SOUTH ASIA
BIOSAFETY PROGRAM

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NEWSLETTER

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SABP

The South Asia Biosafety Program (SABP) is an international developmental program initiated with support from the United States Agency for International Development (USAID). The program is implemented in India and Bangladesh and aims to work with the local governments to facilitate implementation of transparent, efficient and responsive regulatory frameworks that ensure the safety of new foods and feeds, and protect the environment.

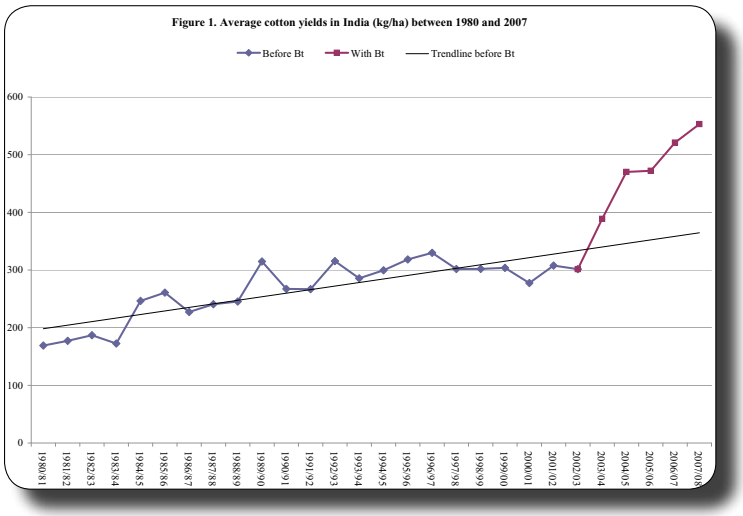
SABP is working with its in-country partners to:

- Identify and respond to technical training needs for food, feed and environmental safety assessment.
- Develop a sustainable network of trained, authoritative local experts to communicate both the benefits and the concerns associated with new agricultural biotechnologies to farmers and other stakeholder groups.
- Raise the profile of biotechnology and biosafety on the policy agenda within India and address policy issues within the overall context of economic development, international trade, environmental safety and sustainability.

Bt COTTON AND FARMER SUICIDES IN INDIA: REVIEWING THE EVIDENCE

G.P. Gruère, P. Mehta-Bhatt, and D. Sengupta, International Food Policy Research Institute

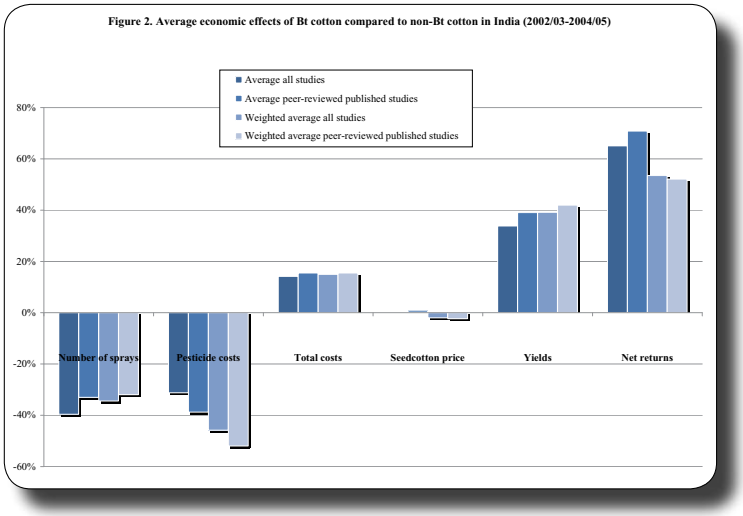
In the last five years, India has rapidly increased its production of cotton, becoming a major exporter. Among other factors, the introduction and rapid adoption of Bt cotton likely played a significant role in the increase in the observed high cotton productivity growth in India (Figure 1). Yet, despite its commercial success, Bt cotton remains largely controversial in India. Among other allegations, it is accused of being the main reason for a resurgence of farmer suicides in India.



