

ISAAA in Brief



ISAAA
INTERNATIONAL SERVICE
FOR THE ACQUISITION
OF AGRI-BIOTECH
APPLICATIONS

ISAAA's **mission** is to contribute to poverty alleviation by increasing crop productivity and income generation, particularly for resource-poor farmers, and to bring about a safer environment and more sustainable agricultural development.

ISAAA's **objectives** are the transfer and delivery of appropriate biotechnology applications to developing countries and the building of partnerships between institutions in the South and the private sector in the North, and by strengthening South-South collaboration.

THE NEED

Conventional technology alone is no longer able to increase food, feed and fiber productivity at a growth rate fast enough to keep up with population growth and with environmental and sustainability pressures.

The applications of agri-biotechnology including tissue culture, diagnostics and transgenic crops offer promising means to a more sustainable agriculture and a safer environment. This is a critical need in developing countries, where over 90% of the world's 9 billion people will be living in 2050. Yet biotechnology applications are owned primarily by private corporations, and the benefits of these technologies are generally not accessible to most developing countries.

THE SOLUTION

An appropriate institutional mechanism, ISAAA, was created, sponsored by public and private sector institutions, with the aim of transferring agri-biotech applications from industrial countries in the North, particularly proprietary technology from the private sector, to developing countries for their benefit.

ISAAA's role and comparative advantage as an honest broker is to bring together institutions from national programs in the South, and from the private sector in the North, into partnerships to transfer biotechnology applications. Thus, ISAAA sees itself not as the implementor but as the facilitator.

ISAAA has an organizational structure that permits both the public and private sectors to work together as true partners in an international biotechnology program for the benefit of the developing world. Acknowledging that technology adoption by resource poor farmers is, and probably always will be, challenging and difficult, makes the mission of ISAAA in its quest for equity in technology transfer even more important.

THE SERVICE

ISAAA has initiated a pilot program employing a four-step strategy to provide the following services:

- Assist developing countries in identifying biotech needs and priorities and assessing potential socio-economic impacts.
- Identify, evaluate, and facilitate the acquisition of new crop biotechnology applications with benefits for resource-poor farmers.
- Implement a portfolio of crop biotechnology projects in developing countries that have a potential for near term impact in food, feed, fiber crops and forestry.
- Provide advice and services to assist in the development of an enabling environment to support the safe applications of crop biotechnology.

THE STRATEGY

- Focus on the safe and effective introduction of near-term biotech applications that have already been tested in industrial countries.
- Emphasize applications to increase the productivity of food, feed and fiber crops, particularly orphan crops for resource poor farmers and contribute to sustainable agriculture, and assign high priority to horticulture and forestry.
- Concentrate on three classes of plant biotechnology applications: tissue culture, diagnostics and transgenic crops.
- Assign priority to the assessment of benefits and constraints of biotechnology in developing countries, including biosafety and food safety, socio-economic considerations, IPRs and the responsible deployment of resistance genes.

THE PROGRAM

ISAAA implements a demand-driven program that responds to the priority needs of target national programs in Africa (Egypt, Kenya, Tanzania, Uganda, and Zimbabwe), Asia (Indonesia, Malaysia, the Philippines, Thailand and Vietnam) and Latin America (Argentina, Brazil, Costa Rica and Mexico); countries among the group of developing nations that possess a level of capability in agri-biotechnology and the political will to play a leadership role. With the establishment of ISAAA centers in the South,

diffusion of technology, at marginal cost, to neighboring countries with similar needs will continue to be encouraged.

THE PROJECTS

Approximately a dozen projects have been developed, brokered and implemented or are being developed. The first model project involved the donation of coat protein genes by Monsanto to Mexico for the control of viruses in potato, funded by the Rockefeller Foundation, and featuring technology transfer and the training of Mexican scientists. The transgenic potatoes developed by Mexican scientists have been tested in Mexico and are promising. A companion project assisted Mexico in developing the infrastructure and regulatory biosafety and food safety procedures.

