



ISAAA

in

2014



International Service for the Acquisition of Agri-biotech Applications (ISAAA) is a not-for-profit organization that shares the benefits of crop biotechnology to various stakeholders, particularly resource-poor farmers in developing countries, through global sharing of knowledge and technology development support.

ISAAA's global knowledge sharing network and 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; impact assessment, and science communication.

2014: Year in review

The cry of poverty, hunger, and malnutrition echoes through every corner of the world where food, feed, fiber, and fuel are scarce. Thus, nations and organizations take the formidable task of finding solutions to combat the adversities. Since its inception in 1991, ISAAA continues to harness the potential of crop biotechnology to uplift the lives of small-scale farmers in developing countries.

This report summarizes the major activities, projects, and accomplishments of ISAAA in 2014, which are its contributions in the global effort to help achieve agricultural sustainability and development.



Message from the Global Coordinator

Dr. Randy A. Hautea

2014 marks another memorable year for ISAAA. Global biotech adoption continues to rise, implying that our efforts and that of our partners are not in vain. Strategies were strengthened along two main areas of concern: knowledge sharing initiatives and technology transfer support.

It was a challenging year with heightened activities by critics of the technology, but we also saw new partners committed to fostering greater awareness and understanding of biotechnology.

ISAAA, through its Global Knowledge Center on Crop Biotechnology and network of Biotechnology Information Centers, continues to be at the forefront of bringing a cornucopia of biotech information materials to various stakeholders. Engagements with key stakeholders were facilitated to allow transparent debate on biotech issues that may affect acceptance and adoption of biotech crops. These activities led to a legion of stakeholders expressing their support for biotech crops.

The *SEAsia*Center provides strong support for building capacities on biotechnology and science communication. Public information and outreach activities were conducted to foster awareness on biotechnology among the stakeholders as well as impact assessment of biotech crops.

In Africa, the *Afri*Center worked its way towards unifying the voice of stakeholders to take a stand on policies that favor the development of the field. For the last two decades of its existence, *Afri*Center found its strength in fostering partnerships with organizations and key stakeholders for greater policy impacts.

We extend our gratitude to our partners and donors who continue to give unwavering support to ISAAA and believing in our cause.

With the challenges and developments in the agri-biotech arena, the coming years look promising. The effects of climate change become more intense but scientists are vigilant in developing biotech crops that combat not just the environmental stresses but also poverty and malnutrition. In turn, we will continue to seek ways to ensure that biotechnology information reaches the public accurately and widely and that the farmers and society reap the benefits of biotechnology.



Milestones

- The Global Status of Commercialized Biotech/ GM Crops: 2013 (ISAAA Brief 46), the flagship publication of ISAAA, was released in the first quarter of 2014 featuring global challenges in feeding the world and strategies in overcoming food insecurity.
- ISAAA Brief 46 generated 2,842 news articles in 60 languages from 76 countries and 4,810 social media posts with estimated media impressions of 4.28 billion.
- With the help of ISAAA biotechnology information network and partners, ISAAA

Brief 46 was successfully launched in 10 Asian countries and 18 African countries.

- The John Templeton Foundation project on farmer adoption and uptake pathway of biotech crops in China, India, and the Philippines was completed. The published reports serve as a compendium of evidences on how biotech crops have transformed the lives of small farmers in Asia.
- ISAAA's weekly e-newsletter, *Crop Biotech Update*, was redesigned to highlight the top news stories, biotech event approvals and new publications released.
- Members of the ISAAA network from 15 countries in Asia, Latin America, and Africa gathered together in Hanoi, Vietnam on March 18-19 to discuss and evaluate knowledge sharing initiatives on biotechnology.
- Workshops and seminars on biotechnology, bioinformatics, genomics, biosafety regulations, and communication have equipped various stakeholders with vital knowledge and experience to improve capacities.