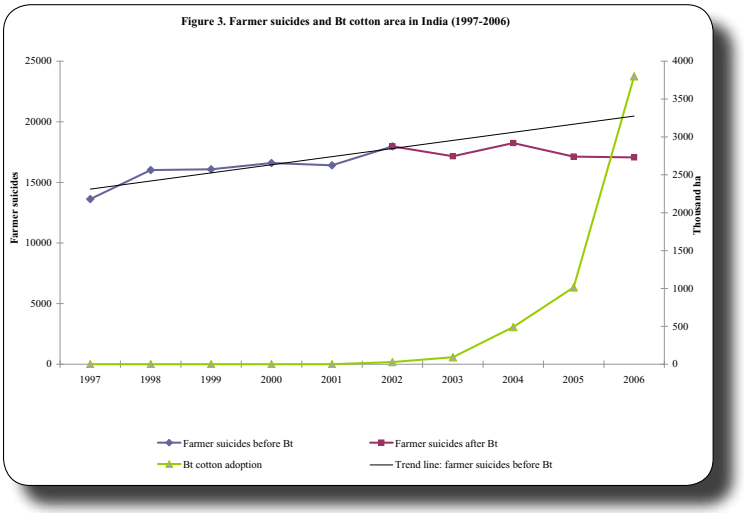
By compiling and synthesizing available data from official sources, research reports, and economic and policy analyses, the study provides a comprehensive review of the evidence on the economic effects of Bt cotton in India and the alleged link it may have with the reported resurgence of farmer suicides in India.

The paper first shows that despite the recent media hype around farmer suicides, there is no evidence in available data of a "resurgence" of farmer suicide in India between 2002 and 2007. Even if there has been an increasing trend in total suicides, the reported share of farmer suicides has in fact been decreasing.

Second, our comprehensive review of available evidence on the effects of Bt cotton in India shows that Bt cotton technology has been very effective overall. In particular, a synthetic review of results from studies based on farm level data, shows that on average Bt cotton has had a significant positive effect in India, raising farmers' income via an increase in yields and a reduction in pesticide use, despite increasing overall production costs (Figure 2).



However, the context in which Bt cotton was introduced has generated disappointing results in some particular districts and seasons, mainly because of climatic and market conditions, inadequate farming practices, and the widespread use of initial Bt varieties that were not adequate for all locations. The institutional context played a significant role in the negative outcomes within Bt



(continued on page 2 - see Farmer Suicides)

