers in South Africa.

The merger will allow each business to access additional crop areas, reach more customers and deliver improved seed products quicker and more efficiently than either could have achieved on its own. Pannar receives access to Pioneer's genetics library and its corn breeding and biotechnology capabilities which will benefit its Africa operations and its operations in the United States and Argentina. Pioneer will tap into Pannar's expertise and reach across Africa and its corn genetics developed specifically for the region.

Both Pannar and Pioneer are positive that the transaction could help improve food production in South Africa and throughout Africa. The increases in farmer productivity through higher crop yields and better use of technology are a critical component in addressing the need to feed rapidly increasing populations, in Africa and globally.

Section III. Plant Biotechnology Policy:

Historical context

In 1979, the South African government established the Committee on Genetic engineering (SAGENE). SAGENE comprised of a group of brilliant South African scientists and was commissioned to act as scientific advisory body to the government and paved the way for the uptake of genetic engineering in food, agriculture, and medicine. In 1989, on the advice of SAGENE, the first GMO experiments in open field trials took place. In January 1994, a few months before South Africa's first democratic elections, SAGENE was given legal powers to "advise any Minister, statutory or government body on any form of legislation or controls pertaining to the importation and/or release of GMO products". As a result, SAGENE was task in drafting a GMO Act for South Africa. A draft GMO bill was

published for public comment in 1996 and passed by the Parliament in 1997. Nevertheless, the GMO Act only came into effect in December 1999, after regulations to bring the Act into effect were promulgated. In this interim period, SAGENE continued to act as the key "regulatory body" for GMO products, and under its auspices granted permits to allow Monsanto commercializing GM cotton and GM corn seed. In addition, 178 permits were granted for a variety of open field GMO trials. Once the GMO Act came into effect, SAGENE ceased to exist and was replace by an Executive Council, established by the GMO Act.

The GMO Act of 1997

The GMO Act of 1997, and its accompanying Regulations, is administrated by the Department of Agriculture, Forestry and Fisheries (DAFF). Under the GMO act a decision-making body (the Executive Council), an advisory body (the Advisory Council) and administrative body (the GMO Registrar) was established to:

- Provide measures to promote the responsible development, production, use and application of GMOs;
- Ensure that all activities involving the use of GMOs be carried out in such a way as to limit possible harmful consequences to the environment, human, as well as, animal health;
- Give attention to the prevention of accidents and the effective management of waste;
- Establish mutual measures for the evolution and reduction of the potential risks arising from activities involving the use of GMOs;
- Lay down the necessary requirements and criteria for risk assessments;
- Establish appropriate procedures for the notification of specific activities involving the use of GMOs.

This GMO Act of 1997 was modified by cabinet in 2005 to bring it in line with the Cartagena Biosafety Protocol (CBP) and again in 2006 in order to address some economic and environmental concerns. These amendments to the GMO Act were published and gazetted on April 17, 2007 and came into effect in

February 2010, after the Regulations were published. The GMO Act, as amended, does not change the pre-existing preamble, which establishes the general ethos of the legislation namely, to subsume the need for biosafety with the imperative to promote genetic engineering.

The amendments to the GMO act now make it clear that a scientifically based risk assessment is a prerequisite for decision-making and also authorizes the EC to determine if an environmental impact assessment is required under the National Environmental Management Act. The amendments also add specific legislation to allow socio-economic considerations to factor into decision-making and makes those considerations significantly important in the decision-making process.

The amendments also create at least 8 new provisions dealing with accidents and/or unintentional transboundary movement. These provisions have been motivated by the spate of contamination incidents that have occurred worldwide involving unapproved GMOs. A new definition of "accident" has been created to capture two types of situations: one dealing with unintentional transbondary movements of GMOs and the other, unintentional environmental release within South Africa.

In summary: The existence and application of the GMO Act and its amendments provides South Africa with a decision-making tool that enables authorities to conduct scientifically-based, case-by-case assessment of the potential risks that may arise from any activity involving a particular GMO.