- Biotechnology Information Centers continue to be at the forefront of public engagement on crop biotechnology through development of popularized publications, conduct of dialogues and workshops, and fostering partnerships.
- ISAAA became one of the partners of Cornell Alliance for Science, a global initiative for science-based communications.
- After conduct of massive information dissemination on Bt eggplant, a number of stakeholders in the Philippines have signified their support for the commercialization of Bt eggplant.
- Results of ex-ante studies on the socio-economic impact of Bt eggplant were summarized in a book to serve as empirical basis on the potential impacts of Bt eggplant.
- Open Forum on Agricultural Biotechnology (OFAB) handled by *AfriCenter* continuous to serve as a powerful platform for biotech dialogue in Kenya. Through OFAB, stakeholders

became more pro-active towards voicing out their support for biotech.

- Preparatory activities were conducted in Asian and African countries to equip delegates with relevant information on the agenda of the 7th meeting of the Conference of the Parties serving as the Meeting of the Parties to the Cartagena Protocol on Biosafety (COP-MOP7).
- A COP-MOP7 side event was hosted by *AfriCenter* to discuss the agricultural biotechnology trends in post-patent data access and stewardship.

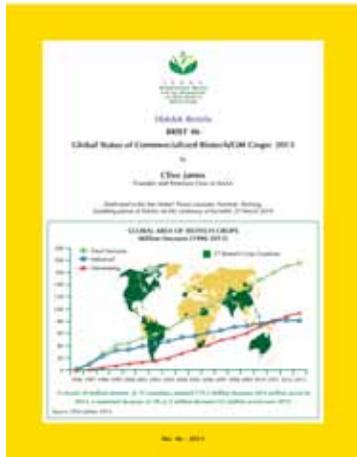
Knowledge Sharing with Developing Countries

ISAAA takes an active role in delivering facts and facilitating dialogue on biotechnology. This is made possible through the Global Knowledge Center on Crop Biotechnology (KC) and its network of Biotechnology Information Centers (BICs) in 26 countries. The network develops communication modalities, pursue partnerships, and implement need-based programs for biotechnology communication.



Global biotech adoption report

ISAAA is the go-to source of information on the latest biotech crop adoption all over the world. The Global Status of Commercialized Biotech/GM crops: 2013 (ISAAA Brief 46) answers most of the questions on global hectareage of GM crops by country, by trait, and by crop, as well as adoption rate, benefits, and future prospects. Aside from those details, it also highlights the global challenges in feeding the world and strategies that may address regional food security concerns.



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As of Dec 31, 2014

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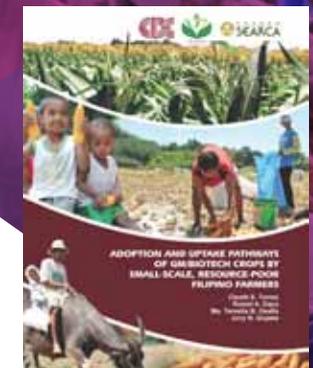
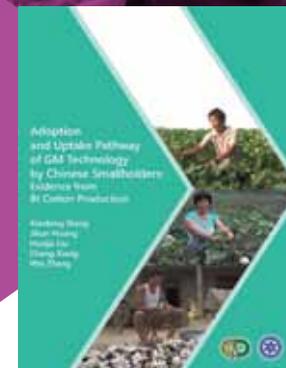
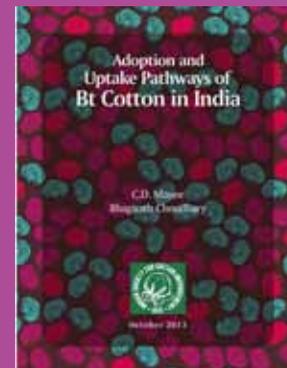
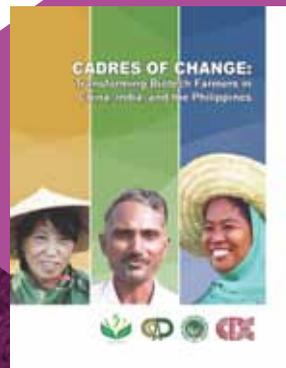
Study on biotech adoption and uptake pathways

ISAAA completed the two-year project on *Adoption and Uptake Pathways of GM/Biotech Crops by Small-scale, Resource-poor Asian Farmers: Comparative Studies in China, India, and the Philippines* in partnership with Chinese Academy of Sciences, Indian Society of Cotton Improvement, and University of the Philippines Los Baños, and funded by the John Templeton Foundation.

