



Photo: M. DeFreese/CIMMYT

MAIZE focuses on the needs of the poor and disadvantaged in the maize agri-food systems in low- and middle-income countries, especially in sub-Saharan Africa, Latin America and Asia.

**The CGIAR Research Program on Maize (MAIZE) is an international collaboration between more than 300 partners that seeks to mobilize global resources in maize research and development to achieve a greater strategic impact on maize-based farming systems in Africa, South Asia and Latin America.**

MAIZE combines the strength of farming communities, international and local public and private sector partners, policy makers and development organizations to ensure that CGIAR's maize research-related contribution effectively contributes to the following vision of success:

- ▶ Increasing demands for food are met and food prices are stabilized at levels that are affordable for poor consumers.
- ▶ Farming systems are more sustainable and resilient, despite the impacts of climate, and their dependence on irrigation and increasingly expensive fertilizers is reduced.
- ▶ Increased production in developing countries is achieved mainly through higher yields, thus lessening pressure on forests, hill slopes and other crops.
- ▶ Poverty and malnutrition are reduced, especially among women and children, and a greater proportion of women and young adults are able to engage in profitable and environmentally friendly farming.
- ▶ Developing countries are able to compete more vigorously in export markets and ensure benefits for a wide range of actors in the value chain of major food crops.
- ▶ Disadvantaged farmers and countries gain better access to cutting-edge technologies through innovative partnerships, in particular with advanced research institutes and the private sector.
- ▶ A new generation of scientists and other professionals is guiding national agricultural research across the developing world and working in partnership with CGIAR, the private sector, policy makers and other stakeholders to enhance efficiency and impact.

# Goals and Targets by 2030

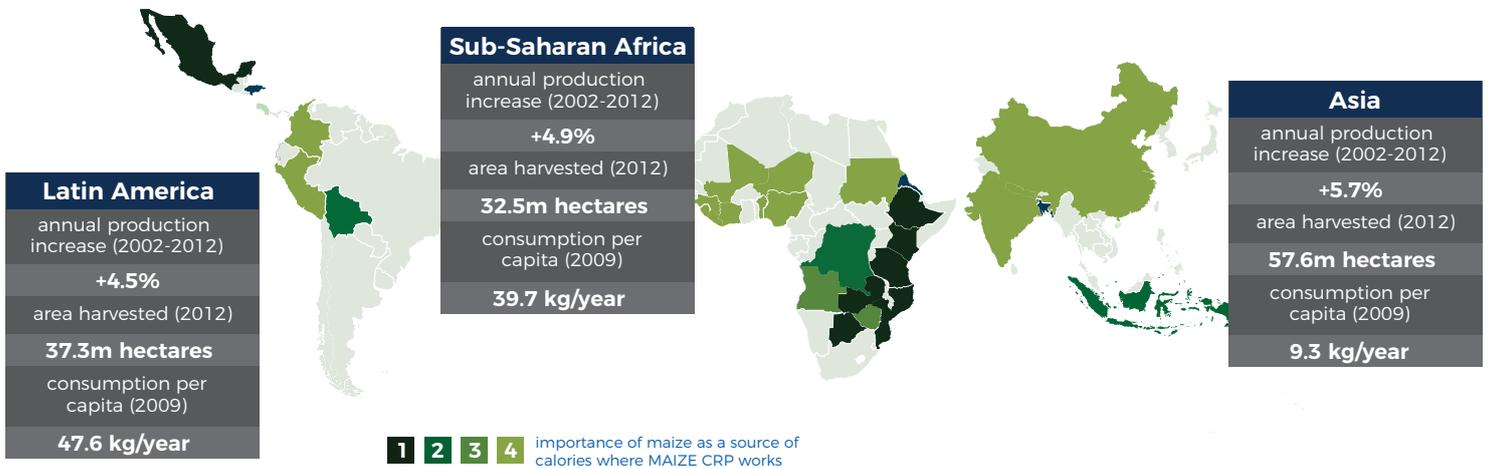
- ▶ **26 million (M)** farm households adopt improved maize varieties and/or improved agronomic management practices
- ▶ **15 M** poor people, of which 50% are women, assisted to exit out of poverty
- ▶ At least **100** new stress-resilient, nutrient use efficient and nutritious maize hybrids/varieties commercialized by seed company partners
- ▶ More than **US\$100 M** worth of value added per year, as women and men farmers change to new, improved maize varieties every year
- ▶ An estimated **US\$500 M** in total harvest losses avoided by farmers' adoption of improved stress tolerant maize varieties
- ▶ **20 M** people in target regions consume quality protein maize-based food products

