

1st Asian Food and Agribusiness Conference 2013: Biotechnology and Global Competitiveness

15–18 July 2013, Taipei

PREAMBLE

The APO in collaboration with the Council of Agriculture, China Productivity Center, and Food and Fertilizer Technology Center organized the Asian Food and Agribusiness Conference: Biotechnology and Global Competitiveness in Taipei, Taiwan (Republic of China), 15–18 July 2013. Inaugural remarks were given by the Deputy Minister of the Council of Agriculture Executive Yuan, Wen-Deh Chen.

Seventy-four participants from 13 APO member countries (Republic of China, India, Indonesia, IR Iran, Republic of Korea, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, and Vietnam) attended. Sixteen resource persons from the Asia-Pacific Association of Agricultural Research Institutions/Asia-Pacific Consortium on Agricultural Biotechnology; Asia BioBusiness Pte. Ltd. Singapore; CropLife Asia Singapore; International Service for the Acquisition of Agribiotech Applications Philippines; Journal of Commercial Biotechnology USA; Malaysian Biotechnology Corporation; Nanyang Technological University Singapore; the Southeast Asian Regional Center for Graduate Study and Research in Agriculture Philippines; US Soybean Export Council, and five organizations of Taiwan shared their expertise through thematic presentations on biotechnology-related topics. The conference consisted of thematic sessions, open forums, panel discussions, poster exhibition, and a visit to the Bio Taiwan 2013 exhibition.

One important outcome of the conference was the widespread view among the experts and participants that biotechnology is one important tool to help APO countries meet the challenges arising from climate change, natural resource constraints, food security, and sustainable development. Additionally, experts shared experience in the many varied, proven, safe, effective applications of biotechnology ranging from biopesticides and biofertilizers to biotech (genetically modified [GM]) crops.

The participants agreed on the following recommendations:

RECOMMENDATIONS

A. Policy/Regulatory Enablers

1. Many countries lack the biosafety regulatory frameworks for application of biotechnology and commercialization of biotech products to benefit all stakeholders. Governments should put in place appropriate biosafety regulatory frameworks for promoting biotech applications in the food, agriculture, forestry, fishery, aquaculture, livestock, and health sectors. These regulations should be science based and in line with international conventions. The regulatory process must be well defined with deadlines to ensure timely review and processing of applications.
2. Commercialization of biotech products faces challenges. In particular, asynchronous international approvals, high regulatory costs, and adverse public perception remain the major challenges in developing and commercializing GM products. There is a need to synchronize international approvals, lower regulatory costs, and create favorable public awareness of the socioeconomic benefits of biotech products and services in order to accelerate acceptance by the public.
3. Biotechnology is innovation based. It requires a set of enablers like intellectual property protection, a sizable market for products, and R&D investment for development of the sector. Countries should learn from the experience of those that have been successful in harnessing biotechnology through using cross-national metrics to benchmark progress and through the sharing of initiatives and experiences, whether successful or unsuccessful.
4. To encourage biotech innovations and commercialization, governments should provide basic support such as financial incentives, a supportive policy environment, and infrastructure (e.g., Pingtung Agricultural Biotechnology Park in Taiwan). Such support will help attract further investments in biotechnology, establish agrobioindustrial SME clusters, and develop academia-industry cooperation, all vital contributors to innovation and revenue generation.

B. Risk Management and Risk Communication

5. There are risks in starting and sustaining agricultural biotech enterprises. Specialized expertise is required to identify and manage such risks. A full understanding of these risks and the stakeholders concerned is needed with reference to the entire spectrum of biosafety regulatory and commercialization requirements for biotech products.

6. There are still some concerns raised by the general public on the cultivation of biotech/GM crops. Experience has shown that it is important to treat all such concerns seriously. There is a need to address those concerns directly through appropriate communication strategies including the use of risk communication tools. Both public and private groups in charge of biotech commercialization need to develop proactive strategies and plans to foster public acceptance and promote constructive dialogue on biotechnology. Communication strategies based on science-based positive messages and using the APP (anticipate, prepare, and practice) paradigm are recommended.
7. One of the leading countries in Asia to approve a GM food crop for planting by farmers was the Philippines. The approval was made possible through a science-based regulatory system and by addressing myths and misconceptions about GM crops. Considerable expertise now resides in the national system within the Philippines. This experience should be tapped to conduct communication activities aimed at both internal and external stakeholders during R&D, product development, and commercialization. Such activities should be carefully designed to recognize stakeholders' perceptions, build trust, and be flexible and effective even under high-risk situations.