A comprehensive report on the study was released as ISAAA Brief 48. The Brief shows how modern

biotechnology has transformed farming into a profession that harvests agronomic, economic, and socio-cultural benefits. It features the stories of how biotech crops, particularly Bt cotton in China and India and biotech corn in the Philippines, are changing the lives of small resource-poor farmers. Country reports and highlights of the three-country study were also released in monograph and video

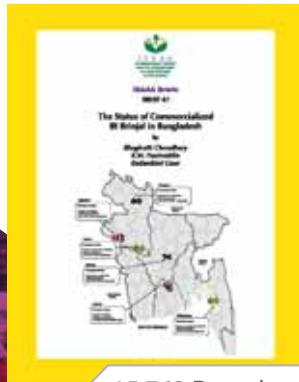
formats. An essay about the study was also released as part of *Viewpoints* published by Biosciences for Farming in Africa (B4FA).



Publications and videos

New materials on crop biotechnology and related topics were developed to ensure unwavering flow of information and interest on the topics.

A brief on *The Status of Commercialized Bt Brinjal in Bangladesh* (ISAAA Brief 47) was published by the ISAAA South Asia Office narrating the story of Bt brinjal in Bangladesh, from scientific and biosafety assessment up to the commercial release and initial cultivation of the crop by Bangla farmers.



15,762 Downloads

A new monograph titled *Straight from the Scientists: Biotech Experts' Perspectives and Experiences in Informing the Public* was developed based on the results of a science communication study investigating the public engagement activities and aspirations of scientists and academics from the field of biotechnology. This monograph is the sixth addition to ISAAA's Biotech Communication Series.

Three new Pocket Ks on *Nitrogen Use Efficient Biotech Crops*, *Biotechnology in Ornamental Plants*, and *Bt Eggplant* were released in a new format optimized for mobile reading.

Short infomercials were uploaded to the ISAAA website focusing on *What Do People Say About Biotech* and *Biotech Crop Adoption in 2013*.

Infographics on *Contribution of Biotech Crops to Sustainability* was also developed based on PG Economic's report on global socio-economic and environmental impacts of GM crops.

www.isaaa.org/resources/videos/
www.isaaa.org/resources/publications/
www.isaaa.org/resources/biotechinfomercials/



681 Downloads



3,389 Downloads



2,523 Downloads



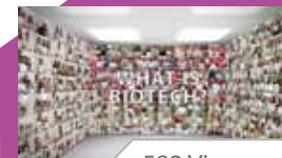
2,329 Downloads



7,265 Downloads



1,287 Views



582 Views

Weekly update on crop biotech

ISAAA's weekly e-newsletter on crop biotechnology, *Crop Biotech Update*, has been redesigned to highlight top news stories of the week, updates on GM approvals, and latest publications on biotech. The CBU articles are accessed through online

subscription, RSS feed, KC website (www.isaaa.org/kc), Send to a Friend form, and other list services that capture the articles.

<http://www.isaaa.org/kc/cropbiotechupdate/>

GM Approval Database

ISAAA provides the latest verifiable approval information on GM crop events through the GM Approval Database. The database now offers convenient navigation and simplified content for public use. It now contains 354 events representing 27 crops. Links to related biosafety information are also available in the online portal.

<http://www.isaaa.org/gmapprovaldatabase/>

550,041 Pageviews



RSS Feeds

1,129,186 Views



MailChimp

18,806 Subscribers

SmartEmail24

597,714 Subscribers



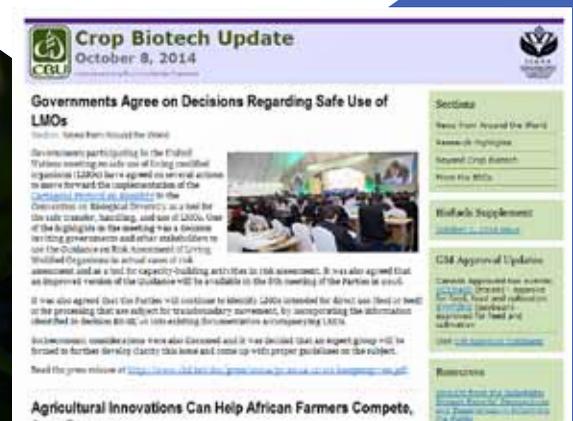
CBU Articles

511,524 Views



Send to a Friend

222,618 Times used



Social networking biotechnology

ISAAA has received 1,645 likes on Facebook and 2,230 followers on Twitter. Through these social media platforms, ISAAA was able to relay the latest information on biotechnology and biotech crops. Furthermore, engagements were fostered to different stakeholders from over 40 countries through discussions online. These engagements gave rise to a group of loyal and avid followers who reshare ISAAA posts leading to multiplicity of biotech information on the web.