The Executive Council

The EC functions as an advisory body to the Minister of Agriculture, Forestry and Fisheries on matters relating to GMOs, but more important is the decision-making body that approves or rejects GMO applications. The EC is also empowered to co-opt any person knowledgeable in the field of science to serve on the EC to provide advice.

The EC is made up of representatives of different departments within the South African government.

These include:

- Department of Agriculture, Forestry and Fisheries
- Department of Water and Environmental Affairs
- Department of Health
- Department of Trade and Industry
- Department of Science and Technology
- Department of Labor
- Department of Arts and Culture

Before making a decision regarding GMO applications, the EC is obliged to consult with the Advisory Committee (AC). The AC is represented on the EC through its chairperson. Decision-making by the EC is on the basis of consensus by all the members and where no consensus is reached, the application before the EC will be considered as having been refused. For this reason it is essential that all representatives on the EC have significant knowledge on biotechnology and biosafety.

The Advisory Council

The AC consists of ten scientists who are appointed by the Minister of Agriculture, Forestry and Fisheries. The EC has a say in the appointment of members of the AC and has recently changed a number of the members, following protest by civil society that some members of the AC were also members of the pro-GMO lobby group, Africabio and ex-SAGENE members.

The role of the AC is to provide the EC advice on GMO applications. The AC is further supported by subcommittee members representing an extended pool of scientific expertise from various disciplines. The AC together with the subcommittee members is responsible for the evaluation of risk assessments of all applications as it relates to food, feed and environmental impact and submit recommendations to the EC.

The Registrar

The Registrar, who is appointed by the Minister of Agriculture, Forestry and Fisheries, is in charge of the day-to-day administration of the GMO act. The Registrar acts on the instructions and conditions laid

down by the EC. The Registrar is also responsible for examine applications to ensure conformity with the Act, issuing of permits, amending and withdrawing of permits, maintaining a register and monitor all facilities that are used for contained use and trail release sites.

Other regulations that impact on GMOs in South Africa:

The National Environmental Management Biodiversity Act

The National Environmental Management Biodiversity Act (Biodiversity Act) of 2004 was established to protect South Africa's biodiversity from specific threats and includes GMOs as one as those threats. It also ensures there is a sharing of benefits from South Africa's biological resources.

Section 78 of the act gives the Minister of Environmental Affairs the power to deny a permit for general or trial release applied for under the GMO Act, if the GMO may pose a threat to any indigenous species or the environment, unless an environmental assessment has been conducted. There have been relatively few GMO environmental assessments conducted as a result of the requirements of the Biodiversity Act.

The Act also asks for the establishment of a South African Biodiversity Institute (SANBI). SANBI is tasked to monitor and report regularly to the Minister of Environmental Affairs on the impacts of any genetically modified organism that has been released into the environment. The legislation requires reports on the impact of non-target organisms and ecological processes, indigenous biological resources and the biological diversity of species used for agriculture.

Consumer Protection Act

Health regulations published in 2004 largely follow Codex Alimentarius scientific guidelines. These regulations mandate labeling of GM foods only in certain cases, including when allergens or human/animal proteins are present, and when a GM food product differs significantly from a non-GM equivalent. The rules also require validation of enhanced-characteristic

(e.g., “more nutritious”) claims for GM food products. The regulations do not address claims that products are GM-free.

On April 24, 2009, the President signed the new Consumer Protection Bill into law. Implementation of the Act, however, was delayed for some time as the legislation generated significant comments from the private sector over the basis of many provisions and uncertainty over how the Act would be enforced. The new Consumer Protection Bill require virtually that every product label in South Africa‘s food and beverage industry to be changed.

On April 1, 2011, the South African Department of Trade and Industry (DTI) published regulations in the Gazette that brought the Consumer Protection Act (68/2008) into force. The regulation came into effect six months (October 1, 2012) after the commencement of the act. The primary purpose of the law is to prevent exploitation or harm of consumers and to promote the social well being of consumers.

However, the approved Consumer Protection Act has the following section which states that all products containing GM material must be labeled [Section 24(6)]:

(6) Any person who produces, supplies, imports or packages any prescribed goods must display on, or in association with the packaging of those goods, a notice in the prescribed manner and form that discloses the presence of any genetically modified ingredients or components of those goods in accordance with applicable regulations.

