

important constraint to crop production; farmers and their families spend 60-80% of their energy trying to control weeds with hand held hoes (animal traction is not well developed because of tsetse flies); and they never succeed to have clean fields. They just get tired and abandon the fight. Furthermore the farming population is aging, as younger people are moving out of the rural areas; and agricultural labor is becoming very expensive. If all these are taken into accounts, the introduction of herbicides is really one of the best things that could happen to the African farmers.

#### 7. "GM FOODS CAN CREATE MONSTER HUMANS BECAUSE OF GENE MIXTURES"

This is the larger piece of science fiction. All GM crops are tested for their capacity to cause birth defect, allergy, cancer, and other toxicity. The safety of released GM crop is sure beyond any reasonable doubts.

#### 8. "MONSANTO'S SCIENTIFIC CITATIONS CANNOT BE TRUSTED"

That a PhD Student working on the introgression of the protein Gene cheated and falsified the data does not prove that science in general is not trustworthy. The sweep generalization indicates that the author did not have a scientific carrier.

#### 9. "GMO CROPS HARMS ENVIRONMENT AND NATURAL ECOSYSTEM OF PLANTS AND ANIMALS"

All evidences have shown that GMOs have done more than conventional varieties to clean the environment by dramatically reducing pesticides use (National Academy of Science 2010: Impact of GM crop and farm sustainability). We have already discussed about Round up.

Now saying that "they will pass gene to weeds which become super-weeds" shows again that this person is a science amateur. How can a chemical or crop exchange genes with weeds? They are saying that we human beings will acquire the genes contained in our food, or the bacteria will pick up the gene contained in our food. This never happens; otherwise the human genes will be contaminated with the genes of the animals or crops DNA they eat; and human will be the first GMO. It is again pure science fiction.

#### 10. "DANGER TO NATIONAL SECURITY, BEGINNING OF BIOLOGICAL COLONIALISM IN AFRICA"

All these are unfounded, unscientific and baseless. Nigerians should be re-assured that Genetic Modification technology is safe, beneficial, can contribute to the GDP, attract investment, turn agriculture into business by making it less labour intensive and therefore attractive to the youth, make food abundant, available and affordable. Scientific facts should not be mixed with ethical, political and social considerations.

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# NIGERIA NEEDS GM Technology

Raw material for textile industry

Sustainable environment

Feed the growing population of Nigeria



*The Global Prolife Alliance (GPA) and other stakeholders including the Health of Mother Earth Foundation (HOMEF) and Friends of the Earth (FoE) recently issued 10 reasons why Nigeria must not accept GM.*

*But Mr. Issoufou Kollo Abdourhamane, Regional Coordinator for African Agricultural Technology Foundation in this publication has advanced reasons why their argument is not only defective and deceptive but lacked scientific basis and insisted that Nigeria and Nigerians stand to benefit from the technology.*

#### **Excepts :**

#### **1. “THE ISSUANCE OF FOOD SAFETY PERMITS TO MONSANTO IS ILLEGAL”**

The NBMA Act has provisions for liability and redress and refers to the fact that existing laws on liability and redress to apply in addition to making regulations on liability and redress. The Act does not preclude anybody from taking appropriate legal actions. The law is specific on modern biotechnology and GMOs. It also empowers NAFDAC to certify GM foods.

On the applications filed by Monsanto Agriculture Nigeria Ltd and others which were received on the 2nd of October 2015, the following culminated to the approval: Procedure for processing of application was followed as specified by the act and this include: review of application dossier for completeness, acknowledgment of application, Constitution of National Biosafety and National Biosafety Technical Sub-Committees to review applications and advise the Agency before approval, Publication of notices on the applications in 3 national dailies for public views and depositing the application dossier in three locations (published in the papers on the 25th of February 2015) for public view.

The National Biosafety Committee (NBC), met twice while the National Biosafety Technical subcommittees met once to advise the NBC and they all supported the applications for approval. There were two respondents objecting to the application and other respondents published their views in the media supporting the applications. The objections expressed by those who are against the applications were scrutinized both by the NBMA and the NBC and their reasons for the objection to the application were found not adequate to warrant refusal of permits to the applicant.

The permit granted to the applicant was with effect from 1st of May 2015 and posted in the NBMA's website and mentioned to the press. Effective dates should be well understood to mean validity period.

