

African Agricultural Technology Foundation

PROJECT 4: Water Efficient Maize for Africa (WEMA)



Background

Africa is a drought-prone continent, making farming risky for millions of smallholder farmers who rely on rainfall to water their crops. Maize is the most widely grown staple crop in Africa and it is severely affected by frequent drought. Drought leads to crop failure, hunger, and poverty. Climate change will only worsen the problem. Since 2008, AATF has led the Water Efficient Maize for Africa (WEMA) partnership to develop drought-tolerant African maize using the best agriculture technologies available: conventional advanced plant breeding and biotechnology.

Objective

To develop drought-tolerant maize and make it available royalty-free for the benefit of smallholder farmers in Sub-Saharan Africa.

The problem

Three-quarters of the world's severe droughts over the past 10 years have occurred in Africa, making it the most important constraint of African agriculture. Even moderate drought conditions can severely affect the yields of maize, which more than 300 million Africans depend on as their main food source.

WEMA project

The partners of the Water Efficient Maize for Africa (WEMA) project are developing drought-tolerant African maize using the best agriculture technologies available: conventional advanced plant breeding and biotechnology.

WEMA is using conventional advanced plant breeding techniques to rapidly develop new drought-tolerant maize varieties from existing high-yielding and locally adapted germplasm from the CIMMYT-led Drought Tolerant Maize for Africa project (DTMA).

WEMA will incorporate a drought tolerance trait developed and donated by Monsanto and BASF into DTMA-developed varieties using transgenic breeding, sometimes referred to as genetic modification. This will contribute additional levels of drought tolerance beyond those gained through conventional advanced breeding techniques.

The first WEMA hybrids developed through conventional advanced breeding techniques could be available in five years. The timelines for the genetically modified drought-tolerant maize hybrids depend on research and development results and regulatory approvals in each of the WEMA countries. Farmers could have access to transgenic drought-tolerant maize varieties within eight years.

The benefits and safety of these maize varieties are being assessed by national authorities based on field evaluations under local conditions and according to the regulatory requirements in each of the WEMA partner countries. Extensive training and stakeholder outreach activities are also part of the project.

The varieties developed through the project will be made available to smallholder farmers through African seed companies royalty-free.

Partner institutions

- The African Agricultural Technology Foundation (AATF) leads the project, bringing experience in public-private partnership management, technology stewardship and project management expertise.
- National agricultural research systems contribute their expertise in breeding, field testing, seed multiplication and distribution:
 - Agricultural Research Council of South Africa (ARC)
 - Agricultural Research Institute of Mozambique (IIAM)
 - Kenya Agricultural Research Institute (KARI)
 - National Agricultural Research Organization of Uganda (NARO) and
 - Tanzania Commission for Science and Technology (COSTECH)



- The International Maize and Wheat Improvement Center (CIMMYT) provides high-yielding maize varieties that are adapted to African conditions and expertise in conventional breeding and testing for drought tolerance.
- Monsanto is donating proprietary germplasm, advanced breeding tools and expertise, and drought-tolerance transgenes developed in collaboration with BASF.

Funding Partners

- Bill & Melinda Gates Foundation
- Howard G. Buffett Foundation

AATF is a not-for-profit organisation that facilitates and promotes public/private partnerships for the access and delivery of appropriate proprietary agricultural technologies for use by resource-poor smallholder farmers in Sub-Saharan Africa. AATF is a registered charity under the laws of England and Wales and has been given a tax-exempt status in the USA. It is incorporated in Kenya and in the UK and has been granted host country status by the Government of Kenya where it is headquartered.

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