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2011 Biotech Outreach Program - Lessons Learned

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Report Highlights:
Foreign Agricultural Service (FAS)/Paris, in collaboration with FAS/Pretoria and FAS/U.S. Mission to the European Union, invited two South African farmers in June and September 2011, to present their experiences with biotech crops. In June 2011, the first gentleman's presentation was shown at the Organization for Economic Cooperation and Development (OECD) meeting on Agricultural Knowledge Systems, and FAS/Paris organized a seminar on "Agricultural Innovation for Achieving Food Security," where French and U.S. scientists and policy makers presented their perspectives in the context of the Agricultural Ministerial G20 meeting held in Paris. In September 2011, the second farmer traveled to Paris and Brussels, where he met a wide range of key stakeholders in the farm community, the OECD, and the South African Embassies to discuss the economic and environmental impact of biotech crop production and the biotech regulatory framework. A number of observations can be made in terms of biotech outreach strategy for the future.

General Information:
On September 19-23, FAS/Paris, in collaboration with FAS/Pretoria, South Africa, and FAS in the US Mission to the European Union in Brussels, Belgium, invited Chris Schoonwinkel, a South African farmer, to present his experience as a biotech crop producer. He met with a wide range of stakeholders, and most noticeably was a speaker at the international congress of the French Plant Biotechnology Association (AFBV) on September 20. This was a follow-up to the events previously organized in June 2011, including a seminar on "Agricultural Innovation for Achieving Food Security" by FAS/Paris and the "Agricultural Knowledge Systems: Responding to Global Food Security and Climate Change Challenges" by the Organization for Economic Cooperation and Development (OECD). For more information, see report FR9072: Paris – Innovation and Plant Biotechnology to Address Food Security, dated July 13, 2011. The economic and environmental impacts of biotech crop production, as well as the regulatory framework for both biotech crop approval and production management were discussed with a wide range of stakeholders at the French national level as well as the European Union and OECD representatives.

1. **Economic Impact of Biotech Crop Production – Towards Food Security and Development**

South Africa is the leading biotech producer on the African continent, with 2.2 million hectares in 2010, including 1.8 million ha of corn (77 percent of the total corn acreage), 420,000 ha of soybeans (85 percent), and 15,000 ha of cotton (100 percent). For more information, see the annual biotech report prepared by FAS/Pretoria, dated July 15, 2011.

Mr. Schoonwinkel explained that the fast adoption of biotechnology by South African farmers can be primarily explained by the higher margins of these crops production compared to conventional corn production, despite the higher costs of biotech seeds, and due to higher yields, reduced labor, fuel, and pest control costs. Also, he explained that the quality of his corn crop improved as a result of the use of the Bt technology, resulting in better grading (kernels are not damaged by the corn borer, preventing fungi from developing). Two major impacts of the higher quantity and better quality of corn crop were identified: South Africa became a net exporter of corn, land prices increased.

The situation of soybean is different: soybean production in South Africa has expanded since the change in the political system in 1994: the changing diet of the population towards an increased share of animal proteins (mainly chicken) has raised domestic demand for soybean meal for feed. As a result, South African production of soybeans has increased significantly, but still needs to be complemented by imports of soybean meal, mainly from South America, which are also on the rise. Currently, the crushing capacity in South Africa does not meet the expanding soybean but is expanding.

French and European Perception:

- *Higher economic returns for farmers growing biotech crops is perceived as a valid argument for emerging countries, not for Europe:* French farmers are well aware of the economic benefits of

growing biotech crops, as they experienced them where they were allowed to grow Bt corn until 2007, but consider this is not a valid argument for the public in Europe where the farm lobby has lost control of the discussion on biotechnology, and left the field open to international NGOs.

- *Pointing the inconsistency of authorizing imports but limiting or banning cultivation in Europe is a valid argument, often unknown by the public*: There is a feeling among the French farm community that European authorities maintain massive imports of biotech feed although limiting biotech crop cultivation in order to keep the European livestock and poultry industry competitive on world markets. The President of the major French cooperative Limagrain stated at the AFBV congress that the European Union is damaging its own agricultural competitiveness by refusing to use plant biotechnology, costing approximately 1 percent differential in economic competitiveness every year relative to its competitors.

1. Environmental Impact of Biotech Crop Production - Direct Benefit for Farmers and Consumers

The South African farmer underlined that producing herbicide tolerant and insect resistant corn has allowed him to simplify labor with minimum tilling, which benefits soil, preserving its carbon content. In parallel, the use of the technology significantly reduced his chemical use (reducing the number of herbicide and insecticide treatments). This is of particular interest for farmers' health, which can be negatively affected by chemical spreading when not conducted in an appropriate way.

Perception by French and European Stakeholders:

Growing biotech crops is environment-friendly - a direct benefit for consumers: For years, hostile groups to biotechnology have stated they would reconsider their opinion when there are biotech crops with direct benefits to consumers available on the market. The reduced use of chemicals when growing biotech crops, illustrated by a wide range of studies in the various countries producing biotech crops, is in line with the demand by consumers in France and Europe in general for more environment-friendly farm practices, and reduced pesticide residues on food, which resulted in a growing market for organic products. The mutual benefits of Bt and conventional corn was illustrated by recent studies, indicating that Bt corn production reduced the pressure of the corn borer on the neighbor plots, therefore reducing the need to use insecticides on a wider area than strictly the one planted to Bt corn.