According to the act:

- All food containing more than five percent genetically modified ingredients, whether produced in South Africa or elsewhere, needs to carry the declaration which states, "contains at least five percent genetically modified organisms’’ in a conspicuous and easily legible manner and size.
- Those products that contain less than five percent of genetically modified organisms (GMOs) may be labeled "Genetically modified content is

below five percent".

- If it is impossible or not feasible to test goods for the presence of GMOs, the product must be labeled "may contain GMO ingredients".
- Less than one percent – maybe labeled as does not contain genetically modified organisms

The Department of Trade & Industry views the labeling of GMOs solely within the context of the consumer's right to obtain the facts needed to make an informed choice or decision about food. It is thus not about human health, safety or quality issues.

Additionally, the new Act includes a significant change to product liability, where a consumer no longer has to demonstrate that a producer was negligent before receiving compensation for injury. The new legislation puts the burden of proof on the producer or supplier, meaning that a consumer can sue almost any producer or supplier for harm or injury that is the result of a failed, defective, or unsafe product. Almost every supplier must comply with the bill, even if the supplier does not reside in South Africa. Foreign producers who sell products through a South African agent for use in South Africa would be included under the bill.

These regulations may have a significant impact not only on regional trade, but also on United States exports to South Africa, since all products will have to be labeled and producers/suppliers could be held liable for any purported harm their product may have caused. South African biotechnology stakeholders are also concerned about the scope of the clause and whether GM products that have already been registered and approved for use in the Republic of South Africa (e.g. certain varieties of corn, soybean and cotton) need to be labeled.

In recent events, Business Unity South Africa (BUSA) organized a meeting with the Commissioner of the Consumer Protection Act on 29 May 2012, to discuss the current challenges pertaining to the regulations of the Act. The request for BUSA's intervention was as a result of numerous unsuccessful attempts by respective business community members to secure meetings with the Commissioner precisely to address the regulations. The intention was also to initiate the establishment of

future dialogues and collaboration to address pertinent limitations of the regulations including GM labeling.

The BUSA delegates tabled the following concerns regarding GM labeling to the Commissioner:

- The inclusion of GM labeling in the Consumer Protection Act is not necessary as it is already covered by regulations No. R25 of the Foodstuffs, Cosmetics and Disinfectant Act, Act No. 54 of 1972, administrated by the Department of Health;
- To adhere to the current regulations regarding GM labeling will increase the cost of food and impact negatively on the consumer and household food security;
- The current regulations referred to "genetically modified organisms" as defined in Section 1 of the Genetically Modified Organisms Act, Act No. 15 of 1997. The current commercially approved GMO's in terms of the latter are corn, soybeans and cotton. Inevitably, downstream products are not covered and therefore the existing regulations might not be applicable;
- The regulations are vague and pose interpretation challenges. There are varying degrees of interpretations by various industries in an attempt to solicit compliance mechanisms;
- There are currently only a few laboratories in the country and these would be unable to absorb the pressure of testing every batch from the farm gate and throughout the value chain.

The Commissioner replied by acknowledging the inherent challenges pertaining to definitions and interpretations of the existing GM regulations, as well as, disparities leading to the final draft. As a result, the Commission has been collaborating with the Departments of Health, Agriculture, Forestry and Fisheries, Trade and Industry and Science and Technology in an effort to develop more sensible guidelines on GM labeling. Written requests for nominations to participate in the task team entrusted with the drafting process were sent to these departments. The Commissioner furthermore

committed that the industry would be consulted on draft GM labeling guidelines before publication dated envisaged to be the end of July 2012.

South Africa is seen as a leader in the biotechnology front in Africa, and many neighboring countries look to South Africa for guidance and direction. While South Africa is an ally of the United States in that it has a progressive biosafety policy that is based on sound science and backed by an informed, forward-thinking GMO Council and Advisory Committee, this is an instance where uninformed parties can introduce legislation that will affect the administration of the current GMO biosafety legislation. As other countries look to South Africa for guidance, they may be likely to adopt similar legislations that would affect trade.