NEWS AND EVENTS

CALENDAR OF EVENTS

Event	Organization	Date	Place
INDIA			
Series of 16 Workshops on 'Management and Monitoring of Field Trials of Genetically Modified Crops'. Organized by Department of Biotechnology (DBT), Ministry of Environment & Forests (MoEF) and Biotech Consortium India Limited (BCIL).	Workshops are being held October - December, 2008, at the following SAUs: - University of Agricultural Sciences, Bangalore **(November 26, 2008)** - Bidhan Chandra Krishi Viswavidyalaya, Nadia, West Bengal **(December 1, 2008)** - Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra **(December 10, 2008)** - Birsa Agricultural University, Ranchi, Jharkhand **(December 13, 2008)** - Jawaharlal Nehru Krishi Viswavidyalaya, Jabalpur, Madhya Pradesh **(December 15, 2008)** - Narendra Deva University of Agriculture & Technology, Faizabad, Uttar Pradesh **(December 20, 2008)** - Orissa University of Agriculture & Technology, Bhubaneswar, Orissa **(December 22, 2008)** - Punjab Agricultural University, Ludhiana, Punjab **(December 22, 2008)** - Acharya NG Ranga Agricultural University, Hyderabad, Andhra Pradesh **(December 17, 2008)** - Rajendra Agricultural University, Samastipur, Bihar* - Chaudhary Charan Singh Haryana Agricultural University, Hisar, Haryana* - Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu* - Sardarkrushinagar-Dantiwada Agricultural University, Dantiwada, Gujarat* - Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh* - Rajasthan Agricultural University, Bikaner* - CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur, Himachal Pradesh* * *Dates to be finalized.*		
Leslie Coleman Memorial National Symposium on Plant Protection	University of Agricultural Sciences, Bangalore	December 4 - 6, 2008	University of Agricultural Sciences, Bangalore
Global Potato Conference 2008	Indian Potato Association (IPA), Central Potato Research Institute (CPRI), Shimla and Indian Council of Agricultural Research (ICAR),	December 9 - 12, 2008,	New Delhi
Second International Symposium on Papaya	International Society for Horticultural Science Leuven, Belgium and Tamil Nadu Agricultural University	December 9 - 12, 2008,	Madurai, Tamil Nadu
BANGLADESH			
International Symposium on Regulatory and Safety Issues in the Commercialization of Biotechnology Research in the Developing World.	International Centre for Genetic Engineering & Biotechnology (ICEGB) and BRAC University. For more information e-mail biotechsymp2008@yahoo.com	December 2 - 4, 2008	BRAC University, Dhaka
4th International Botanical Conference.	Bangladesh Botanical Society	January 16 - 18, 2009	Botany Department, Dhaka University
INTERNATIONAL			
10th International Symposium on the Biosafety of Genetically Modified Organisms.	International Society for Biosafety Research (ISBR)	November 16 - 21, 2008	Wellington, New Zealand

Farmer Suicides - *continued from page 1*

cotton, including the lack of or weak extension systems and the presence of unofficial and spurious seeds being sold as official Bt.

Third, our review of available reports and evidence on a possible relationship between suicides and the observed effects of Bt cotton shows that Bt cotton is not a necessary or sufficient condition for the occurrence of farmer suicides (Figure 3). Therefore, it should not be blamed for the re-surgence of farmer suicides in the field. In contrast, other factors have almost certainly played an indispensable role in these cases, especially the insufficient or risky credit systems with no formal or informal support and the wide availability of toxic pesticides.

Nevertheless, in specific regions and years, where Bt cotton may have indirectly contributed to farmer indebtedness,

(continued on page 4 - see Farmer Suicides)

CREAM OF THE (WEB) CROP

harvesting the best from the worldwide web

THIS MONTH'S PICK:

U.S. Grains Council Biotechnology Resource Center website

http://brc.grains.org/grains/index.ww

The US Grains Council's Biotechnology Resource Center is USGC's hub for the latest information on worldwide Council programming efforts in the field of agricultural biotechnology. Its aim is to provide science-based information to decision-makers, consumers and journalists around the world.

The Biotechnology Resource Center is divided into three areas: (1) Programs - information about current and past education programs offered by the USGC; (2) Partners - information about and links to its international partners; and (3) Education Center - a virtual library of publications, video segments and current news coverage tackling a range of key issues related to agricultural biotechnology that policy makers and consumers are facing today. These issues include the environmental costs and benefits of agricultural biotechnology; human and animal health issues; the national and international regulatory process; and the logistics of trading bulk commodity biotechnology products.