C. Investment

8. Many Asian countries have invested heavily in public-sector biotech R&D in anticipation of the growing demands to remain food secure. Biotechnology as a relatively new agricultural technology has seen high returns on investment. However, in order for the benefits of biotechnology to be realized fully, a key structural requirement is the existence of science-based biosafety regulatory frameworks and their operational implementation.
9. Agriculture requires continuous innovations to keep up with the needs of the marketplace, farmers, and consumers. But agricultural technologies require significant investments in funding and time, especially potentially “game-changing” technologies such as biotechnology. While the private sector has large investments in biotech R&D, this is dwarfed collectively by public investments, especially in Asia. There is a great need to optimize and synergize, at the country level, biotech applications emanating from both the private and public sectors and to explore ways for both sectors to work toward expediting the delivery of biotech benefits to farmers and consumers.

10. Many Asian countries face common challenges in meeting food and feed security needs. Biotech applications are the solution to address both challenges. A significant barrier to the use of biotechnology is the heavy investment required, especially by governments. Countries such as Malaysia and IR Iran have announced national biotechnology policies and established institutionalized entities to spearhead and attract foreign direct investment. Special business-friendly investment terms offered by governments such as the Malaysian government have demonstrated their attractiveness for joint-venture business entities to apply biotechnology in food production. Asian countries need to learn from one another and share experiences as well as coordinate efforts between governments, academic communities, local private companies, and foreign investors to offer a modality to accelerate the growth of the biotech sector.

D. Biotechnology for Green Productivity/Technology Solutions

11. “Green food production” has become essential given declining water, energy, labor, and land resources to grow more food to meet increasing demand. The growth in crop yields has slowed down or stagnated over the past two decades or so. Such trends are more pronounced in rice and wheat, two key crops that have not benefited from biotechnology, than in biotech-enhanced maize and soybeans. In the coming decades, countries will have to use biotechnology for green food production in order to deter food insecurity and to address the anticipated effects of climate change.
12. Animal waste is a growing problem in Asia due to the increased demand for protein. It is a major source of greenhouse gas emissions. Livestock biogases include methane, nitrous oxide, hydrogen sulfide, and carbon dioxide. Strategies to address biogas emissions such as biodesulfurization technology using bacterial biofilters as used in the Republic of China can be utilized to treat the large amounts of livestock biogas before it is used as clean energy in farming and other sectors.

E. Strategies for Sector Advances

13. Non-GM biotech applications are much easier to commercialize and receive public acceptance than GM biotech applications. Many non-GM biotech applications, such as biofertilizers, biopesticides, and tissue culture, are already accepted in Asian countries. Countries are urged to use the experience gained from public acceptance of such non-GM applications to support GM biotech applications.

14. Biotech applications are varied, with a very broad scope, such as production inputs (biofertilizers, biopesticides, and animal vaccines), technologies (bioreactors, tissue culture, GM), and target crops and animals. Countries need to prioritize biotech applications appropriately to meet their needs, as has been done by the Republic of China, and provide adequate policy, financial, and logistical support to ensure success. Support mechanisms include basic research in selected areas, industry-university cooperation, industrialization promotion programs, and product marketing.
15. Biotechnology has considerable potential to produce additional food from declining water and land resources while mitigating climate change impact, but its commercialization is constrained by unfounded perceptions of risk. International organizations (e.g., the APO), regional organizations (e.g., ASEAN and SAARC), NGOs, and agribiotech companies should continue to sensitize policymakers and planners to the potential contribution biotech applications can make to ensure national food security and socioeconomic development of the farming community.

At the end, the participants resolved that they would do their utmost to contribute to advances in biotech applications with due safeguards for achieving national food and nutrition security in their countries through utilizing and disseminating the lessons learned from this conference.