Biosafety Protocol

SA has signed and ratified the Cartagena Protocol on Biosafety (CPB). The primary responsibility for implementing the CPB has shifted from the Department of Environmental Affairs to the Department of Agriculture, Fisheries and Forestry (DAFF). CPB implementation is meant to be gradual, and accordingly DAFF's implementation will be in phases, with the most significant issues being handled first. SA, under the leadership of DAFF's GMO Regulatory Office, has modified its GMO Act to comply with the CPB. The CPB will likely slow down trade with its additional bureaucratic requirements but will likely not diminish trade in GMOs in the long run.

The regulatory treatment of Stacked Events

SA requires an additional approval for GM seeds that combine two already approved traits, such as herbicide tolerance and insect resistance. This requirement means that companies effectively need to start from the beginning of the approval process for stacked events, even when the individual traits have already been approved. The Executive Council has reconfirmed in its first meeting of 2012, that each stack event must be subjected to a separate safety assessment as per the GMO Act, after a request has been received that approved traits when used in a stacked event be

acknowledge.

The regulatory treatment of coexistence

Coexistence has not been an issue that has necessitated the introduction of specific guidelines or regulations in South Africa. The government leaves the management of the approved GM field crops to the farmers. South Africa also does not currently have a National Organics Standard in place.

Technology Fees

Biotechnology companies operating in South Africa follow essentially the same procedure for collecting technology fees that they follow in America. This policy generally works because South Africa is a signatory to the Trade-Related Aspects of International Property Rights (TRIPS) agreement of the WTO. Trade sources relate that cotton and corn are such that farmers have to buy new seed every year. Farmers sign a one-year licensing agreement, and the technology fee is included in the price of the bag of seed for these crops. Soybeans are more difficult. Technology developers try to collect the fee from the farmers when they deliver the harvest to the terminal. This fee can be difficult to collect because soybeans are open pollinated so seed need not be purchased each year. Also farmers often use soybeans for feed right on the farm so they might never enter commercial circulation. This challenge is not unique to South Africa, but rather is due to the intrinsic nature of the soybean.

Permit fees

Under the GMO Act, the GMO registrar charges a fee for the different permits that can be issued. Table 7 illustrates the current permit fees payable.

Table 7: Permit fees payable

Application	**Fees**
GMO status certificates	R170 (US$25)
Importation or exportation of GMO with general release status	R420 each (US$50)
Contained use GMO's	R1,239 ($147)
Trial release of GMO's	R2,940 (US$350)
General release of commodity clearance of GMO's	R22,890 (US$2,725)

Appeal	R4,494 (US$535)
Extension permit	R367.50 (US$44)
Registration of facility	R430.50 (US$51)
Commodity use permit	R252 (US$30)

Note: *R1 = US$8.40*

Section IV. Plant Biotechnology Marketing Issues:

Producers, Seed Companies, and Importers

South African farmers can be divided into two categories; commercial and subsistence farmers. GM products have a wide appeal with both groups. Each group appreciates that GM crops use fewer inputs and have higher yields. In fact, subsistence farmers find some GM crops easier to manage than traditional or hybrid varieties.

Seed companies have found that subsistence growers are an important market for GM crops. Distributors should be from the local area, speak the local language, and they should take time to talk with people and explain the technology and its benefits. When this care is taken, small-scale growers are generally receptive to new technologies.

Importers require assurance that no unapproved GM varieties are inadvertently contained in the shipment because South Africa's regulation for adventitious presence is only one percent. Yet, in reality their tolerance is zero, since the GMO Registrar's office won't grant an import approval for a shipment coming from a country that cultivates events that aren't approved in South Africa; if the product is milled or otherwise processed it can usually enter.

Consumers

A survey conducted by the Department of Science and Technology's Public Understanding of Biotech organization, shows that most South Africans have no knowledge of biotechnology. This finding is not surprising given that most South Africans are more concerned with the price of food than with how it was grown. What is interesting is that despite this lack of understanding, an average of 57 percent indicated that

different applications of biotechnology should continue.

