



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:** Drought tolerant maize provides Extra 9 Months of Food for Farming Families

### Summary

In 2014, the International Wheat and Maize Improvement Center (CIMMYT), in collaboration with the International Institute of Tropical Agriculture (IITA) and with funding provided through the Consultative Group on International Agricultural Research (GIAR) Research Program on Maize, started the implementation of the ‘Drought Tolerant Maize for Africa’ project, which will be continued under the ‘Stress Tolerant Maize for Africa’ project. The objective of the project is to improve food and economic security of Zimbabwean farmers by stabilizing and securing maize food security when drought strikes. Core components include development and dissemination of drought-tolerant (DT) maize varieties to farmers in Zimbabwe to improve maize yields and improve livelihood conditions . Key outcomes so far are improved maize yields (up to 40%) under severe drought conditions, providing smallholders in Zimbabwe an additional nine months of food at no additional cost. Key lessons learned include that Zimbabwean households that grew DT maize experienced a significant increase in total maize production; DT maize thus has the potential to improve food and economic security for many farmers.

Title of Measure	Drought Tolerant Maize Provides Extra 9 Months of Food for Farming Families
<p><b><u>IMPLEMENTING ENTITY</u></b><sup>1</sup></p> <p><b>Responsible institution/organization (name, address, website (if applicable), e-mail address, telephone number(s) and contact person)</b></p>	<p>Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT)</p> <p>Km.45 Carretera México-Veracruz, El Batán, Texcoco, Estado de México,</p> <p>C.P. 56237, MÉXICO</p> <p>Tel: +52 (55) 5804 2004 or +52 (595) 52 1900</p> <p><a href="https://www.cimmyt.org/">https://www.cimmyt.org/</a></p> <p>email contact: Rosalia Munoz at <a href="mailto:R.Munoz@cgiar.org">R.Munoz@cgiar.org</a></p>
<p><b>Type of organization</b></p>	<p>Non-profit CGIAR center (maize and wheat agriculture research institution)</p>

<sup>1</sup> “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.

<b>Title of Measure</b>	<b>Drought Tolerant Maize Provides Extra 9 Months of Food for Farming Families</b>
<b><u>PARTNERS Collaborating/ supporting institutions/ organizations/ actors, if applicable (name, address, website (if applicable), e-mail address, telephone number(s))</u></b>	<p><u>IITA</u> (International Institute of Tropical Agriculture) – co-implementing party</p> <p><u>CGIAR MAIZE CRP</u> – funder</p> <p>This study was conducted under the Drought Tolerant Maize for Africa project, and will be continued under the Stress Tolerant Maize for Africa project.</p>
<b><u>START YEAR</u></b>	2014
<b>Name(s) of country/countries and geographic outreach in which the measure/ practice is taking place</b>	Southeastern Zimbabwe
<b><u>OBJECTIVES</u></b>	Improve food and economic security of Zimbabwean farmers by stabilizing and securing maize food security when drought strikes.
<b><u>SUMMARY OF CORE COMPONENTS</u></b>	CIMMYT addresses severe drought conditions resulting from climate change by developing and disseminating drought tolerant maize varieties, leading to greater maize yields and ultimately improved livelihoods for Zimbabwean farmers
<b><u>KEY OUTCOMES</u></b>	<p>Drought Tolerant (DT) maize varieties were shown to increase maize yields up to 40 percent under severe drought conditions,</p> <p>Zimbabwean smallholder farmers were provided an additional nine months of food at no additional cost to them</p>
<b><u>LESSONS LEARNED</u></b> <b>Describe lessons learned which may be relevant for others who wish to do the same or similar measures/practices (max 250 words)</b>	<p>Consistent with on-station and on-farm trials of DY maize, Zimbabwean households that grew DT maize experienced a significant increase in total maize production; DT maize is higher yielding than non-DT maize varieties in drought conditions</p> <p>DT maize has the potential to vastly improve food and economic security for many poor farmers</p>

<b>Title of Measure</b>	<b>Drought Tolerant Maize Provides Extra 9 Months of Food for Farming Families</b>
<b><u>BRIEF HISTORY</u> (including starting year), as appropriate</b>	In a study beginning in 2014 CIMMYT Drought Tolerant (DT) maize varieties were shown to increase maize yields up to 40 percent under severe drought conditions, providing smallholders in Zimbabwe an additional nine months of food at no additional cost to them.
<b><u>CORE COMPONENTS</u> of the measure/ practice (max 200 words)</b>	CIMMYT development and dissemination of DT maize varieties to address climate change-induced severe drought conditions, ultimately to improve maize yield  By growing DT maize varieties Zimbabwean farmers improve livelihoods, and food and economic security at no additional cost
<b><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)</b>	Zimbabwe is routinely affected by droughts; severity and intensity is expected to increase with changing climates.  CIMMYT is working to combat the effects of recurring droughts due to climate change through the development of drought tolerant maize and risk averting crop management practices.
<b><u>ARTICLE 9 PROVISIONS TO WHICH THIS WORK RELATES</u></b>	<b>9.2 b and 9.3</b>
<b>Template category (benefits to farmers) most relevant for the measure</b>	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
<b>Other relevant categories</b>	Participatory approaches to research on PGRFA, including characterization and evaluation, participatory plant breeding and variety selection
<b>Target group(s) and numbers of involved and affected farmer</b>	Several thousand tons of DT maize seed are disseminated annually in Zimbabwe  200 smallholder farmer households were surveyed for the study
<b>Resources used for implementation of the measure/ practice.</b>	<i>Resources</i>

<p><b>Title of Measure</b></p>	<p><b>Drought Tolerant Maize Provides Extra 9 Months of Food for Farming Families</b></p>
<p><b>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)</b></p>	<p>CIMMYT-held germplasm; CIMMYT-developed DT maize varieties; CIMMYT breeding expertise</p> <p>CIMMYT improved DT maize varieties adapted to Zimbabwean growing conditions combatted effects of climate change and lead to a no-cost increase in maize yield and that improved food and economic security for farmers who grew DT maize. The farmers who grew CIMMYT-developed DT maize yielded on average over 610 kg more maize per hectare than those not growing DT maize in the same region. (This translates to USD \$240/ha or nine months of food supply per household at no additional cost to the household.)</p>
<p><b>Other national level instruments that are linked to the measure</b></p>	<p>None</p>
<p><b>International agreements or programs that are relevant for this measure/practice?</b></p>	<p>ITPGRFA</p>
<p><b>What challenges were encountered along the way (if applicable)? (max 200 words)</b></p> <p><b>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)</b></p>	<p><b>Challenges</b></p> <p>Making DT maize more widely available including to farmers in more remote areas</p> <p>Informing farmers of new DT varieties (proper messaging, appropriate branding on seed bags) and encouraging farmers to use DT varieties</p> <p><b>Conditions for Success</b></p> <p>Making DT maize affordable and widely available in drought stricken regions</p> <p>Farmer education and properly marked seed bags</p>
<p><b>Link to further information about the measure/practice</b></p>	<p><u>CIMMYT website article:</u></p> <p><a href="https://www.cimmyt.org/drought-tolerant-maize-provides-extra-9-months-of-food-for-farming-families/">https://www.cimmyt.org/drought-tolerant-maize-provides-extra-9-months-of-food-for-farming-families/</a></p> <p><u>Published study:</u></p>

<b>Title of Measure</b>	<b>Drought Tolerant Maize Provides Extra 9 Months of Food for Farming Families</b>
	<a href="https://www.tandfonline.com/doi/full/10.1080/17565529.2017.1372269">https://www.tandfonline.com/doi/full/10.1080/17565529.2017.1372269</a>