The ISAAA blog also had 34,457 pageviews since the first post in 2012. The blog entry *How Biotech Corn Transformed a Farmer's Life and Made Him the Community's VIP* was picked up and republished in several publications and other online portals on biotechnology. Through these social media pages, ISAAA reaches a more diverse audience and promote interactive discourse on crop biotechnology.



/isaaa.org

1,645 Likes



/isaaa_org

2,230 Followers



isaaablog.blogspot.com/

34,457 Pageviews



Communication research

A survey was conducted by ISAAA to investigate how university professors and public sector scientists in Indonesia, Malaysia, and the Philippines fulfill their role in biotech communication. Results showed that the biotech experts acknowledge their role in public engagement; however they devote only a small portion of their time for such activities. Only 10 percent said that they have attended formal training in communicating science. Majority said that they are willing to engage more in science communication with proper training and opportunities.

The results of the study were presented in Salvador, Brazil during the 13th

International Public Communication for Science and Technology. The paper was also one of the finalists in the best paper and best poster competitions of Crop Science Society of the Philippines and the Philippine's National Academy of Science and Technology, respectively.

The research article was published in the *Philippine Journal of Crop Science*.



Only
10%
attended
training in
communicating
science



Networking and capacity building

ISAAA's biotechnology information network had its annual meeting in Hanoi, Vietnam in March. Representatives from 15 countries attended the meeting to present their latest achievements and discuss new strategies in biotech communication.

ISAAA staff were invited as resource speakers in various events such as

science communication workshop in Uganda; regional workshop on enhancing communication skills in Thailand; media practitioners workshop in Indonesia, Malaysia, Philippines, and Vietnam; agri-biotechnology workshops in Vietnam; and planning workshop on global biotech advocacy in the U.S.

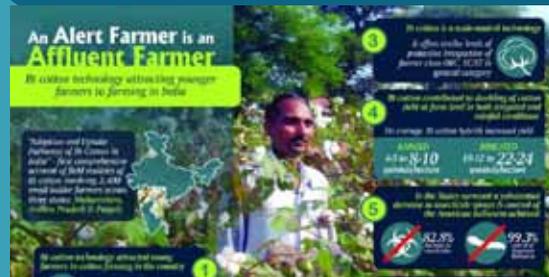


BIC Initiatives

The Biotechnology Information Centers (BICs) continue to be at the forefront of public engagement on crop biotechnology through a combination of interpersonal communication modes and an array of media formats.

2014 Highlights

India



- infographics on 7 Wonders of Bt Cotton, ISAAA; The Go-To-Source of Information for GM Crops; and Bt Brinjal – Safer, Better and Affordable
- video on The Story of Bt Brinjal in India
- launch of The Adoption and Uptake Pathways of Bt Cotton in India report in cooperation with Indian Society for Cotton Improvement (ISCI)

Pakistan



- biotech discussion sessions at international conferences
- Arisen newsletter covering biotech related news
- new BIC chapter opened in Lahore, the agricultural hub of Pakistan

Bangladesh



- online newsletter *BanglaBiotech*
- consultation meeting and seminar on land agriculture
- biotech essay writing contest for college students

China



- dialogues between scientists and educators
- symposium on importance of genetics in improving lives attended by more than 300 researchers, educators, college and graduate students from research institutes, universities, and biotech companies
- transgenic safety and public awareness forum during the 8th China Bioindustry Convention

Vietnam



- workshops on the benefits of agri-biotech for media and policy makers
- GM crops seminar for farmers
- articles on GM crops released in the *Science and Development Journal* (30,000 circulation)

