

## GMOs as aid that grows

Posted on April 6th, 2008 in [farming](#), [news](#), [regulation](#) by Anastasia

As I said in my recent post “[Reason: as in rational thought](#)“, author Robert Paarlberg reported that the Gates Foundation would be contributing to the development of drought tolerant maize varieties for Africa. Details can be found in a [press release](#) from [AATF](#) (African Agricultural Technology Foundation), via [ISAAA](#)’s March 28 [Crop Biotech Update](#). I’ve posted the release below the cut for your convenience.

One of the most exciting parts of the WEMA (Water Efficient Maize for Africa) project is that it pulls in such a diverse group - including research entities from the participating countries, the well known non-profit [CIMMYT](#), and the corporations Monsanto and BASF.

In this project, the corporations will not charge any royalties to small scale farmers. I’m assuming they plan to make their profits from large farmers in the developed world that are now or will soon be experiencing destructive droughts, such as Australia. Clearing up licensing issues before a project begins seems to be the best course, especially if we consider the fate of Golden Rice. This ensures that the people who most need the technology will be able to afford it, and that protracted legal battles will be avoided.

It’s easy to hate Monsanto at times (especially if you are anti-establishment), but it seems that the company is trying to be a better global citizen, if not for any other reason than to increase their potential customer pool. Who, besides Monsanto and a handful of other biotech companies, has the resources to conduct the research and produce desperately needed varieties like WEMA? Non-profits and government programs will never be able to do it alone.

Monsanto has information about the WEMA project on their [website](#), including this telling photo with the caption: “Field trial of corn with the drought tolerant gene (on right) and control hybrid (on left). Note the greater size and healthier structure of the drought tolerant corn.”



[AATF] today announced a public-private partnership to develop drought-tolerant maize varieties for Africa. The partnership, known as Water Efficient Maize for Africa (WEMA), was formed in response to a growing call by African farmers, leaders, and scientists to address the devastating effects of drought on small-scale farmers and their families. Frequent drought leads to crop failure, hunger, and poverty. Climate change will only worsen the problem.

AATF announced the effort at the end of a two-day planning meeting that included representatives from each of the countries participating in the project: Kenya, Uganda, Tanzania, and South Africa. The partners will use marker-assisted breeding and biotechnology to develop African maize varieties with the long-term goal of making drought-tolerant maize available royalty-free to African small-scale farmers. The benefits and safety of these maize varieties will be assessed by national authorities according to the regulatory requirements in each country.

This partnership fits well with the AATF mandate of facilitating innovative public/private partnerships that bring to smallholder farmers in Africa the tools needed to increase productivity for

better food and income security,' Said Mpoko Bokanga, Executive Director AATF.

AATF will work with the non-profit International Maize and Wheat Improvement Center (CIMMYT); the private agricultural company, Monsanto; and the national agricultural research systems in the participating countries. The new drought-tolerance technologies have already been licensed without charge to AATF so they can be developed, tested, and eventually distributed to African seed companies through AATF without royalty and made available to smallholder farmers. Bokanga added that 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. The Bill & Melinda Gates Foundation and the Howard G. Buffett Foundation contributed a total of \$47 million to this effort.

The Director General of the National Agricultural Research Organisation of Uganda Dr. Dennis Kyetere presided over the official announcement of the initiative and said that the project will help address drought and contribute to food security in Africa.

'Drought is a source of suffering and food insecurity for many people in Uganda and it is recognised as a challenge by the government. Drought causes up to 100 percent crop failure in Uganda in some instances', said Dr. Kyetere.

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. It is severely affected by frequent drought.

In the next five years, the partnership will develop the new maize varieties, incorporating the best drought-tolerance technologies available internationally. CIMMYT will provide conventionally developed drought tolerant 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. Additionally, Monsanto and BASF will provide drought-tolerance transgenes that they have developed through their collaboration. These contributions will be provided without royalty. The national agricultural research systems, farmers' groups, and seed companies participating in the project will contribute their expertise in breeding, regulatory issues and will be responsible for country-specific implementation including project governance, testing, germplasm evaluation, seed production and distribution.

The Bill & Melinda Gates Foundation has funded an independent program at the McLaughlin-Rotman Centre for Global Health (University of Toronto) to assess and monitor social, cultural, ethical and commercial issues related to the WEMA Project. The independent organization will conduct annual audits of WEMA and serve as an additional communication channel for stakeholders.

According to eminent scientist Professor Calestous Juma, who is the Director of the Science, Technology and Globalisation Project at Harvard University, the WEMA project is a powerful signal of the relevance of biotechnology to African agriculture.

The collaboration between CIMMYT and national agricultural research systems has already yielded excellent gains in drought tolerance through conventional breeding. The partners in the WEMA project expect the combination of advanced breeding and biotechnology to bring even greater gains. The partners estimate that the maize products developed over the next 10 years could increase yields by 20 to 35 percent under moderate drought, compared to current varieties. This increase

would translate into about two million additional tons of food during drought years in the participating countries, meaning 14 to 21 million people would have more to eat and sell.

The first conventional varieties developed by WEMA could be available after six to seven years of research and development. The transgenic drought-tolerant maize hybrids will be available in about ten years.

Risk of crop failure from drought is one of the primary reasons why small-scale farmers in Africa do not adopt improved farming practices. A more reliable harvest could give farmers the confidence to improve their techniques. Good soil health, improved training and support, pest and disease management, and access to markets to sell their surplus are all necessary for small-scale farmers to boost their yields and incomes. To date, the Bill & Melinda Gates Foundation has invested more than \$660 million as part of a broad agricultural development strategy that includes efforts in all of these areas so small-scale farmers could have access to the tools and opportunities they need to build better lives.

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