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LIABILITY ISSUES OF GENETICALLY MODIFIED ORGANISMS.*

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1. Introduction

As is now customary, the Consumer Protection Council, since its inauguration, yearly keeps faith with the World Consumer Rights Day celebrated every 15th day of March. The tradition has been to select a chosen theme relevant to consumers and subject it to debate, often with a sensitization of consumer rights regarding that theme as the aim. This year's theme is, *"Food Security: Is Genetically Modified Foods the Answer?"* The notion of food security at once conjures up inadequacy of food for mankind, which thus engenders world hunger. World hunger has been variously and indeed is continually addressed at both domestic and international fora in so much so that the discourse on the subject has been elevated to one of a rights issue with commentators arguing that the right to food is a universal human right that must be sustained and promoted.[1]

In the quest for improvement, mankind has always explored. This is the case regarding food security. The need to check world hunger has led mankind into developing new techniques for producing not just food but high varieties and high quality food. The technology here stated with cross-breading and other forms of agricultural techniques and has presently matured into genetic modification of the genes of crops, all in the search for high yielding, cheaper, tastier and more nutritious food for consumption. But, in all this, are we really on the right track? Consumers International (CI), the umbrella body of all consumer groups around the world considered the question whether genetically modified (GM) food is the answer to hunger in Africa and, for the following reasons, answered the question in the negative.

- That GM food will destroy the model of production and consumption that sustain more than 70 percent of the farmers in Africa; who produce crops, sell one part of it, consume one part of it and keep the third part for the next season. Multinationals won't allow that but would want African farmers to

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[1] See C. Powell – "Geographies of Hunger" in Michael Likosky (ed.) – *Transnational Legal Processes: Globalisation and Power Disparities* (Butterworths, LexisNexis) 2002 at pp. 466 – 490.

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return again and again to purchase the patented seeds from them, creating a circle of dependency. Even if they forgo patents now, who knows how long it will continue.

- That GM food promotes monoculture and lends itself to a large-scale, industrial style of agriculture. That when Zambia was facing starvation and refused to take the GM maize, it requested the World Food Programme and the US AID to help bring more than 100 000 metric tons of cassava from the North of the country to feed the people and develop its production. That the answer Zambia got was: "it is either GM maize or starvation".
- That GM food seeks to eliminate any possible competition with non-GM crops, particularly when those varieties are more appropriate to the people's capacity to control their own future, more appropriate to their level of technological development and know-how. That while Zambia would not accept the GM maize for fear that it had not been adequately tested for food safety, or might contaminate its local variety, or might undermine the capacity of its households to sustain their food security with their backyard production of maize or might jeopardise their export prospects to European countries, the US would not untie its aid and source from the surrounding Southern African countries the 1. 160 million metric tons of non-GM maize out of the 2 million metric tons needed for Zambia and the six other African countries - Zimbabwe, Malawi, Lesotho, Angola, Mozambique and Swaziland - to feed themselves.

  That one year later, without recourse to the GM technology, Zambia was to double its maize crop production from 600,000 tons to well over 1.1 million tons of white maize within the space of a season with even the capacity for exporting.

  That the Zambian President's words "Our good policies in agriculture are beginning to pay off" speak better than any other debate about the value of a technological fix to solve the problem of hunger and poverty.
- That GM food does not promote alternative options that support research that is more farmer-led and farmer-designed such as what the process of developing new varieties of rice (what CI termed 'New Rices') for Africa teaches us. That rice farmers were actively involved in the research, determining which traits were important to them, and more adapted to their environment and culture. Instead it is the GM rice that gets all the publicity in the US[2].

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[2] Available at http://www.mindfully.org/GE/2003/Africa-GE-Will-Not17jun03.htm

The concerns raised by genetic modification (some would prefer to call it genetic engineering) of organisms are many. In an earlier paper,[3] I had this to say of GM products. I stated that it is ironic that with medicine, the boom of biotechnology is obvious and hence radically accepted by people seeing how better drugs and clearer diagnoses have improved lives. Yet a different attitude prevails in relation to the application of biotechnology to agriculture.[4] The truth is, the heated debate generated by GM foods transcends the bounds of consumer law and typifies the tension between science and society where scientists feel frustrated that the benefits resulting from their increased knowledge are not being eagerly accepted by society.[5] A number of reasons account for this.

In the first place, the clearest gains from the current crop of GM plants were primarily targeted at producers so that they can have higher yields and not consumers.[6] Secondly, food frights such as the "mad cow" disease (BSE), revelations sometime ago of cancer-causing dioxin in poultry, pork and beef in Belgium and the foot and mouth disease scare has not helped matters and indeed increase public skepticism in scientific pronouncements and regulatory authorities alike.[7] Thirdly, public resistance to GM foods is further influenced by three claims, namely, that genetic manipulation is logically unnatural and so inherently nasty (and hence is unethical, morally irreprehensible and offends religious sensibilities); the food it produces is dangerous; and they are bad for the environment.[8]

While advocates of GM foods have tried to counter these arguments,[9] the logic remains that the dangers from obviously shoddy goods are now less of a problem given that they are known. But the dangers created through the world's attempt to improve are worrisome given the uncertainty as to their scope or even impact. The fear of GM foods falls in this latter category. The risks of genetic engineering are of a totally different scale. No longer will accidents be restricted to individual accidents. If we get it wrong, whole trenches of society face destruction and the ecology of the world faces being changed forever. In any event, there is the

[3] B. B. Kanyip – "Consumers, Globalisation and the Paradox of Protection" (2003) 2 *Benue State University Law Journal* 14 at pp. 27 - 29

[4] See *The Economist* of June 19 – 25, 1999 at pp. 17 – 18 and 23 – 27.

