



Food and Agriculture
Organization of the
United Nations



The International Treaty
ON PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE

**Views, Experiences and Best Practices as an example of possible options for
the national implementation of Article 9 of the International Treaty**

Note by the Secretary

At its [second meeting](#) of the Ad hoc Technical Expert Group on Farmers' Rights (AHTEG), the Expert Group agreed on a revised version of the [template](#) for collecting information on examples of national measures, best practices and lessons learned from the realization of Farmers' Rights

This document presents the updated information on best practices and measures of implementing Article 9 of the International Treaty submitted by the Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT) on 23 July 2019.

The submission is presented in the form and language in which it was received.

Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT)

Title of Measure: International Maize Improvement Consortium – Asia (IMIC-Asia)

Summary

In 2010, the International Maize and Wheat Improvement Center (CIMMYT), in collaboration with seed companies, launched the International Maize Improvement Consortium – Asia (IMIC-Asia), a consortium of organizations engaged in maize research, breeding, hybrid production, seed sales and marketing in South and Southeast Asia. Objectives included (1) developing and testing inbred and hybrid maize with abiotic and biotic stress tolerance and high yield potential based on needs and priorities identified by consortium members; (2) improving maize productivity and livelihoods of farmers in rainfed farming areas that have not yet benefited from improved and adapted seeds; and (3) developing capacities of breeders and technical personnel of consortium members in modern maize breeding and breeding informatics. Core component is the establishment of a consortium of small- and medium-size enterprises and research organizations in which all partners contribute to building capacities and technical expertise in maize breeding. Together, they established a strong collaborative testing network for identifying promising pre-release products for further evaluation at the national or state level as a part of the varietal release process. CIMMYT hybrid combinations are in the process of being allocated to interested members for commercialization and deployment to farmers.

Title of Measure	International Maize Improvement Consortium – Asia (IMIC-Asia)
<u>IMPLEMENTING ENTITY</u> ¹ Responsible institution/organization (name, address, website (if applicable), e-mail address, telephone number(s) and contact person)	Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT) Km.45 Carretera México-Veracruz, El Batán, Texcoco, Estado de México, C.P. 56237, MÉXICO Tel: +52 (55) 5804 2004 or +52 (505 952 1900 https://www.cimmyt.org/ email contact: Rosalia Munoz at R.Munoz@cgiar.org

¹ “Mandatory Information” as requested for this July 2019 update is denoted by categories underlined and in capital letters in the left-hand column. In some cases, information submitted in January 2019 was combined with new or revised information, and some text has been rearranged.

Title of Measure	International Maize Improvement Consortium – Asia (IMIC-Asia)
Type of organization	Non-profit CGIAR center (maize and wheat agriculture research institution)
<u>PARTNERS</u> Collaborating/ supporting institutions/ organizations/ actors, if applicable (name, address, website (if applicable), e-mail address, telephone number(s))	<u>Seed companies</u> – funders
<u>START YEAR</u>	2010
Name(s) of country/countries and geographic outreach in which the measure/ practice is taking place	South and South East Asia
<u>OBJECTIVES</u>	<p>Develop and test inbred and hybrid maize with abiotic and biotic stress tolerance and high-yield potential based on needs and priorities identified by consortium members, especially small- and medium size seed enterprises (SME)</p> <p>Improved maize productivity and livelihoods of farmers in rainfed areas that so far have not benefited from improved and adapted seeds.</p> <p>Capacity of breeders and technical personnel of consortium members strengthened in modern maize breeding and breeding informatics</p>
<u>SUMMARY OF CORE COMPONENTS</u>	Small- and medium-sized public- and private-sector organizations join together as a consortium in which they contribute to building capacity and technical expertise in maize breeding to work toward increased maize productivity, ultimately improving the livelihoods of smallholder farmers in Asia
<u>KEY OUTCOMES</u>	Consortium members helped to establish a strong collaborative testing network for identifying best-bet pre-release products for further evaluation at the national or state level as a part of the varietal release process. CIMMYT hybrid combinations are in the process of being allocated to interested members, especially small