3. Biotech Regulation: Cultivation Management and Products Approval

Perception in France and the EU: Risk Management is Key, Scientists and Industry Complain About Over-Regulation:

In France and Europe, biotech crop production is principally perceived under the angle of risk management. Therefore, Mr. Schoonwinkel was asked about his biotech crop management practices. The refuge zones indicated were generally considered not adapted to the smaller size of plots in France and Europe. Pest resistance to self-resistant crops is another major concern in France and Europe.

There is an increasing complaint about an over-regulation of plant biotechnology benefiting major private companies at the expense of smaller businesses and public research. Several speakers expressed their frustration about it during a conference organized by the French Association of Plant Biotechnology on September 20, where the South African farmer was a speaker. At this conference, Ingo Potrykus, "father" of the golden rice, considered over regulation delays the adoption of biotech products, and quantified at 10 years and USD 25 million the work that needs to be done prior to a biotech plant approval. Also, Daniel Segonds, president of the French seed association and member of the national biotech authority (High Council of Biotechnology), complained about the regulation burden in the European Union. He indicated that partnership (including several French seed companies and INRA) was indispensable on a transgenic wheat project to create varieties resistant to drought and with an optimized use of nitrogen. Finally, the major seed company Limagrain had to move its research activities on biotech wheat to the United States where protesters would not destroy its work, unlike in France. Interestingly, similar frustrations have been reported by scientists in the United States as well, indicating that public investments in agricultural research and development are declining. This was illustrated by Dr. Julian M. Alston, University of California-Davies, at the OECD's Agricultural Knowledge Systems meeting in June 2011.

Future Prospects: Can Biotech Success Stories in Africa and in Wheat Perspectives Worldwide Change European Minds?

Success Story of Biotech Cotton Production in Burkina Faso:

Burkina Faso is the second largest producer of biotech crops in Africa, with 500,000 ha of Bt cotton. This success story has not transpired in the media headlines yet, but a number of French people are becoming more vocal about it. Bernard Bachelier, former Director of the French public research institute CIRAD and of the FARM foundation, explained at the AFBV conference in September 2011 that cotton yields have increased by 15 to 30 percent in this country, labor is simplified, and farming conditions are healthier for farmers as a result of the reduced spraying of insecticides on the cotton fields. He regretted the absence of French public research in developing countries, while private companies continue to invest there. More specifically, he publicly regretted CIRAD had to withdraw from the biotech cotton project in Burkina Faso for political reasons. Also, a recent study made by researchers in the University of Oklahoma on Bt cotton production in Burkina Faso concluded not only to significant economic benefits for farmers (with higher yields, and higher returns to labor due to reduced pesticide sprays), but also major health benefits (with reduced pesticide poisoning).

High Expectations for Biotech Wheat to Boost Yields:

During his meetings, Mr. Schoonwinkel linked the status of net importer of wheat of South Africa with the fact that wheat currently doesn't benefit from biotechnology and has stagnating yields. In Europe, wheat is a traditional and staple crop, and France is the largest producer and exporter of wheat. There are many in the French farm industry considering that biotechnology could address the current issue of stagnating wheat yields around the world. France, with the National Institute of Research in Agriculture (INRA), is active in coordinating the global wheat initiative, which is the first application of the G20

meeting on agriculture of June 2011. At this meeting, set by the French Presidency of the G20, ministers of agriculture of the G20 countries unanimously called for more research and development in agriculture to increase production and productivity. The global wheat initiative aims to better coordinate research programs on wheat conducted by a wide range of institutes across the world, including genomics. Several French seed companies and cooperatives are involved in biotech wheat research programs. For more information, see report FR9073, annual biotechnology report for France, dated 7/15/2011.

Conclusion:

The French daily economic newspaper "Les Echos," distributed at more than 120,000 issues per day, published a long article entitled "How discussion on GMOs is slowing down research in Europe" on the AFBV conference of September, and quoted Mr. Schoonwinkel's name and words as follows: "In Paris for the AFBV congress, Benjamin Christiaan Schoonwinkel, a South African farmer, does not understand European controversies. For him, genetically engineered crops are indispensable and their ban is certainly an obstacle towards greater food security in Africa." Click here for the link to the full article on Les Echos's website.

Mr. Schoonwinkel was video-interviewed by the US Mission to the European Union in Brussels, Belgium, and the video was posted on YouTube. Click here for the link with USEU website, and click here for the link to the FAS/Paris website link.

Following the successful visits arranged by FAS/Paris since 2009 on plant biotechnology in the developing world (see reports FR9072 dated 7/13/2011 – Paris – Innovation and Plant Biotechnology to Address Food Security, FR9067 dated 5/17/2011 – Chief USDA Scientist Gets Scientific View of Biotechnology, and FR9050 dated 10/14/2010 – Combining Sustainable Agriculture and Food Security), the presentation of the impact of biotech crop production in South Africa, as a case study, revealed a number of questions and interests by French and EU audiences. Contacts previously established with French stakeholders were strengthened and new like-minded people were identified, both at France's and at the EU levels. Major lessons were learned for future strategic biotech outreach actions. We look forward to sponsoring more dialogue between U.S., developing and emerging countries, as well as France and EU stakeholders in biotechnology in 2012.