

Emma Stevens

Maine Academy of Natural Sciences

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The Consequences of the Commercialization of GMOs in Africa

Africa's infamous food security crisis is linked to its severely underperforming agriculture. Africa has an abundance of poorly managed arable land that if used efficiently could feed not just themselves but the rest of the world. Research into how Africa can better use this arable land to its full potential revealed a shocking number of suggestions that rely on genetic modification. GMOs, or genetically modified organisms, are "organisms in which the genetic material has been altered in a way that does not occur naturally" ("Frequently Asked"). In America, GMOs have dominated the agricultural market, where an estimated 75% of food on shelves is genetically modified ("About GE Foods"). In Africa, where most countries still maintain bans on GMOs, struggling governments and agricultural enterprises are coming under increasing pressure from organizations like the Gates Foundation and USAID to accept them into their countries. GMOs have been advertised as the solution to world hunger, but on what basis? Implementing agricultural practices built around genetically modified organisms in Africa is not only unnecessary, but holds the potential for huge consequences.

Genetically modified organisms don't address any of the actual underlying problems with African agriculture. Food is lost *after* harvest in huge amounts: about \$4 billion dollars of food in South Africa- which could have potentially fed 48 million people- was lost after harvest annually (Aulukh). This can be caused by poor storage techniques, or by the huge infrastructure problems

in Africa: many farmers can't even get to a place to sell their crops without roads. There's no point of increasing yield if all surplus crops will rot anyway. Infrastructure difficulties also means that most farmers don't have access to systems of credit, so that the impoverished can't even afford to invest in seeds (which would cost much more if they were GM seeds). Even after they've successfully grown crops, many Africans don't have the means to sell their surplus without roads. Another problem in African agriculture is antiquated methods. 3.7% of the arable land in Sub-Saharan Africa is irrigated, compared to still only 7% in Africa ("Progress and Scope"). Also, the governments in African countries don't spend enough on agriculture. In Rwanda, the government increased its spending on agriculture investment than less than 4% over ten years which led to Rwanda doubling its crop production, which was estimated to reduce poverty by almost a third (Lopatto). GMOs are designed for large industrial, monoculture farms, and GMOs don't work for small, sustainable farms rely on diversity for nutrition and don't have the resources to grow GMOs the way that actually increase yields. GMOs draw attention away from problems that small-scale farms need to be addressed like African infrastructure, a lack of farmer education and government misspending. Furthermore, commercializing GMOs while ignoring these problems might bring prosperity to a few African commercial farmers but will only hurt small-scale farmers more.

Implementing GMOs will hold consequences for Africa's farmers. If the goal is to help the impoverished of Africa, it should mean that a small-scale or subsistence farmer should be spending as little as possible to create as much food as possible. However, not only do GMOs encourage and often require expensive fertilizers, herbicides and pesticides, but GM crop seeds are sterile. About 80% of small-scale African farmers replant seeds from old harvests (Belay).

GMOs make the economical practice of saving seeds impossible- GMOs actually decrease self-sustainability. For commercial farmers in developed economies, having to repeatedly buy seeds might not be a problem, but the introduction of GMO seeds hurts small-scale, organic farms. Runoff from these super strong herbicides can destroy small-scale farms unless they adapt to using GMOs, which they may not be able to afford. GMOs can create superweeds and superpests that are resistant to all herb- and pesticide that not only render GMOs useless but hurt organic farmers even more. These environmental consequences might be forgivable if these farmers were experiencing the huge increases in yield as promised by GMO companies, but a 30 year study by Rodale Institute found that organic yields *match* GM yields and *outperform* GM yields in years of drought. In addition, the study found that organic farming uses 45% less energy, that GMO farms produce 40% more greenhouse gases, and that organic farming is more profitable than GMO farming (“The Farming System Trial”). Monsanto has advertised the success of their GM cotton crop in Makhathini, South Africa, yet another study by The Third World Network reported that in reality, the crop yields and profits were much less than reported- in fact, farmer debt has been increasing since (deGrassi). GMOs do not show prosperity for Africa, despite what GMO companies are promising.

It is important to remember that GMOs are a capitalistic enterprise, and that bringing GMOs to Africa suits the GMO companies interests, not African interests. Million dollar advertising campaigns by GMO companies have been convincing Americans that GMOs are the solution to world hunger. However, citizen activists in Kenya, Ghana, Namibia, Nigeria, Senegal, Egypt and South Africa have been participating in the “March Against Monsanto.” The people who don’t want GMOs in Africa are mainly Africans. For big GMO companies like

Monsanto, bringing GMOs to Africa is a way to capitalize off hunger. The more GMOs there are in an environment, the harder it becomes to grow organic crops. GMO companies are trying to trap Africa into dependency on GMO crops. And the money spent on seeds, herbicide and pesticide isn't staying inside of the African economy, it's being sent to the US and Europe. Meanwhile, there are plenty of organic seed companies inside Africa that would likely go under with GMO introduction. The fight to bring GMOs to Africa is a selfish, corrupt fight and there is much that must be done to prevent this from happening.

For the most part, the fate of GMOs in Africa are up to the African politicians. On one hand, USAID was awarded 15 million dollars by the US government to influence the development of biosafety legislation in developing countries in their favor (meaning as least restrictive as possible) ("Africa Developing"). At this time, South Africa is the only country in Africa that has fully accepted the commercialization of GMO crops. Egypt began growing GMOs in 2008, but does not actually hold any legislature for or against GMOs. Burkina Faso began growing GM cotton in 2009, but is currently phasing the GM cotton out of its economy because of its low quality. Africa needs to create comprehensive legislature around GMOs. In the case that GMOs are legalized in a given African country, they should aim to be like South Africa, which has created detailed legislature surrounding the use of GMOs, including an assessment to the environment, permits for GMO-related activities and civil liability imposed among those who chose to participate in GM farming. Other countries that have not yet legalized the use of GMOs should aim to commit to bans on GMO farming, like Algeria and Madagascar, which have held full legal bans on GMO crop cultivation since 2000 and 2002, respectively.

Most countries in Africa hold partial bans on GMOs. It is most important now for African countries to focus on GMOs and ensure that they hold strict, safe policies towards GMOs.

The potential for Africa to be an agricultural superpower under the right circumstances is overwhelming. Sixty percent of the world's arable land lies in Africa (Obasanjo). More than any other place on the Earth, Africa is full of untapped opportunity for food. Genetically modified agriculture creates irreversible effects on environments and the Earth cannot afford to lose its most important asset in the future of feeding civilization. There are so many other basic problems in African agriculture to focus on before even considering something as controversial as GMOs. If Africa is still underperforming when its farmers have been taught sustainable techniques, infrastructure has been improved, and African governments are treating agriculture as a priority, then, perhaps, introducing GMOs to Africa could be considered. When African governments are prepared to take on huge, profit-hungry corporations smartly and safely, perhaps then Africa can consider commercializing GMOs. But African agriculture has not even began to take advantage of all its organic resources and most African governments are not at all stable enough to take on the risks of GMOs. GMOs are not the resolution to the food security crisis in Africa; the resolutions involve improvements in resources and education provided for farmers and a government focus on agriculture and infrastructure. The commercialization of GMOs in Africa is a win for big GMO companies, not African farmers who need less consequential resolutions.

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