

African Agricultural Technology Foundation



Water Efficient Maize for Africa (WEMA) FREQUENTLY ASKED QUESTIONS



What is WEMA?

Water Efficient Maize for Africa (WEMA) is a public-private partnership led by the African Agricultural Technology Foundation (AATF) to address the devastating effects of drought by developing drought-tolerant maize. During this five-year project, the partners will develop new African drought-tolerant maize varieties, incorporating the best technology available internationally. The long-term goal is to make drought-tolerant maize available royalty-free to small-scale farmers in Sub-Saharan Africa.

Why is drought tolerance important for small-scale farmers?

Africa is a drought-prone continent, making farming risky for millions of small-scale farmers who rely on rainfall to water their crops. Maize is the most widely grown staple crop in Africa – more than 300 million Africans depend on it as their main food source – and it is severely affected by frequent drought. Drought leads to crop failure, hunger, and poverty. Climate change will only worsen the problem. Identifying ways to mitigate drought risk, stabilise yields, and encourage small-scale farmers to adopt best management practices is fundamental to realising food security and improved livelihoods for the continent.

What is the goal of the project?

During this five-year project, the partners will develop new African drought-tolerant maize varieties, incorporating the best technology available internationally. The long-term goal is to make drought-tolerant maize available royalty-free to

small-scale farmers in Africa through African seed companies. The purpose of these drought-tolerant varieties is to produce more reliable harvests for small-scale farmers – most of whom are women – so they can feed their families and increase their incomes.

Risk of crop failure from drought is one of the primary reasons small-scale farmers in Africa do not adopt improved farming techniques such as hybrid seed and fertiliser. A more reliable harvest could give farmers the confidence to make other improvements in their farming techniques. This effort is only part of what is needed to help farmers boost their yields and incomes. Farmers also require good soil health, improved training and support, pest and disease management, and access to markets to sell their surplus. Farmers' success contributes to stronger rural economies.

Who are the partners?

The African Agricultural Technology Foundation (AATF) will work with the International Maize and Wheat Improvement Center (CIMMYT), Monsanto, and the national agricultural research systems in Kenya, Uganda, Tanzania, and South Africa. The partners will be contributing their technology and expertise to the project. The project will involve local institutions, both public and private, and in the process expand their capacity and experience in crop breeding, biotechnology, and biosafety. Funding is provided by the Bill & Melinda Gates Foundation and the Howard G. Buffett Foundation.

Which countries are involved in the project?

Five countries – Kenya, Mozambique, South Africa, Tanzania and Uganda – are participating in the project. The national agricultural research systems in each of the five countries are partners in the effort. These are the Kenya Agricultural Research Institute (KARI), National Agricultural Research Organization of Uganda (NARO), Tanzania Commission for Science and Technology (COSTECH), Agricultural Research Institute of Mozambique (IIAM) and Agricultural Research Council of South Africa (ARC).

How is safety going to be ensured?

The activities of the project will comply with national regulatory and scientific authorities according to the established laws and regulatory procedures in each country. An increasing number of African countries are in the process of developing their own regulatory structures and processes based on international agreements such as the Cartagena Protocol on Biosafety.

What does royalty-free mean?

A royalty is usually a percentage of gross or net profit or a fixed amount per sale to which the owner of intellectual property rights is entitled to receive by contract. In this project, AATF, CIMMYT, and Monsanto have signed a legal agreement so that any drought-tolerant maize variety developed through this project will be licensed to AATF, which will identify local seed multipliers to make the seed available to smallholder African farmers at the regular price of maize seed without royalty. Farmers will also have the right to keep their harvested grain for replanting if they so wish.

How will the maize be developed?

There have already been excellent gains in drought tolerance utilising traditional breeding methods. Through this project, the partners hope to enable further in-



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creases in drought tolerance in hybrids adapted to eastern and southern Africa, first in the form of conventional hybrids produced through advanced breeding techniques, and later in the form of transgenic hybrids developed using the tools of biotechnology. The gains through advanced breeding and biotechnology should be greater and faster than those that can be accomplished solely by classical breeding methodologies.

When will small-scale farmers have access to the maize?

The focus of this five-year project is to develop and field test the maize varieties. The long-term goal is to complete development and make the product available royalty-free to small-scale farmers through African seed companies. The first conventional hybrids developed through marker-assisted breeding could be available after six or seven years of research and development. For the transgenic drought-tolerant maize hybrids, farmer access will depend on research and development results and regulatory approval. The partners estimate farmers could have access to the transgenic drought-tolerant maize varieties between 2015 and 2017.

What are the partners bringing to the project?

- AATF will contribute its leadership, unique experience in public-private partnership management, technology stewardship, and project management expertise.
- CIMMYT will provide high-yielding maize varieties that are adapted to African conditions and expertise in conventional breeding and testing for drought tolerance.
- Monsanto will provide proprietary germplasm, advanced breeding tools and expertise, and drought-tolerance transgenes developed in collaboration with BASF. These contributions will be provided without royalty to small-scale farmers.
- The national agricultural research systems, farmers' groups, and seed companies participating in the project will contribute their expertise in field testing, seed multiplication, and distribution.

The project will involve local institutions, both public and private, and in the process expand their capacity and experience in crop breeding, biotechnology, and biosafety.

When did AATF get interested in drought tolerance?

At its inception in 2003, AATF identified drought as a critical priority, based on research that identified frequent drought as the most urgent problem for small-scale farmers in Sub-Saharan Africa. AATF conducted in-depth research and engaged in discussions with public and private research organisations with the goal of identifying technologies that could address the severe problem of drought in African agriculture. WEMA is a realisation of AATF's goal to establish a strong partnership that could develop and deliver drought-tolerant maize varieties to African smallholder farmers under a philanthropic mandate. The fulfillment of the project's goals will enable AATF to achieve its mission of facilitating innovative public-private partnerships that bring within reach of smallholder African farmers the tools needed to increase agricultural productivity for better food and income security.

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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