



DECLARATION FROM THE SECOND WORLD SEED CONFERENCE

Responding to the challenges of a changing world: The role of new plant varieties and high quality seed in agriculture

held at the FAO Headquarters in Rome, September 8-10, 2009

World food security: urgent measures on seed needed

Urgent government measures and increased public and private investment in the seed sector are required for the long term if agriculture is to meet the challenge of food security in the context of population growth and climate change.

Governments are strongly encouraged to implement a predictable, reliable, user friendly and affordable regulatory environment to ensure that farmers have access to high quality seed at a fair price. In particular, FAO member countries are urged to participate in the internationally harmonized systems of the Organization for Economic Cooperation and Development (OECD), the International Union for the Protection of New Varieties of Plants (UPOV), the International Treaty on Plant and Genetic Resources for Food and Agriculture (ITPGRFA) and the International Seed Testing Association (ISTA). Participation in those systems will facilitate the availability of germplasm, new plant varieties and high quality seed for the benefit of their farmers, without which their ability to respond to the challenges ahead will be substantially impaired. The conference emphasized the important role of both the public and the private sectors to meet the challenges ahead and the benefits when the two work together. The Second World Seed Conference emphasized that agriculture needs to provide sustainable food security and economic development in the context of current and future global challenges. The Conference highlighted the critical role of new plant varieties and high quality seed in providing a dynamic and sustainable agriculture that can meet those challenges. It concluded that governments need to develop and maintain an enabling environment to encourage plant breeding and the production and distribution of high quality seed. The global seed market has grown rapidly in recent years and is currently worth around US\$37 billion. Cross border seed trade was estimated to be worth around US\$6.4 billion in 2007. The Second World Seed Conference was held at FAO headquarters from September 8-10 and organized in collaboration with the OECD, UPOV, ITPGRFA, ISTA, ISF.

Conference conclusions:

- Plant breeding has significantly contributed and will continue to be a major contributor to increased food security whilst reducing input costs, greenhouse gas emissions and deforestation. With that, plant breeding significantly mitigates the effects of population growth, climate change and other social and physical challenges.
- ITPGRFA is an innovative instrument that aims at providing food security through conservation, as well as facilitated access to genetic resources under its multilateral system of access and benefit-sharing. The multilateral system represents a reservoir of genetic traits, and therefore constitutes a central element for the achievement of global food security.
- Intellectual property protection is crucial for a sustainable contribution of plant breeding and seed supply. An effective system of plant variety protection is a key enabler for investment in breeding and the development of new varieties of plants. A country's membership of UPOV is an important global signal for breeders to have the confidence to introduce their new varieties in that country.
- Seed quality determination, as established by ISTA, on seed to be supplied to farmers is an important measure for achieving successful agricultural production. The establishment or maintenance of an appropriate infrastructure on the scientific as well as technical level in developed and developing countries is highly recommended.
- The development of reliable and internationally acceptable certificates, through close collaboration between all stakeholders along the supply chain for varietal certification, phyto-sanitary measures and laboratory testing, contributes substantially to the strong growth in international trade and development of seed markets to the benefit of farmers.

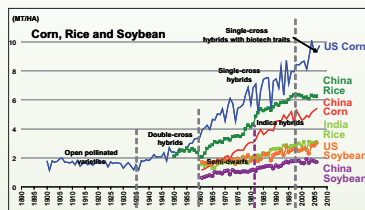




Plant breeding provides harvest security through the introduction of multiple resistances.

