



What are GMOs?



GMO (Genetically Modified Organism) is an organism created in a Laboratory by taking genes from one species and forcing them into an entirely unrelated species - in order to achieve a new trait or characteristic that is not possible in nature. The foreign genes may come from bacteria, viruses, insects, animals or even humans.

Monsanto is a leading producer of genetically engineered (GE) seed and Roundup, a glyphosate-based herbicide. Monsanto Company is the major sponsor of GMO research, campaign and lobby. It is a publicly traded American multinational agrochemical and agricultural biotechnology corporation.



Worth noting that Nigeria bases its scientific opinion of GMO safety on the information given to them by the same companies trying to sell these products as opposed to independent study. Former President Goodluck Ebele Jonathan Signed the National Biosafety Management Act of 2015 that permitted the free flow of GMO; its trial, commercial release and trans-border movement in Nigeria. The Nigerian Biosafety Management Agency has given Monsanto permits to try and release GMO in Nigeria.

Why is GMO a Problem?

The results of tests on animals exposed to GMO crops give serious health and economic concerns...

Health Problems; Real Life Evidences across the time line



One of Monsanto's first GM products, the patented Glyphosate-resistant, "Round-Up Ready" soybean, was approved by the United States Department of Agriculture (USDA) in 1994. **In March 25, 2015** - The cancer-research arm of the World



Health Organization (WHO), declared *glyphosate* a probable *carcinogen* (cancer causing agent) to humans.



In 1998: Scottish scientists found damage to every single internal organ in rats fed blight resistant GM potatoes. Again in **2006** experiment female rats fed on herbicide-resistant soybeans gave birth to severely stunted pups, of which half died within three weeks.

The survivors were sterile (Mark Anslow. *Ecologist* 1.3.2008)

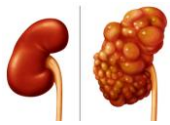
In 2006: An Indian news agency reported that thousands of sheep allowed grazing on Bt cotton crop residues had died suddenly. Further cases of livestock deaths followed in 2007. (Mark Anslow. *Ecologist* 1.3.2008)



May 19th 2009: The American Academy of Environmental Medicine (AAEM) called on "Physicians to educate their patients, the medical community, and the public to avoid GM (genetically modified) foods when possible and provide educational materials concerning GM foods and health risks; they stated that **"GM foods pose a serious health risk" and calling for a moratorium on GM foods**". (AAEM Press Advisory, May 19, 2009: <https://www.aemonline.org/gmo-pressrelease.php>)

In 2013: A laboratory study in human cells shows that very low levels of glyphosate (the main chemical ingredient of Roundup herbicide, which most GM crops are engineered to tolerate) mimicked the hormone estrogen and stimulated the growth of breast cancer cells. (Thongprakaisang et al, 2013)





In 2017: Laboratory finding shows the adverse effect of GM glyphosate, such very significant chronic kidney deficiencies in both sexes; the development of large mammary tumours in female breast. (Seralini et al, 2017)

In 2017: Scientific research on GM foods have showed stunted growth, impaired immune systems, bleeding stomachs, abnormal and potentially precancerous cell growth in the intestines, impaired blood cell development, misshaped cell structures in the liver, pancreas and testicles, altered gene expression and cell metabolism, liver and kidney lesions, partially atrophied livers, inflamed kidneys, less developed organs, reduced digestive enzymes, higher blood sugar, inflamed lung tissue, increased death rates and higher offspring mortality as well.

(Dr Ify Aniebo. BSc, MSc, MPhil, MPH, PhD)



Long-term (2 year) feeding trials need to be conducted to thoroughly evaluate the safety of GM foods. Do we have the capacity and agency integrity to do so?

If GMOs are dangerous, Who is responsible for food safety?



1992: USA Rep. Dennis Kucinich on the floor of the US Congress attacked the Food and Drug Administration (FDA) for classifying GMOs equivalent to conventional food. He noted that the conclusion of the FDA was without testing GMOs for allergenicity, toxicity, anti-biotic resistance and functional characteristics. This misdirection he said led to hundreds of millions of acres of GMO crops planted in America without the knowledge or consent of the American people: no safety testing and no long term health studies. The USA Food and Drug Administration (FDA) received over a million comments from citizens **“demanding labelling of GMOs”**. 90% of

Americans agreed. Yet No Labelling?! Rep. Dennis Kucinich attributed this to **“the influence and the corruption of the political process by Monsanto”**.