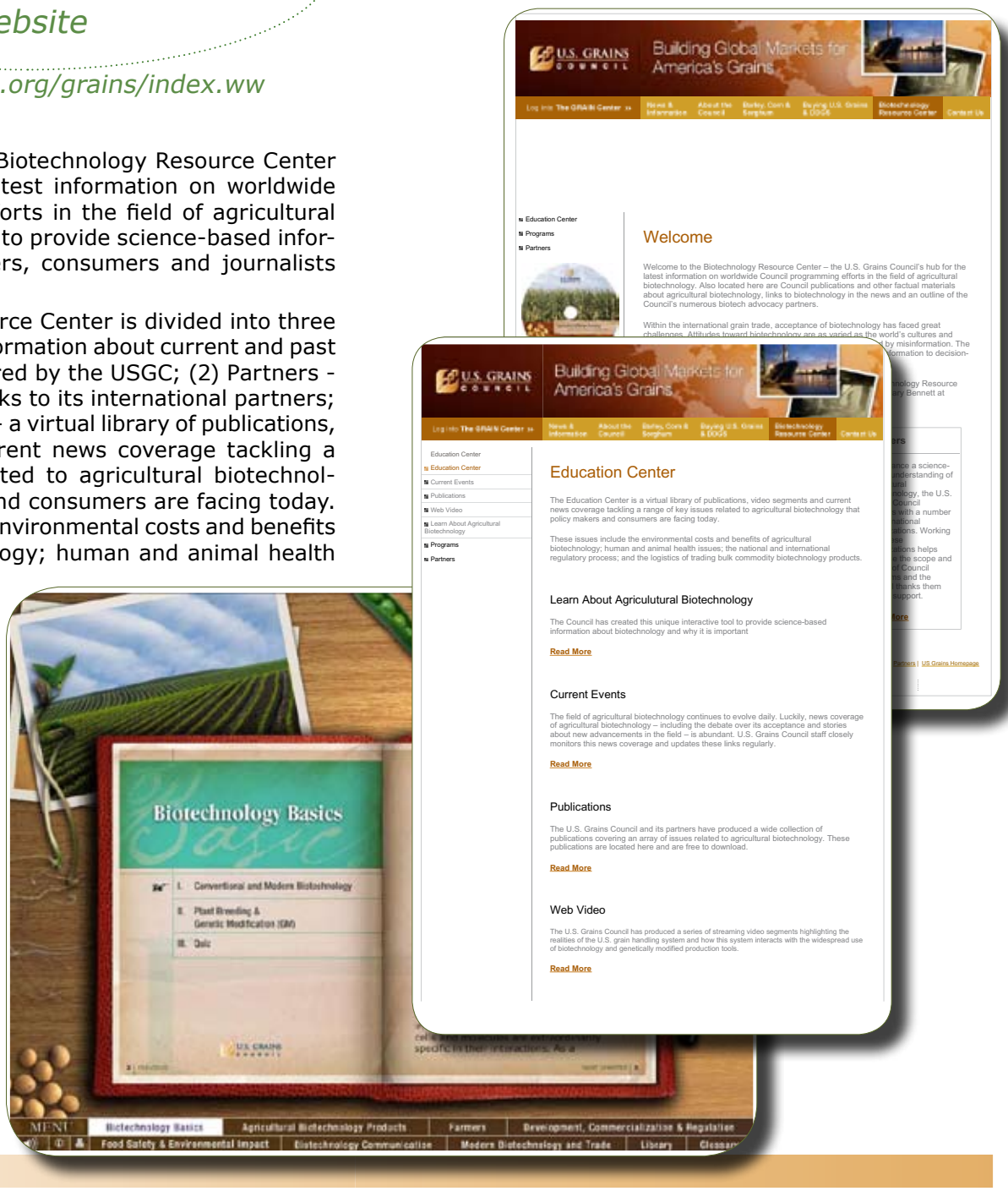
The Education Centre is divided into four sections:

Learn About Agricultural Biotechnology - An interactive tool to provide science-based information about biotechnology and why it is important. This resource introduces biotechnology, how it has evolved, and its impacts on the production of the world's food, feed and fiber, as well as the movement of these products through the different segments of the agricultural sector.

Current Events - Links to news coverage about new advancements in the field of agricultural biotechnolgy.

Publications - A collection of free, downloadable publications covering an array of issues related to agricultural biotechnology. These publications are produced by the USGC and its partners.

Web Video - A series of streaming video segments highlighting the realities of the U.S. grain handling system and how this system interacts with the widespread use of biotechnology and genetically modified production tools.



