Global Sharing of Knowledge and Technology on Crop Biotechnology to Alleviate Poverty

ISAAA

INTERNATIONAL SERVICE FOR THE ACQUISITION OF AGRI-BIOTECH APPLICATIONS

ISAAA's Niche

ISAAA is a not-for-profit international organization that shares the benefits of crop biotechnology to various stakeholders, particularly resource-poor farmers in developing countries, through knowledge sharing initiatives and the transfer and delivery of proprietary biotechnology applications. ISAAA's global knowledge sharing network and public and private sector partnerships in the research and development continuum, provide a powerful combination of science-based information and appropriate technology to those who need to make informed decisions about their acceptance and use. In addition, an array of support services completes the holistic approach to agricultural development and ensures effective implementation and timely delivery of crop biotechnologies. These services include capacity building for policy makers and scientists; regulatory oversight on such issues as biosafety and food safety; and impact assessment.

"The International Service for the Acquisition of Agri-biotech Applications (ISAAA) has two major missions. One is to share knowledge on biotechnology, particularly biotech crops. We share this knowledge with the philosophy that we share it freely, but we respect the rights of others to make decisions based on that knowledge. So we are engaged in knowledge-based decision making. The major mission, the goal of ISAAA is to alleviate poverty and hunger in developing countries through the use of biotechnology."

Clive James
ISAAA Founder
& Board Chair

Knowledge Sharing Initiatives

The Global Knowledge Center on Crop Biotechnology based at the ISAAA Southeast Asia Center in the Philippines, was established to facilitate the process by which authoritative information is made available to developing countries. Popularly known as the KC, the center's activities support transparent decision making with the public on issues related to crop biotechnology. The KC has a global mandate and supports an information network of Biotechnology Information Centers (BICs) and country links in Africa, Asia, Europe and Latin America. The combined efforts of the KC and the BICs have made a significant contribution to a global informed debate on the responsible use and acceptance of the technology.

The network uses a modality of communication strategies (publications, websites, videos, stakeholder workshops, and study tours) to help provide an enabling environment for the safe application of crop biotechnology, and promote the public understanding of crop biotechnology. While the core KC addresses the concerns of a global community, the BICs are at the forefront of local initiatives to advance a broader understanding of crop biotechnology, such as information needed by policy makers and scientists in deciding on regulatory options for example. All BICs uphold the mission of disseminating factual and accurate information based on scientific principles.

Annual Global Biotech Crops Review & Other Publications

ISAAA is very much associated with its Annual Review of the global status of commercialized biotech crops. It is regarded as the most authoritative single source of information and most cited reference on the subject. Highlights of this Review are available in 43 languages and has generated over 2.1 billion impressions (estimated number of people reached by the articles). In addition, the weekly e-newsletters, the Crop Biotech Update and the Biofuels Supplement, are received by over a million subscribers in 12 languages and by additional recipients who get the news from other listservs. Other publications include science communication and public perception monographs, technical Briefs, semi-popular Pocket K (knowledge) series, and brochures.

Other Communication Modalities

The communication strategy for reaching a global community is through ISAAA's website (http://www.isaaa.org) and the respective websites of the BICs. Visitors seek information on the global status of commercialized biotech crops, and download materials and documents for instruction and briefing purposes. Video documentaries on the use of biotechnology by developing countries, i.e. Bt maize in the Philippines, Bt cotton in China and India, biotech papaya in Southeast Asia, tissue culture banana in Kenya and Tanzania, multi-purpose trees in Kenya, Tanzania and Uganda, and Bt brinjal in India are also available for viewing by video streaming on the ISAAA website.

In addition to the use of the tri-media and the internet, ISAAA also networks and conducts various seminars, workshops and fora to update stakeholders on the technology and enhance risk communication skills and techniques. Over all, the intent is to encourage greater interaction and dialogue.

Technology Transfer Projects

Africa

The *Afri*Center based at the International Livestock Research Institute in Nairobi, Kenya, has the following portfolio of projects:

Tissue Culture Banana Project. ISAAA collaborates with the Kenya Agricultural Research Institute (KARI), farmer organizations, and local partners in Kenya, South Africa, Tanzania, and Uganda to enable farmers to avail of disease-free and improved banana plantlets produced through tissue culture techniques. It also works with other sectors involved in extension, micro-credit, value-addition and marketing operations. Many farmers planting tissue culture banana have diversified into the production of confectioneries, wine, and fortified flour. Countries outside Kenya have requested replication of the project in their areas. Farmer-driven associations formed out of this intervention have the potential to transform banana farming into viable commercial enterprises.