Although South African scientists are among their continent's leaders in biotechnology, the survey showed that the term “biotechnology” means nothing to 82 percent of the general public. A similar proportion is unaware of the meanings of 'genetic engineering', 'genetic modification’, and 'cloning'. The study, in which researchers interviewed 7,000 people in the language of the participant's choice, was designed to be representative of the adult population of South Africa. It reveals that even among the few South Africans who were aware of biotechnology, most were indifferent to it.

When asked who they most trust to tell the truth about biotechnology, 24 percent of interviewees said universities, 19 percent said the media, and 16 percent said the government. Respondents were even less likely to trust consumer groups, environmental organizations, religious groups, or the biotechnology industry. The survey concluded that South Africa needs better science communication about biotechnology so that people can have a clearer picture of how it affects their lives.

Section V. Plant Biotechnology Capacity Building and Outreach:

The South African government generally supports the use of biotechnology products. Transgenic varieties of cotton, corn, and soybeans are approved for commercial planting and 72 percent of corn plantings, 85 percent of soybean plantings and all cotton plantings in South Africa are GM. Agricultural biotechnology holds wide appeal for South African small and commercial farmers as they recognize the financial benefits of fewer inputs and potentially higher yields.

FAS/Pretoria’s program uses South Africa as an example of a country that accepts and uses agricultural biotechnology successfully when doing outreach activities in the region. South Africa’s GMO adoption story is key in FAS/Pretoria’s regional biotechnology strategy. The participation of South African researchers, officials, and experts in USDA funded

outreach activities as speakers and participants, adds a type of credibility to the biotechnology picture that the U.S. story alone could not attain. To continue to strengthen the South African agricultural biotechnology position by implementing a sustained and deliberate outreach strategy will contribute significantly to harmonizing the regional biotechnology system and lead to less trade disruptions overall.

FAS/Pretoria's short term goals for biotechnology in Southern Africa include:

- Stakeholders in southern Africa have the capacity and understanding of agricultural biotechnology necessary to propose science-based regulations.

- Regulators in South Africa approve for use a local or regionally developed biotechnology event, for example the potato or banana.

- As part of the Global Hunger and Food Security Initiative (Feed the Future), U.S. and South African regulators and companies work with other countries in southern Africa to build support for science-based biotechnology regulations.

Below, the activities that have been carried out by FAS/Pretoria in the region since 2010 are listed. These activities are implemented usually through AfricaBio. AfricaBio is a non-governmental, non-political and non-profit biotechnology organization based in South Africa that advocates for stakeholders in the research and development, production, processing and consuming sectors. The bulk of its funding comes from the private sector. USAID and other U.S. organizations provide periodic funding for training and capacity building activities and production of biotechnology informational materials.

Adventitious presence workshop (May, 26, 2010): FAS/Pretoria in collaboration with AfricaBio, held a two part workshop on Adventitious Presence in Pretoria,

South Africa. The workshop formed part of a study prepared by the National Advisory Council of innovation on "Adventitious Presence of GMOs in commodities". The National Biotechnology Advisory Committee commissioned the study following approval of the Consumer Protection Act. The purpose of the study is:

- To increase understanding of regulators, scientists and industry about the requirement for labeling.
- To determine how this should be done and who would bear the cost.
- To determine the level of engagement between regulators, scientists and members of the industry.

In total, 26 stakeholders participated in the workshop: government departments, seed companies, Grain trade organizations, Silo Association, Public research institutions etc. The presentations and discussion at the workshop demonstrated the value and implications of the need for greater dialogue between the various government departments and the major stakeholders. There is a need to introduce a proactive policy options for adventitious presence that will maintain the uninterrupted flow of trade of agricultural biotech products between South Africa and other countries

Biotech study tour to the United States (October 31 – November 16, 2010): FAS/Pretoria partnered with Cornell University to organize a tour for six key regulatory officials from Angola, Mozambique, and South Africa on agricultural biotechnology research, regulation, and commercial application in the United States. The tour built on post's ongoing efforts to encourage the adoption of commercial agricultural biotech practices, the adoption of science based systems, and to ensure the uninterrupted flow of trade to the region by consistently engaging lawmakers and regulatory officials. The tour was made possible by a grant from the USDA's Emerging Markets Program (EMP).