## The World of Maize

Staple food for **900 million** people living on less than US\$2 a day

Maize, rice and wheat provide **30%** of calories for 4.5 billion people in 94 developing countries

During 2016, MAIZE reached **11,405,929** smallholder farmers



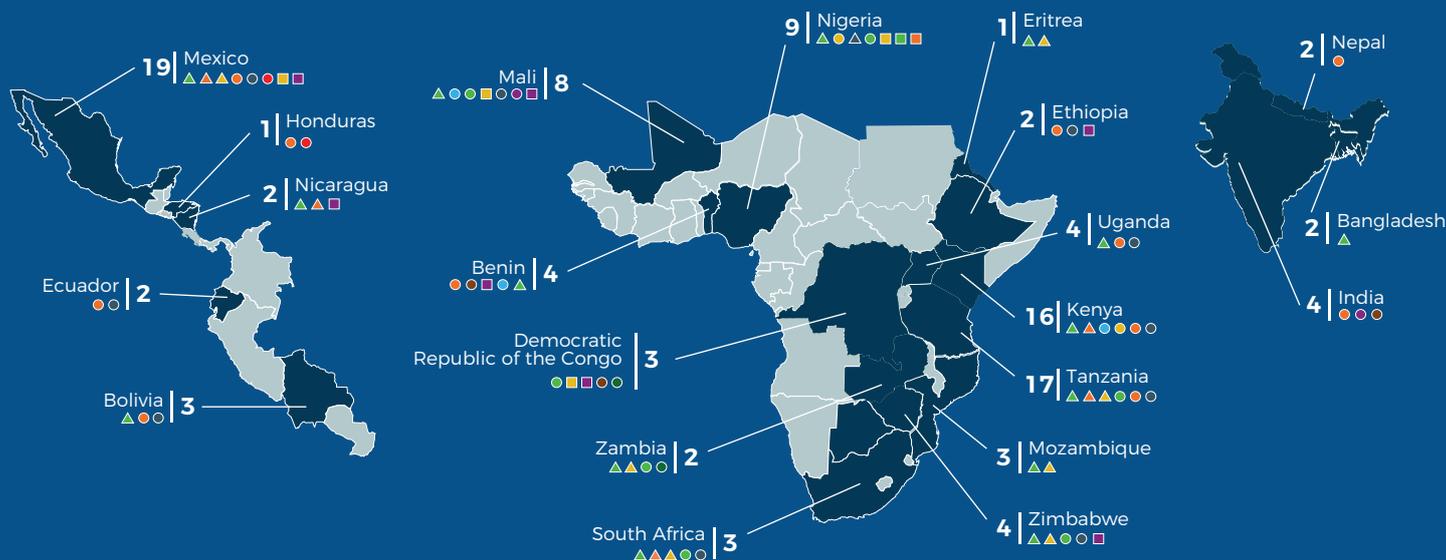
## A Deadly Maize Disease Has Met Its Match

Maize lethal necrosis disease (MLN) has continued to wreak havoc on maize production in East Africa since it was first reported in Kenya in 2011. The disease, caused by a combination of the maize chlorotic mottle virus (MCMV) and sugarcane mosaic virus (SCMV), causes irreversible damage that kills maize plants before they can grow and yield grain. MLN pathogens can be transmitted not only by insect vectors but also through contaminated seed. When MLN first struck, MAIZE and its partners immediately launched intensive efforts to identify and develop MLN-tolerant maize hybrids, while developing the capacity of partners to identify sources of MLN resistance. MAIZE researchers and their partners have screened nearly 100,000 germplasm entries from all over the tropics. The first phase of these evaluations focused on existing released varieties and materials in the elite breeding pipelines. However, over 95% of these materials have proven susceptible to MLN. Nevertheless, MAIZE team succeeded in releasing five MLN-tolerant maize hybrids in eastern Africa through partners, and as many as 22 MLN-tolerant second-generation hybrids are in the pipeline for release.

