

Q&As on FAO's International Technical Conference on Agricultural Biotechnologies in Developing Countries (ABDC-10)

Q. Why is FAO holding a conference on biotechnologies?

A. With more than a billion people hungry in the world, with climate change threatening the livelihoods of farmers, fishers and forest-dependent people who are already vulnerable and food insecure, and with three billion more mouths to feed by 2050, business-as-usual in agriculture is no longer good enough. Agricultural biotechnologies provide opportunities to address the significant challenges of ensuring food security without destroying the environmental resource base. A major objective of this Conference is to take stock of the application of biotechnologies across the different food and agricultural sectors in developing countries. We expect to learn from the past successes and failures and chart a better course for the future. The timing for the conference is very opportune as it takes place in the wake of the World Summit on Food Security held last November which noted that agriculture in the 21st century faces many challenges if it is to double food production by 2050, particularly in developing countries. In this context, the conference will explore the options and opportunities from biotechnologies for food and agriculture in order to face the challenges of food insecurity, climate change, and natural resource degradation.

Q. Who will attend the Conference?

A. Participants will be from delegations of FAO's 191 Member States; from the United Nations and its specialized agencies; other intergovernmental organizations; international non-governmental organizations (including private sector organizations) and international civil society organizations; as well as members of the Conference's international Steering Committee, that is chaired by Professor M.S. Swaminathan in Chennai, India.

Q. Who are the partners for this FAO Conference?

The conference is hosted by the Government of Mexico and co-sponsored by the International Fund for Agricultural Development (IFAD). The Consultative Group on International Agricultural Research (CGIAR), the Global Forum on Agricultural Research (GFAR), the International Centre for Genetic Engineering and Biotechnology (ICGEB) and the World Bank are major partners. Several intergovernmental and non-governmental organizations and regional fora are also organizing parallel sessions at the conference. These include the UN Conference on Trade and Development (UNCTAD), the UN Industrial Development Organization (UNIDO), the World Intellectual Property Organization (WIPO), the International Union for Conservation of Nature (IUCN), Oxfam International, the Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA), the Asia-Pacific Association of Agricultural Research Institutions (APAARI) and the Forum for Agricultural Research in Africa (FARA). All details of the Conference programme are available at <http://www.fao.org/biotech/abdc/prog/en/>.

Q. What does FAO mean by 'agricultural biotechnologies'?

A. The term agricultural biotechnologies covers a broad range of technologies used in food and agriculture, for a number of different purposes such as the genetic improvement of plant varieties and animal populations to increase their yields or efficiency; genetic characterization and conservation of genetic resources; plant or animal disease diagnosis; vaccine development; and improvement of feeds. Some of these technologies may be applied to all the food and agricultural sectors, such as the use of molecular markers or genetic modification, while others are more sector-specific, such as tissue culture (in crops and forest trees), embryo transfer (livestock) or sex-reversal (fish). Note, the term agriculture includes the production and processing of crop, livestock, fish and forestry products, so the term 'agricultural biotechnologies' encompasses their use in any of these sectors.

Q. What is the relationship between agricultural biotechnologies and genetically modified organisms (GMOs)?

A. A genetically modified organism (GMO) is an organism in which one or more genes (called transgenes) have been introduced into its genetic material from another organism. The genes may be from a different kingdom (e.g. a bacterial gene introduced into plant genetic material), a different species within the same kingdom or even from the same species. In crops, genetic modification has had limited but real success in modifying a few simple input traits in a small number of commercial commodity crops, which have also been adopted by some developing countries' farmers. However, the major breeding and crop management successes to date have come from non-transgenic biotechnologies encompassing the full range of agronomic traits and practices relevant to developing countries' farmers. No GM livestock or fish have been commercially released in the world while commercial release of GM forest trees is reported in just one country, China.

Over-emphasis of, and polarization within, the "GMO debate" has distracted and diverted scientific and policy resources from focusing on the needs of poor rural producers. The controversy regarding GMOs in food and agriculture over the past decade has had significant effects in stalling, reducing and redirecting some public sector research efforts in agricultural biotechnologies, including non-GMO biotechnologies, from addressing the needs of the poor rural producers in developing countries, in addition to diverting significant scientific resources from research to regulation. This conference is dedicated to the wide range of agricultural biotechnologies available and GMOs are not its main focus.

Q. What is FAO's position on GMOs?

A. Firstly, despite what is sometimes said, we do not need GMOs to resolve the current world hunger problem. There is enough food for everybody, but millions of people are poor and simply do not have the money to buy food – that is why access to food is a major problem.

Secondly, FAO recognizes that genetic modification can help in some circumstances to increase production and productivity in agriculture, forestry and fisheries and thus contribute to food security. However, FAO is also aware of the concern about the potential risks that GMOs pose regarding the effects on human and animal health and the environment. FAO is constantly striving to determine the potential benefits and possible risks associated with the application of modern technologies to increase plant and animal productivity and production. However, the responsibility for formulating policies and making decisions regarding these technologies rests with the Member Governments themselves.

Q. What is FAO's position on GM maize in Mexico?

A. As mentioned above, the responsibility for formulating policies and making decisions regarding GMOs lies with the individual FAO Member Governments. FAO does not intervene regarding the policies or decisions, including those related to GMOs, of its Member Governments and so it has no position regarding cultivation of GM maize in Mexico.

Q. Can agricultural biotechnologies help smallholder farmers?

A. Yes, and this is clear from the many case studies provided in the background documents prepared by FAO for this conference (<http://www.fao.org/biotech/abdc/backdocs/en/>). For example, the highly successful rice hybrids known as New Rice for Africa (NERICA) have doubled rice yields and substantially boosted farmers' incomes in those countries where they have been introduced. NERICA is derived from crossing two species of cultivated rice, the African rice and the Asian rice, combining the high yields from the Asian rice with the ability of the African rice to thrive in harsh environments. In the Satkhira and Chittagong districts of Bangladesh, the use of artificial insemination to raise milk yields of dairy cattle has increased incomes and employment for smallholders in community-based

programmes. In India, the use of DNA-based methods to detect pathogens was a key component of better management practices that were applied for small-scale shrimp farmers in Andhra Pradesh and which led to significant improvement in profits and reduced shrimp disease risks for farmers. The FAO documents also provide examples where DNA-based tools have been applied to improve traditional fermentation-based food/drink production systems to create home-grown industries in Southeast Asia.

Q. Can agricultural biotechnologies benefit biodiversity?

A. A number of agricultural biotechnologies can play an important role in the characterization and conservation of agricultural biodiversity. These include the use of molecular markers (i.e. identifiable DNA sequences, found at specific locations of the genetic material), cryopreservation (preservation of genetic material, such as seeds or sperm, at ultra-low temperatures) and reproductive technologies, which can all play an important role in the characterization and conservation of crop, animal, forestry and fishery genetic resources and are being used in developing countries for this purpose. The conference will therefore also cover agricultural biodiversity, which is very timely given that the UN General Assembly has proclaimed 2010 as the International Year of Biodiversity.

Q. Why is the conference being held in Mexico?

A. FAO approached a number of developing countries a year ago and the Mexican Government kindly offered to host this conference. FAO gladly accepted this offer, taking into consideration also that Mexico has excellent conference facilities and travel connections worldwide.