Session 1. The role of plant breeding in meeting the multiple challenges of a fast-changing world

- Improved varieties and high quality seeds are basic requirements for productive agriculture, which is the basis of sustainable economic development in developing economies
- Through the efforts of both the public and private sectors, plant breeding has provided an enormous contribution to global agriculture (yield, resistance to biotic stresses, tolerance to abiotic stresses, harvest security, quality traits including nutritional value, etc.)
- Plant breeding has the ability to significantly contribute in solutions to several of the challenges ahead such as food security, hunger alleviation, increasing nutritional values, and higher input costs. Plant breeding and related disciplines and technologies help in mitigating the effects of population growth, climate change and other social and physical challenges
- Intellectual property protection is crucial for a sustainable contribution of plant breeding and seed supply. There are still many tools and traits in the pipeline that will prove to be very necessary for the continued supply of high quality varieties and seeds
- Apart from genetic enhancement, other technologies, e.g. quality seed production and seed treatments, contribute substantially to improved seeds, and capacity building in all these areas is urgently needed in developing countries.



Strong Productivity Gains Achieved through Plant Breeding (Sources: USDA, IRRI, FAO)

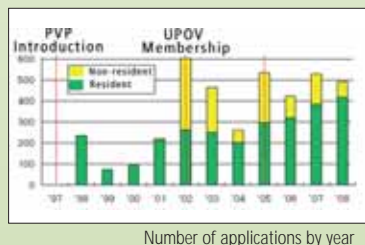


Session 2. The importance of plant genetic resources for plant breeding; access and benefit sharing

- Plant breeding and the sustainable use and conservation of genetic resources are interdependent.
- The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) is a unique and innovative legally binding instrument providing facilitated access to genetic material for plant breeding at the international level
- The Multilateral System (MLS) of the ITPGRFA provides a consistent Access and Benefit-sharing option for plant breeding activities
- The Standard Material Transfer Agreement (SMTA) of the ITPGRFA is a contract between the provider and the recipient that is simple to use and facilitates access to germplasm
- The involvement of the private sector in the design of Access and Benefit-sharing schemes is necessary for a well functioning Access and Benefit-sharing mechanism
- Material in the MLS is a source of genetic traits and characteristics of interest
- The full success of the ITPGRFA and its MLS will depend on local, national and regional implementation, as well as on the availability of funds at the local, national and regional level.

Session 3. Plant variety protection

- The number of new varieties increased after the introduction of plant variety protection
- Introduction of the UPOV system of plant variety protection was associated with increased breeding activity and with the encouragement of new types of breeders, such as private breeders, researchers and farmer-breeders. The introduction of PVP was also associated with the development of partnerships, including public-private cooperation
- Introduction of plant variety protection was associated with the development of new, protected varieties that provided improvements for farmers, growers, industry and consumers, with overall economic benefit
- One of the benefits of plant variety protection is to encourage the development of new, improved plant varieties that lead to the improved competitiveness in foreign markets and to development of the rural economy
- Membership of UPOV was associated with an increase in the number of varieties introduced by foreign breeders, particularly in the ornamental sector
- The breeder's exemption, whereby protected plant varieties can be freely used for further plant breeding, is an important feature of the UPOV system which advances progress in plant breeding
- Access to foreign plant varieties is an important form of technology transfer that can also lead to enhanced domestic breeding programs.



Number of applications by year



Farmer breeder Kim Yeong Hae (right) – breeder of protected rice variety "Keumsung"

Session 4.

The importance of quality seed in agriculture

- The session demonstrated the importance of seed quality for crop productivity and agricultural production. It has underlined, that a lack of information on seed quality could result in crop failures and has the potential to threaten food security for whole countries
- The determination of seed quality parameters requires a broad knowledge of plant and seed physiology, taxonomy and botany and requires intensive scientific studies and research
- The application of seed quality evaluations requires a detailed knowledge regarding seed production, seed marketing, seed regulations and the seed sector
- Since 1924 the International Seed Testing Association (ISTA) has been the impartial and objective platform where leading seed technologists and researchers have come together to discuss relevant scientific progress and make the necessary definitions regarding seed quality and how to measure it
- Currently in developing countries there is not an adequate seed quality assurance infrastructure with respect to seed testing and this is required to increase crop productivity and provide enhanced food security in these countries
- The evolution of seed quality determination has not reached an end point and there are interesting developments in the pipeline that take account of the changing needs of the market. These will make tests and their applications more relevant, effective, robust, quicker and cheaper
- Significant cuts in scientific research and education has reduced the possibility for young academics to acquire the necessary seed technology skills
- In the seed technology area transparency in and scientific exchange of the latest research results remain of crucial importance for continued progress
- Uncompetitive salaries for seed analysts in developed countries make a career in seed quality control unattractive for young people.