The NBMA is not established to stop GMOs in Nigeria but to ensure biosafety, bearing in mind that there are over 26 Agric research institutes and various universities that have capacity to carry out modern biotechnology practice in Nigeria apart from the biotech private sector.

#### **2. “THE NATIONAL BIOSAFETY AGENCY ACT 2015 IS UNCONSTITUTIONAL AND DEFECTIVE”**

The development of a national biosafety regulatory framework for Nigeria dates back to 1994 when the first National Biosafety Guidelines were developed and the 2nd one known as National Biosafety Guidelines 2001.

The process of the development of the National Biosafety Act followed a systematic involvement of relevant stakeholders from 2002 to 2015. In 2002, a national committee was constituted under the Federal Ministry of Environment to develop a National Biosafety Framework. Prof. J. Ekpere from the University of Ibadan headed the Committee.

The Act is in conformity with established national and International laws, procedures and rules that govern the safe adoption of the modern biotechnology practice and the safe use of GMOs globally. The NBMA Act is the only safety valve for the adoption of modern

biotechnology and the deployment and use of GMOs for Nigeria's national economic development.

#### **3. “GM CROPS WILL NOT SOLVE FOOD CRISIS”**

The role of a resistant gene is to protect the crop. Introgressing a resistant gene into a conventional crop for insect/pest resistance does not increase the yield potential of the variety. This is well known by plant breeders. The resistance gene is useful only in the presence of a pest that it is supposed to control. In the absence of the pest, the susceptible gene may even out yield the resistant variety because resistance has a metabolic/energy cost. But in the presence of the target pest, the susceptible may have a low yield or zero yield while the resistant cultivar will not experience any yield reduction.

Yes GM technology will not solve food crisis but has the capacity to significantly reduce the crisis.

#### **4. “GM FOODS ARE UNHEALTHY”**

In 2012 the American Academy of Science Board of Directors stated that the science of GMO is quite clear: crop improvement by the modern molecular techniques of biotechnology is safe and this was recently supported by over 100 Nobel laureates who signed a petition to the United Nations saying that the technology is safe.

#### **5. “GMOS WILL CONTAMINATE THE ENVIRONMENT IN NIGERIA FOREVER”**

First of all this statement does not make any distinction between self-pollinated and cross-pollinated crops. All are lumped together in the attempt to instill fear and scare people.

This statement is mostly a science fiction. If it is true, then, how have the multitude of small farmers from Mexico to Guatemala been able through many centuries to keep pure their landraces of corn knowing that corn is an outcrossing crop. Also how are seed companies able to produce different varieties with a higher level of purity 99-100% in their field plots contained in the same area?

To minimize the risk, a protective band is made. This band could be non-GM crop; or a tall crop like sorghum can be used between the two fields. If this must be done for self-pollinating crops, the risk of pollen contamination is too small. It has never been a subject of discussion.

#### **6. “GM FOODS ILLEGALLY GROWN IN NIGERIA ARE UNFIT FOR HUMAN CONSUMPTION BECAUSE OF PESTICIDE USE”**

There is no GM food grown in Nigeria yet. Some national institutions are only carrying out research on beans, cassava and rice so what they are discussing here is not clear. Are they discussing the issue of pesticide residues or GMO? The two are different. Pesticide residues problem is almost 35-50 years older than GM crops. Many pesticides were banned many years before the first GM crop was grown. With GM crop or without GM crop the issue of pesticides residues and safety will remain. This has nothing to do with GM crops.

In 2015, IARC under WHO classified Round up (Glyphosate) in the class 2A, that is probable cancer causing agent. This is the same class as burning wood to cook your meal, or for a woman to go to beauty salon to have her hair made, or for a man to go to a barbershop. According to the same classification eating meat, or drinking wine or beer is more dangerous than Round up, because alcoholic beverages and red meat are put in Class 1 carcinogens with Plutonium.

The introduction of herbicides in our countries is one of the best thing that could happen to farmers. Anybody who has been under the heat of sun for 30-60 days with a hoe trying to kill weeds will realize the great benefit of herbicides. In sub humid (receiving  $\geq 600$  mm of rain) environment weeds constitute one of the main constraints, if not the most