Thailand



- biotech and biosafety workshop
- workshop on macroeconomics, fiscal policy and management for the National Economic and Social Advisory Council (NESAC) working committee
- workshop on modern biotechnology and biosafety

Japan



- agriculture biotechnology symposia for researchers, students, university faculty, consumers and farmers
- biotech cartoon contest
- translation of selected CBU articles

Philippines



- regional workshop for media practitioners
- policy roundtable on building capacities for agricultural competitiveness in SEAsia
- science communication workshop for key personnel of Philippine agriculture department

Iran



- centennial ceremony for Dr. Norman Borlaug
- peer-reviewed journal *Biosafety* in Persian
- live TV broadcasts on the importance of modern agricultural biotechnology

Brazil



- translation and distribution of ISAAA publications

Malaysia



- increasing reach through *The Petri Dish* (India, Iran, Vietnam and Indonesia)
- international and local meetings on trends in biotechnology (co-organizer)
- exhibit at BioBorneo 2014

Indonesia



- workshops on benefits of potato breeding
- media workshop on biotechnology
- seminar on biotech and Islam

Uganda



- sensitization workshops for community leaders, farmers' associates, teachers, religious leaders, and the youth
- participation in radio and TV talk shows
- essay contest

Egypt



- Bt cotton field visits
- participation in biotech-related meetings
- news magazine *Science Carnival*

East and Central Africa



- annual study tour to Bt cotton fields in Burkina Faso
- coordination of Open Forum on Agricultural Biotechnology - Kenya Chapter
- key biotech stakeholders meeting

West Africa



- partnership with network of journalists and advocacy group
- Brief 46 launch in Benin, Nigeria, Ghana and Togo
- media workshop in Ghana

ISAAA in Asia

The Asia program includes technology development support, capacity building on biosafety regulation, public information and outreach, and impact assessment studies which are initiated by ISAAA SEAsiaCenter.



Support to Bt eggplant research and communication

ISAAA provides support to the research and development of Bt eggplant, a public-sector product developed to eliminate pest damage, reduce use of pesticides, and increase income of farmers. This project is led by the University of the Philippines Los Baños, Institute of Plant Breeding (UPLB-IPB) with support from Agricultural Biotechnology Support Project II (ABSPII) of Cornell University, USAID, and the Philippine Department of Agriculture Biotechnology Program Office (DA-BPO). Field trials of Bt eggplant were halted in 2013 in accordance with the

Philippine Court of Appeals' decision on the *Writ of Kalikasan* case which is currently on appeal with the Supreme Court. The project released open-pollinated and hybrid varieties of the non-Bt counterparts and focused on massive information dissemination activities to inform the public about the potential benefits of Bt eggplant.



Capacity building on biotechnology and communication

Agricultural biotechnology

Trainings on basic biotechnology (BIOTECH 101), bioinformatics, and genomics were conducted for representatives of key government research institutions in the Philippines to equip them with knowledge and skills to maximize their roles and functions. Participants of BIOTECH 101 signed a Declaration of Support to biotechnology, signifying their appreciation to the contribution of the technology in achieving improved agricultural productivity and food security.

Regional workshops/symposia were organized to empower stakeholders from developing countries. In partnership with US Department of Agriculture, Michigan State University, and Southeast Asia Food and

Agricultural Science and Technology Center, and Bogor Agricultural University, a workshop on agri-biotechnology was conducted in Bogor, Indonesia to stakeholders from India, Indonesia, Japan, Philippines, Sudan, and Vietnam.

In collaboration with USDA Foreign Agricultural Service and US-APEC Technical Assistance to Advance Regional Integration (ATAARI), a workshop on plant biotechnology was held in Beijing, China. This enabled 12 representatives of APEC member-economies to identify actions to implement or resources to utilize in overcoming market or regulatory constraints in moving biotech products. The participants also gained insights on how to

effectively communicate biotech and foster public confidence on the technology.

Symposia on the benefits of agri-biotechnology were held in Hanoi, Vietnam for representatives of government ministries, key provincial government and agricultural officials.