The feedback from the participants, organizers, and speakers was overwhelmingly positive and multi-faceted. The participants had well-structured and lively

discussions with scientists, regulators, technology providers and technology users. Equally important, the participants, all representing African countries at different stages of adoption of biotechnology, were able to share their experiences and plans. Three of the five regulatory officials hold adjunct or full professor positions in the area of agricultural biotechnology research in various universities.

U.S. Science envoy Dr. Gebisa Ejeta (May 16-21, 2011): A key component of Dr. Ejeta's engagement in South Africa was on agricultural biotechnology. Post, in collaboration with AfricaBio, organized a business brunch for Dr. Ejeta with local members of the agricultural biotech community. Dr. Ejeta gave a well received presentation on "Understanding the challenges and opportunities for applying science and food production" highlighting three key ingredients for sustainable economic development, namely, science and technology, human and institutional capacity building and good policy and governance.

Assistant Secretary Fernandez (June 7, 2011): Post organized a breakfast meeting for A/S Fernandez with members of the Agricultural Business Chamber (ABC) of South Africa. The ABC is a private organization representing agribusinesses in South Africa. Biotechnology was one of the items on the agenda and the agribusinesses present reiterated the importance of this science in combating food insecurity in Southern Africa. Post also introduced A/S Fernandez to AfricaBio in a very positive lunch meeting.

OECD Conference on Agricultural Knowledge Systems (June 15 – 17, 2011): Post collaborated with FAS Paris to send a commercial famer from South Africa to the OECD conference to deliver a keynote address. Unfortunately, due to logistical problems he was unable to attend but his paper titled "Farmers' Experience with Biotech Crops in South Africa" was read at the meeting and well received.

Food and Environmental Safety Assessment of Genetically Engineered Animals (September 5 – 9, 2011): Post is collaborating with FAS/Washington to send a participant from Biosafety South Africa to the above-mentioned workshop to be held in Buenos Aires.

The workshop is sponsored by the International Centre for Genetic Engineering and Biotechnology and the United Nations University-Program for Biotechnology in Latin America and the Caribean.

Plant Biotechnology: Environment, Food, Health. What Future? Conference (September 19 – 21, 2011): Post collaborated with FAS/Paris to indentified, Mr. Chris Schoonwinkel, a commercial corn famer from South Africa, to participate as a speaker at above-mentioned conference organized by the French association for Plant Biotechnology. Mr Schoonwinkel presented his paper and identified the benefits he obtained since using GM corn. Chris also spoke to the media and was well received.

FAS/Pretoria presents U.S. Biotech Experience to South African Parliament (March 6, 2012): FAS/Pretoria, as part of a panel of speakers, was invited to brief the South African Parliamentary Portfolio Committee on Agriculture on the U.S. experience with biotechnology adoption. Unexpectedly, the Portfolio Committees for Rural Development, Health, and the Environment also attended. This marked the first time FAS/Pretoria had addressed the Parliamentary committees that oversee the priorities and budgets of their respective departments for biotech-related rule-making. Senior Agricultural Attaché, Corey Pickelsimer, presented the United States experience with biotechnology adoption, which included the regulatory framework developed for approving genetically engineered crops and animals in the U.S., and emphasized the need for a regulatory framework that is based in sound-science. After presenting to Parliament, the group travelled to the Stellenbosch University, Institute for Plant Biotechnology where they met with local professors to discuss biotech research in South Africa. Funding for this activity came from Department of State.

FAS/Pretoria presents at ISAAA press briefing (March 8, 2012): FAS/Pretoria Senior Agricultural Attaché, Corey Pickelsimer, participated in the International Service for the Acquisition of Agri-Biotech Applications (ISAAA) press release to more than 30 representatives of media and invited guests from various embassies based in Pretoria, South Africa. Dr.

Klaus Ammann, a noted expert and keynote speaker, predicted the future of biotechnology as being driven by bio-fortification, or traits that benefit consumers through improved nutrition and other consumer-oriented benefits. This event was funded, in part, by the Department of State Economic Bureau Biotech Outreach Program.