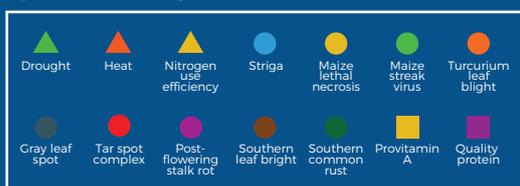


Photo: X. Fonseca/CIMMYT

# Maize Varieties Released in 2016



## Special Trait Key



111 improved maize varieties released

## MAIZE Flagship Projects (FPs) and Cluster of Activities

### FP1 Enhancing MAIZE's R4D strategy for impact

- ▶ Foresight and targeting of R4D strategies
- ▶ Learning from M&E, adoption and impacts
- ▶ Enhancing gender and social inclusiveness
- ▶ Value chain analysis

### FP2 Novel diversity and tools for improving genetic gains

- ▶ Informatics, database management and decision support tools
- ▶ Development of enabling tools for germplasm improvement
- ▶ Unlocking genetic diversity through trait exploration and gene discovery
- ▶ Pre-breeding: development of germplasm resources

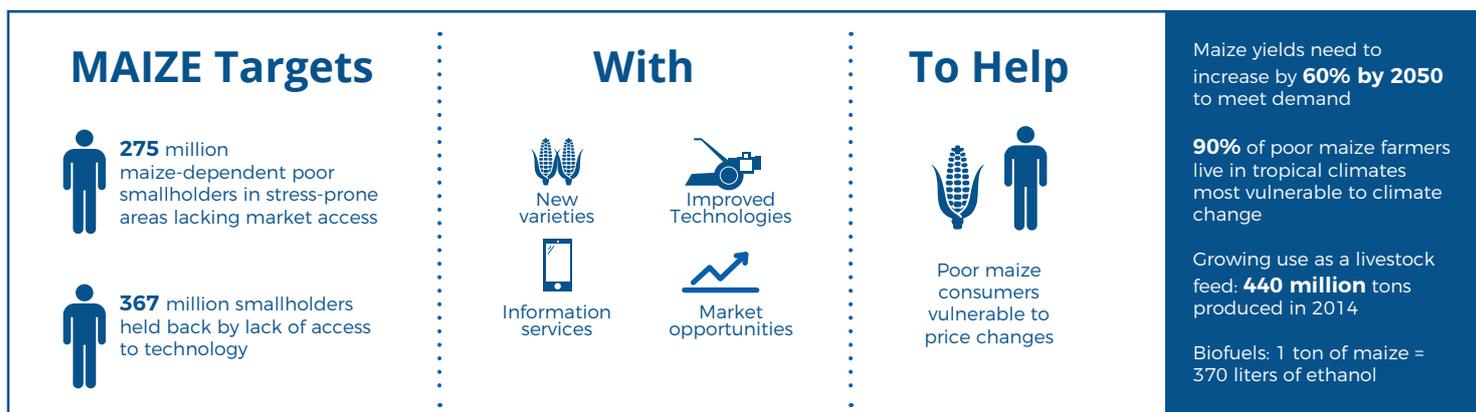
### FP3 Stress-tolerant and nutritious maize

- ▶ Climate resilient maize with abiotic and biotic stress tolerance

- ▶ Tackling emerging trans-boundary disease/pest challenges
- ▶ Nutritional quality and end-use traits in elite genetic backgrounds
- ▶ Precision phenotyping and mechanization of breeding operations
- ▶ Seed production research and recommendations
- ▶ Stronger maize seed systems

### FP4 Sustainable intensification of maize-based systems

- ▶ Multi-scale farming system framework to better integrate and enhance adoption of sustainable intensification options
- ▶ Participatory adoption and integration of technological components
- ▶ Development and field-testing of crop management technologies
- ▶ Partnership and collaborations models for scaling



# Global Partners for Impact

Led by the International Maize and Wheat Improvement Center (CIMMYT), with the International Institute of Tropical Agriculture (IITA) as its main CGIAR partner, MAIZE focuses on increasing maize production for the 900 million poor consumers for whom maize is a staple food in Africa, South Asia and Latin America. MAIZE's overarching goal is to double maize productivity and increase incomes and livelihood opportunities from sustainable maize-based farming systems.



## Working to Achieve the Global Goals

MAIZE will contribute to the achievement of ten Sustainable Development Goals outlined by the United Nations:



We would like to thank all donors who supported this research through their contributions to the CGIAR Fund.  
<http://on.cgiar.org/CGIARFundDonors>

## Contact us

CGIAR Research Program on MAIZE  
Km. 45, Carretera México-Veracruz, El Batán, Texcoco CP 56237  
Edo. de México, Mexico  
Maize CRP/CIMMYT, Dirección Postal Apdo. Postal 6-641,  
06600 Mexico, D.F., Mexico

Email: [maizecrp@cgiar.org](mailto:maizecrp@cgiar.org) Tel: +52 (55) 5804 2004



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