Biosafety regulations

ISAAA takes part in discussions on biosafety and regulatory matters on biotechnology. The Regional Asian Preparatory Meeting for the Meeting of Parties (MOP7) in Bogor, Indonesia was organized to discuss MOP7 topics and how the outcomes can be practically implemented at the national level. This was attended by 43 representatives of ministries, research institutions, regulatory

agencies, and the academe from China, Cambodia, Malaysia, India, Indonesia, Philippines, and Vietnam.

ISAAA also provided support for Filipino delegates to attend meetings on Global Low Level Presence Initiative (GLI) and FAO Technical Consultation on low level presence; and the ASEAN Genetically Modified Food Testing Network (ASEAN GMF).



Science communication

Representatives from different Philippine research institutions were equipped with necessary knowledge and tools on effective science communication during a two-day workshop organized by ISAAA under its collaborative project with DA-BPO. Aside from the lectures on science communication principles and applications, the participants also learned to develop message maps

and infographics as tools in effective communication of biotech.

lectures and mock interviews with journalists.

Bt eggplant project collaborators and representatives from other key agencies attended the *Facing the Media* workshop facilitated by Probe Media Foundation. This activity equipped the participants with proper knowledge and techniques on handling media interviews through

Public information and outreach

Several information, education, and communication activities were initiated to enable continuous information sharing about the benefits of biotechnology. Some of the initiatives resulted to stronger alliances with various stakeholders and fostered greater acceptance of crop biotechnology, particularly for Bt eggplant.

In cooperation with the Philippine DA-BPO, ISAAA participated and supported the celebration of the 10th National Biotechnology Week in November 2014. ISAAA and SEARCA BIC initiated Biotech Shorties, a video-making contest on the benefits and potentials of biotechnology.

The power of radio in reaching the public was harnessed through *Radio Technolohiya*, a biotech-on-air program aired in the Philippines every Friday at DZRB 738 and also online.

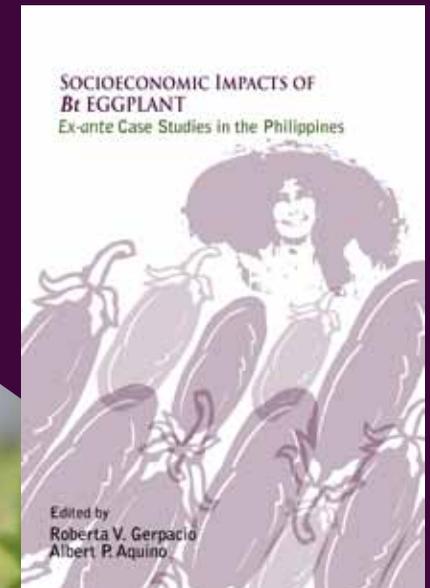
Biotechnology experts discussed latest developments in biotechnology and related fields. Listeners are also engaged in the program through biotech trivia contests.

Public dialogues on Bt eggplant were held in Pangasinan and Laguna. This was attended by farmers, students, local government officials, agricultural technicians, and other stakeholders in the Philippines. After the activity, the participants signed a Declaration of Support for the commercial release of Bt eggplant.



Impact assessment of biotech crops

ISAAA released the book *Socio-economic Impacts of Bt Eggplant: Ex-ante Case Studies in the Philippines*. The book is based on the results of completed impact assessment studies on Bt eggplant in the Philippines, which include potential economic, environmental and health impacts, and market prospects. The book also features complementary studies on insecticide use in eggplant production, and eggplant marketing and industry supply chain.



http://www.isaaa.org/resources/publications/socioeconomics_impacts_of_bt_eggplant/download/

ISAAA in Africa

The Africa program includes various activities focused on communication and policy advocacy, capacity enhancement, regional initiatives, and international networking. These activities were initiated by ISAAA *AfriCenter*.



Brief 46 launch in African countries

AfriCenter facilitated the launching of ISAAA Brief 46, *Global Status of Commercialized Biotech/GM Crops: 2013* in 18 African countries, particularly Benin, Burkina Faso, Cote d'Ivoire, Egypt, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, and

Zimbabwe. The launches provided an opportunity for stakeholders to discuss the latest developments in research, commercialization, and regulation of biotech crops. The events also garnered significant media coverage.