Biotechnology Outreach with Emerging Farmers (March 9, 2012): Minister Counselor, Ross Kreamer, and Senior Agricultural Attaché, Corey Pickelsimer, attended the Emerging Farmer Day, a biotechnology outreach activity organized by AfricaBio, where Pickelsimer was invited to make opening remarks. In his remarks, Pickelsimer discussed the link between biotech adoption and increasing yields and cited yield improvements that have occurred in South Africa since the adoption of biotechnology in the mid to late 1990s. Furthermore, he emphasized the need for governments not to limit farmer's access to the technology, as it has been proven safe for consumers and the environment. This event was funded, in-part, by the Department of State EB Biotech Outreach Program.

Mozambique outreach (April 16 – 20, 2012): During the week of April 16, FAS/Pretoria and FAS/Maputo staff met with a range of biotechnology stakeholders to determine the current status and political climate for the advancement of biotechnology in Mozambique, and to determine the best prospects for biotech outreach among decision-makers, producers, and consumers. Mozambique has shifted from its historical position of refusing to adopt agricultural biotechnology, and has embarked on a path of policy change that could allow for biotech (bt) field trials and eventual commercialization. However, the issue of liability and redress in conducting field trials, where the liability for damages would be placed on the private partner involved in conducting field trials, has created a disincentive for seed companies to partner in bt cotton field trials. This issue has caused multi-national seed companies to be reluctant to assist Mozambique in its efforts to conduct cotton field trials.

Outreach to Advance Agricultural Biotechnology Cotton Field Trials in Mozambique (August 2012): Post is working on a proposal to bring Mrs. Betty

Kiplagat from Nairobi, Kenya, to review Mozambique's Biosafety Legislation and assist in developing a draft decree that addresses the liability and redress constraint. During her week-long program, Mrs. Kiplagat will assess the constraints concerning liability and redress, intellectual property, and other issues in the Mozambican Biosafety Legislation. She will work with the Government of Mozambique to develop a draft decree to supplement the legislation and address existing constraints preventing bt cotton field trials. Ideally, her work would incentivize private sector participation in field trial assistance, and would bring about greater biotechnology harmonization in Southern Africa. One Pretoria-based Agricultural Attaché will travel to Maputo to accompany Ms. Kiplagat, where she will also be accompanied by Embassy Maputo POL/ECON officer. Funding for this activity comes from the Department of State.

AfricaBio Business Lunch meeting (August, 31, 2012): Post is bringing Jerry Norton from the World Agricultural Outlook Board to South Africa to present on the topic of global grain trade and the effect biotechnology crops have had on trade since the late 1980's. Participants at the business lunch meeting will include government officials, farmers, delegates from seed companies, academics and other stakeholders.

Regional conference on biotechnology: Post is exploring the possibility for South Africa to host a regional conference on biotechnology with DAFF and other stakeholders.

Country Specific Needs

Regulatory stabilization and streamlining should be a focal point to capacity building activities in South Africa. These activities could include:

- Regular interaction and information exchange with regulators on GMOs,
- Interactions with portfolio committees in parliament, and;
- Regular interaction one on one with chair persons of committees.

There is also a continued need for biotechnology capacity building in the EC and, to a lesser extent, AC and their superiors and supporting personnel. Some members of the EC are hindered in their decisions by the desires of their superiors, while others may have no involvement of their superiors in their decisions expressed in the EC, and thereby could be characterized as 'loose-cannons'. Increasing awareness at all levels of the departments and ministries represented on the EC could lead to better, more sound decision-making.

Additionally, outreach to small scale farmers on the benefits of biotechnology, specifically Bt corn should also be a focus. Expanding this outreach to include consumer groups and the general public could achieve greater understanding and acceptance of biotechnology.

Section VI. Animal Biotechnology:

Animal biotechnology also falls under the GMO Act of 1997, and any application will have to be approved by the EC. However, no animal biotechnology is at this stage conducted in South Africa. The Directorate of Biosafety in DAFF is proactive and is in the process of developing a framework for risk assessments regarding animal biotechnology.