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	and medium enterprises for commercialization and deployment to farmers
<p><u>LESSONS LEARNED</u></p> <p>Describe lessons learned which may be relevant for others who wish to do the same or similar measures/practices (max 250 words)</p>	<p>Appreciation gained for the vast genetic diversity in CIMMYT-held germplasm, and how the use of cutting-edge molecular breeding technologies can be employed to address abiotic and biotic stresses in maize, including disease resistance, drought, heat and waterlogging tolerance, ultimately to accelerate the pace of product development and to provide farmers with better and more diverse variety options.</p> <p>Asia is one of the most important hubs for accelerating the better use of diverse germplasm by farmers due to highly skilled scientific and technical staff and world-class institutions and infrastructure</p>
<p><u>BRIEF HISTORY</u> (including starting year), as appropriate</p>	<p>Beginning in 2010, CIMMYT launched the first phase of IMIC-Asia, a consortium of private and public organizations involved in maize research and breeding, hybrid production, seed sales and marketing. These organizations partnered with CIMMYT to develop and share improved maize germplasm for impact in South and South East Asia, with a particular view of improving food security and income of smallholders in stress-prone regions. In 2015, IMIC-Asia entered its second phase with continuing and new members.</p> <p>The consortium members helped to establish a strong collaborative testing network for identifying best-bet pre-release products for further evaluation at the national or state level as a part of the varietal release process. CIMMYT hybrid combinations are in the process of being allocated to interested members, especially small and medium enterprises for commercialization and deployment to farmers.</p>
<p><u>CORE COMPONENTS</u> of the measure/ practice (max 200 words)</p>	<p>Consortium of public and private organizations</p> <p>Targeted impact on maize productivity and improvement of livelihoods of smallholders farmers in rain-fed maize production areas in South and South East Asia</p> <p>Capacity of breeders and technical personnel of consortium members – mostly small and medium size enterprises, strengthened in modern maize breeding and breeding informatics</p>

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<u>DESCRIPTION OF CONTEXT and HISTORY</u> of the measure/practice is taking place (political, legal and economic framework conditions for the measure/practice) (max. 200 words)	<p>Maize is a key crop in Asia, and for more than 50 years maize breeders have demonstrated significant improvements in grain yield</p> <p>Consortium member partnerships facilitate the development and testing of pre-release hybrid combinations in multi-location trials supported by members that influence breeding and product priorities, training of breeders (capacity building) and access to germplasm analysis services, field-based phenotyping for abiotic (drought, heat) and biotic (parasites, insects, bacteria, weeds, etc.) stresses; and statistical and genomic data management</p> <p>Access provided to improved CIMMYT-improved Asia-adapted maize germplasm; allocation and licensing process permits CIMMYT hybrids to be commercialized and shared with farmers for cultivation across Asia</p>
<u>ARTICLE 9 PROVISIONS TO WHICH THIS WORK RELATES</u>	9.2 b and 9.3
Template category (benefits to farmers) most relevant for the measure	Facilitation of farmers' access to a diversity of PGRFA through community seed banks, seed networks, and other measures improving farmers' choices of a wider diversity of PGRFA
Other relevant categories	<p>Participatory approaches to research on PGRFA, including characterization and evaluation, participatory plant breeding and variety selection</p> <p>Training, capacity development and public awareness creation</p>
Target group(s) and numbers of involved and affected farmer	Current consortium members: 23 private sector organizations, 1 public sector organization serving smallholder farmers throughout South and South-East Asia (no number available at this time)
Resources used for implementation of the measure/ practice.	<p><i>Resources</i></p> <p>CIMMYT improved inbred lines and hybrids; consortium members' proprietary germplasm; CIMMYT laboratory, statistical/genomic data analysis management, and breeding expertise, administration and oversight of consortium activities</p>

<p>Title of Measure</p>	<p>International Maize Improvement Consortium – Asia (IMIC-Asia)</p>
<p>How has the measure/practice affected the conservation and sustainable use of plant genetic resources for food and agriculture? Please describe the achievements of the measure/ practice so far (including quantification) (max 200 words)</p>	<p>CIMMYT improved inbred lines and hybrids and consortium members' proprietary germplasm are developed and improved, and evaluated in multi-location field trials, which allow for a wider network of locations and quality data available at a lower cost. Consortium members vie for allocation of CIMMYT pre-commercial hybrids, and each successful party is licensed a hybrid for varietal release on a non-exclusive basis.</p>
<p>Other national level instruments that are linked to the measure</p>	<p>None</p>
<p>International agreements or programs that are relevant for this measure/practice?</p>	<p>ITPGRFA</p>
<p>What challenges were encountered along the way (if applicable)? (max 200 words)</p> <p>What would you consider conditions for success, if others should seek to carry out such a measure or organize such an activity? (max 100 words)</p>	<p>Challenges</p> <p>Improving the understanding of genetics of complex traits such as heat stress tolerance and waterlogging tolerance</p> <p>Discovery, validation and deployment of breeder-ready markers for prioritized biotic and biotic stress traits</p> <p>Developing breeding strategies for simultaneous introgression of multiple loci associated with stress resilience in maize</p> <p>Conditions for Success</p> <p>Consortium governance committee comprised of governmental, CIMMYT, and consortium member representatives</p> <p>Well-organized field trials and demonstrations</p>

Title of Measure	International Maize Improvement Consortium – Asia (IMIC-Asia)
	Transparent process for hybrid allocation in place at initiation of consortium
Link to further information about the measure/practice	<p><u>CIMMYT website articles:</u></p> <p>https://www.cimmyt.org/the-international-maize-improvement-consortium-for-asia-amic-asia-partnership-for-targeted-impacts-2/</p> <p>https://www.cimmyt.org/project-profile/international-maize-improvement-consortium/</p>