

## LETTER TO THE EDITOR

### WHAT IS THE SCIENTIFIC CONSENSUS ON GMO IN FOODS IN NIGERIA?

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Dear Sir,

It is pertinent to first of all make clear that the issue of Genetically-Modified (GM) foods is not a discussion about Nigeria's participation in the scientific field of bio-technology. Genetically Modified Organisms (GMOs) could indeed offer real potential benefits – in areas spanning medicine, pharmacy, industrial agriculture, etc. The key issue here is the ongoing desperate push by foreign multinational corporations to literally force GMOs down our throats in the name of food.

In addressing this critical issue, we begin by examining the purported endorsement of GMO-foods for production in Nigeria by the Nigerian Academy of Sciences (NAS) (Cerier 2016). Contrary to the subsequent hyping and amplification of this fabrication in the popular press (e.g. Odogwu, 2016), no such event took place in reality. As can be easily verified from the website of the Nigerian Academy of Sciences (<http://nas.org.ng>), that revered body has various instruments for communicating her considered opinions on various critical scientific issues of national concerns. Such include Reports, Press Releases, Policy Briefs, etc. In none of these (as at December 21, 2016) was the issue of GMOs broached at all.

The only mention of the purported and hyped endorsement on the website was a news item that did NOT emanate from the NAS itself. It was a report from a local newspaper describing a "Roundtable" meeting that held on the premises of the NAS (NAS 2016, Lagos Times 2016). While the fact is not mentioned in any of the numerous popular press reportage of the event, the driving force behind the Roundtable meeting was actually the National Biotechnology Development Agency (NABDA). This can be confirmed by zooming in on some of the slides and banners at the meeting – available from the several pictures the NAS website was inundated with.

If it is the wish of the NAS to make a pronouncement on a burning national issue, such as GMOs in foods, why would there not be an official statement detailing the various scientific arguments leading to the conclusions arrived at? The NAS clearly has available to it, established platforms and protocols for making such a pronouncement. (e.g. NAS 2011).

Reading through the report posted on the NAS website, it is clear that all the write-up was based on personal positions advanced by three speakers. Eminent as these speakers were, their positions can nevertheless by no means be equated to the official position of the NAS. But even then, the body of the report showing actual quotes from the speakers, turns out to be the exact opposite of the screaming headlines!

For instance, while the headline blared: “Academy of Science says Nigeria ready for GMO products”, the first speaker mentioned in the report, Prof Oyebodun Longe was to be later quoted as admonishing that *“even though adoption of GM technology in Africa may not have met expectations, African nations and Nigeria in particular, must for the sake of science, develop the scientific capacity to embrace GMO technology.”* She went further to specifically plead that the NABDA be equipped *“with the technical know-how to do its work“* so as to be able *“to check the inflow of GM foods from different entry points into the country and even imports of genetic materials for research purposes.”*

In our humble opinion, none of these indicate that Nigeria is “ready for GMOs!” Longe’s focus was clearly on “the inflow of GM foods from different entry points into the country,” not production of GM foods in Nigeria. Furthermore, her position is that the scientific capacity to embrace GMO technology has NOT yet been developed in Nigeria. It is further clear from her submission that the NABDA currently needs to be equipped with “technical know-how to do its work.” So much for being ready!

Likewise, the then outgoing President of the NAS, Prof Oyewale Tomori, was quoted as urging *“government to create an enabling environment that would check that whatever GMO products came into the country were well verified.”* Again, it is clear that this patently sensible call to check GMO products being forced into the country (for instance through smuggling); is far from being a call that the country should start producing the products. Indeed, if Tomori is correct, even the basic “enabling environment” to check GMO products coming from other countries does NOT yet exist in Nigeria!

Before resting this case on the NAS position, we should again emphasize the big difference between GMO foods being imported/smuggled into the country, and their being commercially cultivated and produced right here. That the multinational forces are primarily interested in cultivating the crops in Nigeria is clear from the reportage of the outcomes of the NAS “Roundtable” Discussion by a foreign correspondent: *“The NAS, citing overwhelming evidence from developed countries and thousands of studies, said the country was ready for the products and that they were safe for production and beneficial to the nation.”* (Cerier 2016). Our position in this article is that Nigeria’s famed porous borders make it virtually a hopeless case, trying to stop determined and highly-motivated smugglers from shifting any product into the country as they wish. To that extent, all we can do to protect the public against the menace of GMO-laced foods is to develop the capacity to identify them – even if that would be on the shelves at our supermarkets. Individual members of the public could then take personal decisions whether or not to consume as food, such labelled products. Endorsing the efforts of the multinational corporations to come set up their production base here in Nigeria is however a different kettle of fish!

This leads to the important question: Why are these multinationals desperately looking for new bases for producing their highly controversial products anyway? The short answer is that the rest of the world has since gotten wise to the public health disaster that GMOs could constitute in food, and they are firmly putting down their feet in stout opposition.