Multi-Purpose Tree Project. ISAAA facilitated the sharing of proprietary technology specifically germplasm of fast growing multi-purpose trees, donated by Mondi Forests in South Africa to partners in Kenya. Kenyan scientists provided knowledge on technology adaptation and extension services while Mondi gave technical backstopping through exchange visits. Kenyan teams were offered fellowships on technology stewardship. Farmers from Kenya, Tanzania and Uganda have benefited from planting genetically superior tree seedlings.

The project has transformed into an independent legal entity – the Tree Biotechnology Program Trust – enabling it to join international breeding programs to minimize dependency on imported germplasm and enhance tree improvement of local species.

Asia

The *SEAsia*Center based at the International Rice Research Institute in the Philippines serves as ISAAA's global coordination hub. It also coordinates activities that center on these crops:

Papaya. The Papaya Biotechnology Network of Southeast Asia is a regional initiative among Indonesia, Malaysia, Philippines, Thailand, and Vietnam organized to address two major constraints to papaya production: the papaya ringspot virus (PRSV) and significant post-harvest losses. ISAAA facilitated an agreement with Monsanto to donate its virus resistance technology to the network. It also brokered an agreement with Zeneca (now Syngenta Seeds) and the University of Nottingham to share their delayed ripening technology. ISAAA provided internships and fellowships on various technology aspects. ISAAA also facilitated the transfer of PRSV papaya technology to the Tamil Nadu Agricultural University (TNAU), Coimbatore, India from Monsanto. TNAU requested assistance to build capacity to develop improved and virus resistant papaya varieties.

Eggplant. ISAAA is supporting the development of a fruit and shoot borer resistant (FSBR) eggplant in the Philippines. This project is being spearheaded by the Institute of Plant Breeding of the University of the Philippines Los Baños through a partnership with the Indian Maharashtra Hybrid Seeds Company Ltd (Mahyco), Cornell University, and the United States Agency for International Development (USAID) through the Agricultural Biotechnology Support Project II.

Insect and Virus Resistant Sweet Potato. Research is underway in Vietnam and the Philippines to develop transgenic sweet potato varieties. ISAAA brokered an agreement with Novartis Seeds (now Syngenta Seeds), Switzerland, to donate Bt genes and to train Vietnamese scientists in developing a variety resistant to sweet potato weevil. ISAAA also brokered the donation of virus resistance technology from Monsanto to the Philippines to develop local varieties with sweet potato feathery mottle virus (SFMV) resistance. Spearheading research activities are the University of the Philippines Los Baños and the Leyte State University. Likewise, ISAAA supported fellowships for local scientists.

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The principal and founding donors of ISAAA were philanthropic foundations. Since its founding ISAAA has been cosponsored by a donor support group consisting of public and private sector institutions, listed below. No long-term core funding is sought, with donors committing funds on a fixed-term basis. This fixed-term funding strategy exposes ISAAA's program to regular and rigorous peer review by donors, thereby ensuring its transparency and accountability.

Current Donors

ABSPII/Cornell University • ASARECA – Association for Strengthening Agricultural Research in Eastern and Central Africa • Barwale Foundation, India • Bayer CropScience Ag • Bejo Sheetal Seeds Pvt. Ltd, India • BIO-EARN: East African Regional Programme and Research Network for Biotechnology, Biosafety and Biotechnology Policy Development • CropLife International • FARM-Africa • Fondazione Bussolera- Branca, Italy • Government of Kenya/KAPP (Kenya Agricultural Productivity Project) • Ibercaja, Spain • IDRC – International Development Research Center of Canada • JK Agri-Genetics, India • Kilimo Trust, Uganda • Maharashtra Hybrid Seeds Pvt. Ltd (Mahyco), India • Maendeleo Agricultural Technology Fund (MATF) • Monsanto • Dept. of Agriculture, Philippines • Program for Biosafety Systems, IFPRI • Rasi Seeds Ltd., India • SEAMEO SEARCA, Philippines • UNESCO • USAID • USDA • Vibha Agrotech Pvt. Ltd, India

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