The AfriCenter based in Nairobi, Kenya has a portfolio of projects which includes tissue culture to revive banana production in Kenya (South Africa/Kenya) and other East African countries, and micropropagation and distribution of multipurpose trees (South Africa/Kenya).

The ISAAA SEAsiaCenter, based at the International Rice Research Institute (IRRI) in the Philippines has a broad portfolio of projects. The major initiative is a papaya biotechnology network of the five key partner countries in the region, Indonesia, Malaysia, Philippines, Thailand and Vietnam. The network features incorporation of two important traits to local cultivars: resistance to the devastating PRSV virus using a gene donated by Monsanto; and improving the shelf life of papaya using a delayed ripening technology donated by Syngenta. Support in building regulatory capacities in the areas of biosafety, food safety and intellectual property rights, as well as intensive technical training and awareness building programs has been provided. Development of insect and virus resistant sweet potatoes is underway in both Vietnam and the Philippines. ISAAA recently facilitated the Papaya Ring Spot Virus (PRSV) resistant papaya technology from Monsanto to the Tamil Nadu Agricultural University (TNAU), Coimbatore, Tamil Nadu which is being implemented by the TNAU. **A Global Knowledge Center for Crop Biotechnology** is also operated in the *SEAsiaCenter* for the benefit of all developing countries in Africa, Asia, and Latin America. ISAAA publishes an Annual Review that documents the adoption of commercial transgenic crops worldwide. **The Global Coordinator for ISAAA, Dr Randy Hautea, is also the Director of the SEAsiaCenter.**

Other projects, already completed involved a diagnostic for the most important disease of crucifers in Asia (black rot; Washington State University/Asia); the development and transfer of several diagnostics for maize diseases (Pioneer Hi-Bred Int./Brazil); a network for the testing of viruses in tomato (Syngenta/Indonesia); the transfer of a selectable marker gene in cassava (Syngenta / Africa & Latin America), and south-south transfer of virus resistant potatoes (Mexico and Kenya).

PROJECT SUPPORT ACTIVITIES

ISAAA maintains a series of activities to support the implementation of projects. These include an initiative on biosafety and food safety regulatory development, socio-economic analysis, intellectual property rights management, issues on biodiversity, and the deployment and management of crops resistant to insects (*Bt*). A series of biosafety workshops in many countries have been completed with more than 250 policy makers and scientists trained in biosafety.

ISAAA BIOTECHNOLOGY FELLOWSHIPS

Recognizing that human capital is the most important factor for sustainable and successful projects, ISAAA has established a Fellowship fund. Many fellows have already received training awards and have been the catalyst for executing some of the technology transfer projects and broadening their impact in the developing world. These fellowships — as varied as the countries, people and institutions involved — have allowed the building of biotechnology capacity and sustainability in national programs, and this has made it possible to accomplish much in a short time.

ISAAA is likewise supporting the development of a Fruit and Shoot Borer Resistant (FSBR) eggplant in the Philippines.

DONORS

- ABSP/II/Cornell University, USA • Barwale Foundation, India
- Biotech Corp., Malaysia • CropLife International • CropLife Asia
- Common Fund for Commodities, The Netherlands
- FARM-Africa – Maendeleo Agricultural Technology Fund (MATF), Kenya • Fondazione Bussolera-Branca, Italy
- Government of Kenya/KAPP (Kenya Agricultural Productivity Project) • Ibercaja, Spain • JK Organisation, India
- Kilimo Trust, Uganda • Ministry of Environment and Forests, India
- Monsanto Fund, USA • Monsanto Company, USA
- Department of Agriculture, Philippines
- Program for Biosafety Systems/IFPRI, USA
- Rasi Seeds Ltd., India • SEARCA, Philippines
- The Rockefeller Foundation • USAID, USA
- USDA, USA • US Grains Council, USA

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