In March 2015, after years of stalemated discussion, individual nation-states in Europe won the right to opt out of cultivation of GMO crops, irrespective of the pronouncement of the central government in Brussels on their safety (Ecowatch 2015a). Several countries immediately began to declare their opting out. The list includes Italy , Scotland, Germany,

France, Austria, Greece, Poland, Belgium, Bulgaria, Latvia, etc. (Ecowatch 2015b,c) At the last count, up to 19 countries in the EU have indicated they are definitely opting out. Similarly, late last year, on December 9 2016, the Ninth Circuit Court of Appeals in the United States ruled that all US States, counties, and local communities can ban or regulate “the planting of any and all commercially-grown genetically engineered crops,” no matter the claims of federal agencies or the companies that developed the crops (Mintpress 2016). Indeed a country like Russia is so averse to GMOs that it has laws treating anyone importing GMO foods into the country as a terrorist bringing in a biological weapon of mass destruction! (Chemical Concerns 2015)

All these unfolding developments portend serious threats to the operations and profits of the multinational companies (such as Monsanto and Bayer) that have virtual monopoly over GMOs in foods, all over the world. This explains their ongoing desperate resolves to break new grounds in our country. The previously-cited article by pro-GMO writer Stephen Cerier clearly betrays the expectations of these multinational industries for Nigeria. According to Mr Cerier: *“With the largest population and economy in Africa, Nigeria’s embrace of GMOs could be a game-changer in spreading African acceptance of the technology. ....Even if anti-GMO NGOs are successful in scaring other African nations from adopting biotechnology, Nigeria’s new generation of innovative crops will find their way across the continent. The country has very porous borders, and smuggling is rampant. As a result, GE seeds sanctioned for use in Nigeria are likely to be smuggled into neighboring countries.....This might prompt these nations to reconsider their bans on growing GMO crops and eventually lead to broad acceptance throughout the continent.”* (Cerier 2016)

And finally to the ultimate question: what really is the problem with GMOs in foods? It is primarily a question of safety and public health. It is really that simple. All the copious spurious references on the pages of newspapers to some “international” bodies which have supposedly pronounced GMOs as safe for food cannot really hold any water. Science is not based on dogmas but proofs. If anybody wishes to prove the safety of GMO foods, appropriate toxicological studies would need to be conducted. This often is as simple as feeding the product to some relevant experimental animals and watch the outcome!

Obviously the biological endpoints to check for in such studies would not just be the acute signs of toxicity, which appear almost immediately a product is absorbed. The health issues of interest would be those chronic endpoints including reproductive toxicity (which are not manifested until the subject involved desires to have babies); developmental toxicity and genotoxicity (which only manifest in the subject’s offsprings either whilst still in the womb or much later in life); and some other endpoints which manifest only after a long period of latency, such as cancers or organ damage. No one can summarily rule any of these out until appropriate studies have been conducted to check them out, product-by-product.

On the contrary, the few studies that were used to push through GMO foods into the market, (in the United States), were conducted by the very companies marketing the products; and significantly, the studies do not meet the definition of chronic toxicological studies, which require a study period of at least 200 days for rodents and rats (EnHealth 2012). For instance

in the infamous case of GM NK603 maize (Roundup-tolerant GM maize), Monsanto conducted only for 90 days, its published study used to secure the approval of the product by the US Food and Drug Agency. Other independent researchers, extending the study from 90 days (sub chronic study) to 22.7 weeks for pigs,(Carman *et al.*, 2013) and 2 years in rats, (Seralini *et al.*, 2012) convincingly demonstrated adverse effects (mainly on gut, liver and kidney, in addition to tumours). The Seralini study in particular, deliberately used the exact protocols and rat strains as the Monsanto study to allow proper comparison. If the environmental watchgroup Greenpeace is correct, Monsanto, contrary to her official and public postures, is actually apparently aware of the adverse health impacts GMO foods can have in man; hence the proscription of the products in her staff canteens! (Jacobson 2012)

Rather than continue to squander scarce government resources promoting GMOs in the popular press; or endlessly organize roundtable discussions regurgitating data spewed out by the very “international” corporations marketing the questionable products, all our government agencies need do to assure safety of GMOs as food, is to simply commission their own independent studies. That would be the only scientific way of settling the matter.

All the countries and authorities that have soundly rejected GM foods on health ground do so on the bases of such studies, independently carried out by competent authorities. According to the position paper of the American Academy of Environmental Medicine on GM foods, summarizing the incontrovertible outcomes published in several peer-reviewed scientific journals: *“Scientific researchers found that 70 percent of female rats and 50 percent of male rats died prematurely when fed GMOs, almost all of them victims of cancer. In all, GMOs have been linked to 22 diseases. According to the American Academy of Environmental Medicine, ‘animal studies indicate serious health risks associated with GM food consumption including infertility, immune dysregulation, accelerated aging, dysregulation of genes associated with cholesterol synthesis, insulin regulation, cell signaling, protein formation, and changes in the liver, kidney, spleen, and gastrointestinal system’.”* (Swanson *et al.*, 2014)

These are exactly the basic reasons countries after countries have continued to kick against GM foods. Not “geo-politics” or “hatred of science,” as Nigerian pro-GMO advocates constantly insinuate.

In the documentary *Genetic Roulette*,(Evomind 2013) several medical practitioners in North America describe the gory sights and diseases they come across in their patients who subsist largely on GMO foods. These are health outcomes very similar to those seen in laboratory animals that had been chronically fed GMO foods as described above. And to make the matters even more conclusive (and somewhat cheering), they also describe how in several cases, those adverse health outcomes are reversed when the patients are put off GMO foods. These are facts which cannot be wished away by dogmas or some authoritative fiat.

The public health spectre that would attend the mass production of GMOs in Nigeria is truly frightening. And it is avoidable. The truth of the matter is that the almighty God has really blessed our country with excellent resources, and we have no business bringing GMOs into our food production. Safety apart, it will only limit our options for exporting our products; and the very concept of “patented seeds” inextricably associated with GMO foods is not only

obnoxious but a veritable danger to our food sovereignty. We should refrain from applying dubious solutions to problems that do not exist with us.

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Ojo, Joshua Olufemi. 2017. What is the Scientific Consensus on GMO in Foods in Nigeria?  
©Nigerian Journal of Environment and Health. Vol 1 No 1, April 2017. ISSN: \*\*\*\*\*. Pg  
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