Session 5.

Facilitation of trade and market development

- Global seed market has grown rapidly in recent years and is currently estimated at about US\$37bn. Europe, North America and Asia account for almost four-fifths of the global seed trade. For 2007, the international seed trade was estimated at US\$ 6.4bn
- The use of international certificates for varietal certification, phytosanitary measures and laboratory testing has greatly facilitated the development of the international seed trade
- Production and marketing of certified seed of all agricultural crops is highly regulated at both the national and international level. A transparent and efficient regulatory system is crucial to ensure that farmers have access to high quality seed at a reasonable price
- The international regulatory framework consists of certification based on varietal identity and varietal purity (OECD, AOSCA), phytosanitary measures (IPPC, WTO-SPS, NPPO), plant variety protection (UPOV) and seed testing (ISTA, AOSA, etc.)
- Regional seed regulatory frameworks have been developed and harmonised to facilitate regional trade e.g. Central America, Mercosur, EAC, SADC, ECOWAS, etc. Regional standards, such as those of the EU, are closely aligned with international standards such as those of the OECD and clearly set out the registration and certification conditions for the marketing of seed
- The increasing use of harmonised international certification procedures on varietal identity and varietal purity helps to facilitate the import and export of high quality seed by assuring consumer confidence and reducing technical barriers to trade
- Good cooperation between the public and private stakeholders in developing and setting standards that are internationally acceptable has facilitated the issuing of certificates which, in turn, has contributed to the growth in trade
- Implementation of measures to prevent the introduction and spread of plant pests is critical to ensuring the development of a viable and sustainable global seed market. The International Standards for Phytosanitary Measures (ISPMs) provide useful guidance on the application of phytosanitary measures to the international seed trade.





“Plant Breeding for an Evergreen Revolution and for Meeting the Challenge of Feeding a Growing Population in an Era of Climate Change”

Key Note Speech by Mr. M. S. Swaminathan, UNESCO Chair in Ecotechnology, Member of Parliament of India and Father of the Indian Green Revolution

“...the member countries of FAO have adopted ‘Sustainable intensification of crop production’ as one of its strategic objectives. This approach requires the integration and harmonization of all appropriate crop production policies and practices for increasing crop productivity in a sustainable manner to meet key millennium development goals of reducing hunger and preserving the environment.”

“How will governments respond to these challenges?”

“Primarily, there should be an adequate investment in agriculture from both domestic and external sources. [...]

“Secondly, Governments should develop appropriate policies and investment-friendly legal and regulatory framework to facilitate private sector investment in the seed and agro-industries. The synergy between the public and private sector must be harnessed to achieve this goal.” Mr Shivaji Pandey, FAO



“It was seen two years ago that food production levels are on a knife edge and vulnerable to weather fluctuations and government policies, with a significant impact on food security all over the world. The Conference has shown that the development of new varieties has significantly contributed and certainly will continue to be a major contributor to food security in the frame of an evergreen agriculture, provided that affordable quality seed of these new varieties reaches farmers. I am pleased to see that the objective of the Conference, “to identify the key elements necessary to ensure an enabling environment for the development of new varieties, the production of high quality seed and their delivery to farmers” has been achieved. The conclusions of the Conference should be

useful to policy makers to put in place, improve and implement efficient seed laws and regulations in their respective countries as well as to decide upon the crucial long term investments in research, training and infrastructure, the public and the private sectors working together to meet the challenges ahead.” Mr Bernard Le Buanec, Chairman of the Organising Committee

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