25 October 1998: Quoted in the New York Times Magazine (October 25, 1998, "Playing God in the Garden"), **Philip Angell**, Monsanto's director of corporate communications, famously stated: **“Monsanto shouldn't have to vouchsafe the safety of biotech food. Our interest is in selling as much of it as possible. Assuring its safety is the FDA's job.”** From the Federal Register, Volume 57, No.104, "Statement of [FDA] Policy: Foods Derived from New Plant Varieties," here is what the FDA had to say on this matter: "Ultimately, it is the food producer who is responsible for assuring safety”



In August 2011: WikiLeaks revelations showed that the USA State Department was lobbying worldwide for Monsanto and other similar corporations. The American diplomats had requested funding to send lobbyists for the biotech industry to hold talks with politicians and agricultural officials in "target countries" in areas like Africa and Latin America, where genetically-modified crops were not yet a mainstay, as well as some European countries that have resisted the controversial agricultural practice.

The Economic Problems of GM: No Gain as Promised!!!

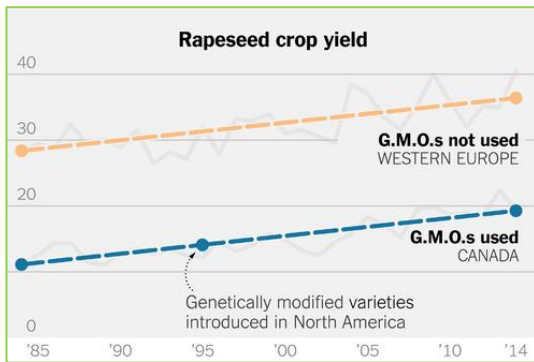
2008: IAASTD report of 2008 (sponsored by the World Bank and the UN, written by over 400 scientists and agricultural experts, endorsed by 59 countries) was highly dismissive of the potential of GM crops to benefit the world's poor; neither did it endorse GMOs as a solution to world hunger. In fact, genetic engineering has not significantly increased U.S. crop yields, according to the USDA and controlled comparative studies. Some GMOs have lower yields than non-GMO crops





Nigeria does not need GMOs to increase food security. By turning the annual 40% post-harvest losses worth \$750b, into food and profits for small farmers, Nigeria will reduce poverty and increase food security significantly, without introducing new cycles of dependencies. With off-grid electricity from solar or biomass, farmers can process and store their products on-site, thus avoiding the huge annual wastage.

28 December 2016: Mr Ocean Robbins, CEO Food Revolution Network; noted that - “The vast majority of corn, soybeans, canola, cotton, and sugar beets grown in the U.S. are genetically modified (GMOs). Monsanto and its allies claim that GMO crops reduce pesticide use, increase yields, reduce water consumption, and offer foods that are more tasty and more nutritious. But in the nearly 25 years since GM crops first came on the market, studies have found that they have led to higher pesticide use, and no meaningful improvement in flavor, nutrition, yield or water consumption. Instead, what they've created are plants that are engineered to withstand massive dosing of toxic herbicides, and plants that function as living pesticide factories. Monsanto's Bt. corn, for example, is actually registered with the EPA as a pesticide. Many credible scientists have significant concerns about the safety of these crops for human and animal consumption. And the environmental impacts are documented, and alarming”. (A special Guest post from Institute for Responsible Technology. Editors note 2016)

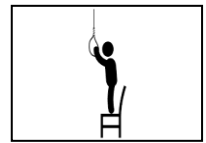


29 October 2016: New York Times investigative report titled “Uncertain Harvest :Doubts About the Promised Bounty of Genetically Modified Crops” concludes that, genetic modification in the United States and Canada has not accelerated increases in crop yields or led to an overall reduction in the use of chemical pesticides. The analysis by The Times using United Nations data showed that the United States and Canada have gained no discernible advantage in yields (food per acre; corn, sugar beet, Rape Seed), when measured against Western Europe, a region with comparably modernized

agricultural producers like France and Germany.



Farmers Nightmare in India: The high cost of GMO seeds increase the cost of farming significantly especially with small holder farmers. An internal advisory by the agricultural ministry of India in January 2012 on GM –BT Cotton reported on the cotton-growing states in India — “Cotton farmers are in a deep crisis since shifting to Bt cotton. The spate of farmer suicides in 2011-12 has been particularly severe among Bt cotton farmers. Monsanto’s royalty extraction and the high costs of seed and chemicals have created a debt trap. According to Government of India data, nearly 75 per cent rural debt is due to purchase inputs. As Monsanto’s profits grow, farmers’ debt grows. It is in this systemic sense that Monsanto’s seeds are Seeds of suicide”.