OFAB: Platform for biotech discourse in Africa

AfriCenter handles the activities of Open Forum on Agricultural Biotechnology (OFAB) Kenya chapter which focus on regular engagement of stakeholders to foster awareness and appreciation of agricultural biotechnology in the continent. The sessions in 2014 were focused on topics and engagements towards lifting the temporary ban of importation of GM foods in Kenya. Experts from different disciplines were also invited to discuss different facets of biotechnology. OFAB Kenya was also involved in mobilizing stakeholders to make

submissions during the public hearing called by the government to review GM food safety concerns. The submissions highlighted the benefits of GM crops, history of safe use in other countries, and implications of the ban on food security, trade and commerce, and education, among others.



Preparatory meetings for COP-MOP7

ISAAA takes active participation in equipping COP-MOP delegates with proper knowledge and tools prior to the meeting. For the African delegates, technical meetings with experts from across Africa were organized to develop a background document providing guidance on agenda items of COP-MOP7.

Prior to COP-MOP7, ISAAA and partners organized a final preparatory meeting which assembled 33 participants from different countries. This meeting enlightened the delegates on the modalities and procedures of the MOP meetings and agenda issues for MOP7.

A COP-MOP7 side event was hosted by AfriCenter which focused on *Agricultural Biotechnology Trends- What Opportunities for Post-Patent Data Access and Stewardship?*



Communications support for virus resistant cassava research

AfriCenter takes the role in planning and executing the communication and outreach activities for the Virus Resistant Cassava for Africa (VIRCA), which is a collaborative project of Donald Danforth Plant Science Center, Kenya Agricultural and Livestock Research Organization (KALRO),

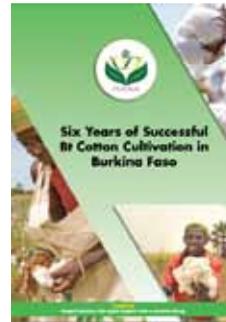
Uganda's National Agricultural Research Organization (NARO), and Science Foundation for Livelihoods and Development (SCIFODE). Through the help of *AfriCenter*, the project communication team developed content for VIRCA's standard communication materials.

Biotechnology biosafety partnerships

A regional biotechnology and biosafety workshop served as a platform for participants from COMESA to discuss proposed strategic objectives and activities for the implementation of biosafety policies.

Biotech IEC materials

AfriCenter developed IEC materials to maximize knowledge sharing on crop biotechnology within Africa.



Biotechnology Information Centers in Africa

AfriCenter guides the BICs in Africa, particularly located in Egypt, Kenya, Uganda, and West Africa. The major initiatives of these BICs are summarized in page 13.



Donors

African Agricultural Technology Foundation (AATF) • Agricultural Biotechnology Support Project II (ABSPII)/Cornell University • Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA) • African Biosafety Network of Expertise • Ain Shams University • Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) • Burkina Biotech Association (BBA) • BioInnovative Program, International Livestock Research Institute (ILRI) • Brazil-Africa Market Place • Cairo University • CropLife Asia • CropLife International • Department of Agriculture, Philippines • International Development Research Center of Canada (IDRC) • John Templeton Foundation • KGT - TBP - Tree Biotechnology Programme • Maharashtra Hybrid Seeds Pvt. Ltd (Mahyco), India • Monsanto • National Crops Resources Research Institute (NaCRRRI) • National Council for Science and Technology Innovation (NACOSTI), Kenya • NEPAD Planning and Coordinating Agency • Program for Biosafety Systems, International Food Policy Research Institute (IFPRI) • Regional Agricultural Reporters' Network (RECOAB) • SEAMEO SEARCA, Philippines • United Phosphorus Limited • US Department of Agriculture • US Department of State • US Agency for International Development (USAID)





For more information:

ISAAA *AfriCenter*
ILRI Campus
Old Naivasha Road, Uthiru
P.O.Box 70 – 00605
Nairobi, Kenya
Email: africenter@isaaa.org

ISAAA *AmeriCenter*
105 Leland Lab
Cornell University
Ithaca NY 14853
U.S.A.
Email: americenter@isaaa.org

ISAAA *SEAsiaCenter*
c/o IRRI, Los Baños
Laguna 4031
Philippines
Email: isaaa-seasia@isaaa.org

www.isaaa.org