Farmer Suicides - *continued from page 2*

leading to suicides, its failure was mainly the result of the context or environment in which it was planted. We close the paper by proposing a conceptual framework for empirical applications linking the different agricultural and institutional factors that could have contributed to farmer suicides in recent years in certain districts of Central and Southern India. To learn more, the complete study can be found at http://www.ifpri.org/pubs/dp/ifpridp00808.pdf

DR. A.B. SINGH - NORMAN E. BORLAUG INTERNATIONAL AGRICULTURAL SCIENCE AND TECHNOLOGY FELLOW

As the facilities and procedures for evaluation of allergenicity of transgenic foods are under development in India, Dr. A.B Singh, Head, Allergy and Aerobiology Lab, Institute of Genomics and Integrative Biology, New Delhi visited University of Nebraska Lincoln (UNL) from February 1 to March 14, 2008 as a recipient of a 2008 Norman E. Borlaug International Agricultural Science and Technology Fellowship.

Dr. A.B. Singh receiving his Borlaug Fellowship certificate.

While there he worked in the lab of Dr. Richard Goodman where he learned various techniques on safety and allergenicity of food. In collaboration with Prof. Goodman and his students, Dr. Singh carried out molecular techniques used in the assessment of allergencity of foods. He gained experience in techniques such as ELISA, Dot-Blots and Western-Blots and also how to identify allergenic epitopes in the legumes commonly consumed in India. For example, the specific IgE binding protein epitopes found in legumes such as peanut were identified to rule out the non-specific binding of carbohydrate moieties in the antigenic extracts of food legumes. Dr. Singh also acquired hands-on training in prediction of allergenicity of transgenic foods by bioinformatics searches for sequence homology of allergenic proteins, heat stability and pepsin digestion assays and specific IgE measurements. He gave a presentation on "Food Allergy: Indian Scenario". While in Iowa he had an opportunity to visit Pioneer HiBred with Prof. Goodman. The presentations and the visit to some of the labs at Pioneer was very useful and informative to understanding how genetically modified products are developed and evaluated.

Dr. Singh also attended the meeting of American Academy of Allergy & Clinical Immunology in Philadelphia from March 14 to 18, 2008 and presented the research paper "Cross-reactivity Among Seed Flour Extracts of *Brassica campestris* and *Brassica juncea*".

GOVERNMENT APPROVES THE BIOTECHNOLOGY INDUSTRY PARTNERSHIP PROGRAMME (BIPP)

The Department of Biotechnology (DBT) has launched the new Biotechnology Industry Partnership Programme (BIPP) - An Advanced Technology Science Scheme (ATS), envisaged as a government partnership programme with industries for support on cost sharing basis for high risk discovery and innovation, accelerated technology development specially for futuristic areas.

Global experience has shown that early generation of intellectual property (IP) in frontier areas of technology empowers subsequent product development and creation of new enterprise derived from local innovation, and this is best accomplished through symbiosis between public and private sectors. The proposed Biotechnology Industry Partnership Programme is aimed at addressing this challenge. The goals of this proposed scheme are:

A. To increase the global competitiveness of Indian industry in new and futuristic technologies and enhance ownership of IP in these areas by Indian companies and scientists.
B. to address major national unmet technoTogical needs in agriculture, human health, animal productivity, energy and environment where expected social and economic impact is high.
C. To fulfill the biotech strategy objectives of 30% of DBT's R&D investment in partnership with industry under BIPP support would be in four major categories.

This new scheme will be one of the most enabling mechanisms to promote biotech industry R&D and public private partnership programmes. The scheme provides for a government contribution of 30-50% to the industry for discovery linked innovation. Under this advanced technology scheme, support would be provided only for futuristic areas, transformational technology and product development for public good.

Grant in aid support would also be provided for clinical trials of biotechnology products that are based on indigenous discovery and innovation. The scheme will support major research facilities and platform technology centers as core facilities that are readily accessible to SMEs and public sector scientists. For more information please see http://dbtindia.nic.in/AboutBIPP.pdf

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