Monsanto’s talk of ‘technology’ tries to hide its real objectives of control over seed where genetic engineering is a means to control seed. Farmers need to buy the Bt-cotton seeds afresh every year. As they



cannot use seeds from the old harvest for replanting again. In addition, the Monsanto seeds can only grow with Monsanto fertilizer. **“Control over seed is the first link in the food chain because seed is the source of life. When a corporation controls seed, it controls life, especially the life of farmers”.** - Dr Vandana Shiva (2013; Republished in

Global Research, March 09, 2016. Originally Published Asian Age and Global Research 5 April 2013)



Burkina-Faso in 2016: Reuters news agency reported on April 4, 2016, that Burkina Faso was one of first African countries to embrace the cultivation of GMO cotton. However, just a few years later the country is seeking 48.3 billion CFA francs (\$83.91 million) in compensation from U.S. seed company Monsanto after it said genetically modified cotton led to a drop in quality.



In Mexico: Works of Ignacio Chapella has shown the capacity of GM maize to contaminate natural maize varieties due to wind drift of pollen despite a 3000km distance. On 8th **March 2016**, a court in Mexico upheld the permanent ban on cultivation of transgenic (genetic engineered) maize. Judge Soto Sanchez's sentence establishes that the collective trial showed the illicit presence of transgenes in native maize

crops. The transnational companies exposed since July 2013 are Monsanto, Syngenta, Pioneer-Dupont and Dow.

Country reactions against GM



6 out of the 8 countries in the G8 have outright bans on the cultivation of GMOs. Such countries include France, Germany, Japan, Italy and Russia.

As at 2015: 19 countries of the European Union(EU) have banned GMO's in their countries, incl. Austria, Belgium for the Wallonia region, Britain for Scotland, Wales and Northern Ireland, Bulgaria, Croatia, Cyprus, Denmark, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands,

Poland and Slovenia.

24 August 2015: The German Agriculture Minister Christian Schmidt announced that in addition to its existing bans on GMO cultivation, it will make use of the "Opt-out" rules to stop GMO crop cultivation even if varieties are approved by the EU.



Thirty eight (38) countries worldwide have officially banned the cultivation of GM crops- Sustainable Research Plus (22 October 2015)



Nigeria's main export market is the European Union, due to their ban on consumption and planting of GMO's our exports to these markets will be jeopardized.

What should be Nigeria's Position?



National Assembly (NASS) should as a matter of urgency review the signed National Biosafety Act of 2015. The NBMA Act 2015 is deficient in key areas including the following:

- i. *To avoid the conflict of interest in this act and its operating agency, the members of boards of the National Biosafety Management Agency Should (NBMA) should be re-constituted as the present Board of NBMA is populated by promoters of GMOs like the National Biotechnology Development Agency (NABDA) and the Biotechnology Society of Nigeria (BSN). These members has a serious conflict of interest as NABDA officially partnered with Monsanto in applying, and indeed obtaining permits for the trials of 2 GMO maize in Nigeria.*
- ii. *Public participation: The Act should make public participation obligatory when applications to introduce GMOs are being considered.*
- iii. *The Act should specify clearly how large-scale field trials would be contained and regulated to avoid contamination of surroundings or farms.*
- iv. *Farmer organisations; health and environmental based CSOs; and NAFDAC should be represented on the Governing Board of NBMA.*
- v. *Risk Assessment: The Act should state criteria for risk assessment and stipulate that such assessments must be carried out in Nigeria and not offshore. This is important because the effect of the GMO on non-target organisms has to be measured with non-target organisms that exist in Nigeria and are ecologically important.*
- vi. *Strict liability and provisions for redress should be included in the Act. These are key part to implementing the Nagoya - Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety {which Nigeria is a signatory to on 1st February 2012}.*
- vii. *Gifts: The Act permits NBMA to receive gifts; this is exposes the agency to abuse and corruption.*
- viii. *Precautionary principle: The Act should ensure the implementation of the precautionary principle that entitles our government to decide against approval or for restriction in cases of incomplete or controversial knowledge. This is the essential feature of the Cartagena Protocol on Biosafety (CPB) {which Nigeria has signed to on 24th May 2000 and ratified on 13th October 2003}*



The National Assembly (NASS) should out rightly ban GMOs in Nigeria, stop field trials, commercial release and trans-boarder movement of GMOs.

The National Assembly (NASS) should call on the relevant agencies and ministries to ensure that GM products in Nigeria are labelled, if not totally recalled.



To the Nigerian public, Shine Your Eye, Speak Out, call your legislators to put a stop to GMO.

ABOUT



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