[5] See the Editorial to [1999] 7 *Consumer Law Journal* at pp. 5 – 6.

[6] *The Economist, op cit* at p. 17.

[7] *Ibid,* at pp. 17 and 24.

[8] *Ibid,* at p. 23. See also the Statement by the South African Conference of Catholic Bishops titled, "Genetically Modified Food: The impending Disaster", available at http://www.manyknollogc.org/ecology/sacbc.htm

[9] *The Economist, op cit* at p. 23.

problem of controlling and monitoring GM organisms (GMOs) given the possibility that inadvertently unapproved GMOs may find themselves in circulation. This was recently the case where unapproved GM corn was inadvertently released and is now found to have antibiotic-resistance thus raising biosafety concerns[10]. Here lies the challenge/tension represented by GMOs. The science is young in this area and it is hard for anyone to take an informed view on the relative risks and benefits.

For consumers around the globe, precaution is the watch word. But, to the extent that labeling laws are generally poor and do not necessarily obligate the indication of GM foods, even this consumer precaution may be illusory. For the third world consumer, the present prevalence of sub-standard good occasioned by the incidence of dumping, means that GM goods, if they do get to be rejected by the developed economics, may find their way to third world economics; and this is, if the general inability of third world economies to feed their population had not already necessitated the importation and consumption of GM foods, even if inadvertently. For instance, in 2002, severe food crisis hit Southern Africa. At least 14 million people were facing starvation in Zimbabwe, Malawi, Zambia, Lesotho, Angola, Mozambique and Swaziland. The United States (US) decided to provide GM maize as food aid. Malawi, Mozambique, Angola and Lesotho accepted the un-milled corn. Zimbabwe accepted on condition that the corn be milled. Zambia rejected the corn on the ground that there was no conclusive information on the long term effects on human health, the country's long term food production capacity, the impact on the environment and trade for the country.[11] Regarding Nigeria, Godwin Haruna, quoting Mr. Nnimmo Bassey, the Executive Director of Environmental Rights Action (ERA)[12], notes that Nigeria, in 2004 signed a Memorandum of Understanding with the US government agreeing to support GM crops. That, though, Nigeria is not a food recipient country, it, however, continues to buy rice from the US; and in 2003, received 11,000.6 metric tons of soy meal as food aid from the US under the US Food for Progress. He then commented that taking into account that over 80 per cent of soybeans in the US are GM, then Nigeria has been receiving GM products without any prior information to the government and with Nigerians completely uninformed on it. I wish to note here that some developing economies have made concerted efforts to ban the importation of GM food into their territories. For instance, in December 2000, Algeria banned the import, distribution,

[10] See Lim Li Ching – "Unapproved GM Corn Has Antibiotic-resistance" in *The Guardian* Newspaper of April 10, 2005 at p. 42.

[11] Noted by Consumers International at http://www.mindfully.org/GE/2003/Africa-GE-Will-Not17jun03.htm

[12] Godwin Haruna – Genetically Modified Crops ... Food or Poison? In *THISDAY* Newspaper of March 28, 2005 at pp. 24 – 25.

commercialization and utilization of GM plant material; Egypt has decided not to import GM wheat; Sri Lanka has banned the importation of all GM foods as from May 2001; and Saudi Arabia has banned GM food and will not import GM wheat.[13]

It is within the context of this uncertain scenario that one must view with caution the adoption of genetic engineering by the Federal Government of Nigeria.[14] This posture must be questioned given that even in the developed economies where genetic engineering has long been adopted, there is no agreement as to its virtue. For us to rush into it, calls for caution.

The uncertainty as to the scope and impact of the risks generated by genetic engineering or modification of organisms also presuppose an uncertain legal regime to regulate it particularly regarding the liability question. Hence, the discussion here is always in the context of *potential* liability or *possible* liability regime for GM organisms, and the available studies in this area have proceeded from this premise too.[15] I am consequently constrained to proceed on the same premise. What follows, therefore, is essential deductive and speculative i.e. the *possible* or *potential* liability for losses generated by genetic modification or engineering in Nigeria. But before embarking on this excursion, it is necessary to clarify what we mean by genetic modification or engineering.

2. Definition of Genetic Modification.

A useful insight into the notion of genetic modification is that given by the New Zealand Royal Commission on Genetic Modification whose report was released on 27 July 2001.[16] The terms of reference for this Royal Commission, defined genetic modification as:

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[13] All of this was noted in the Statement of the South African Conference of Catholic Bishops, ***supra*** note 7.

[14] As announced by the Minister of Information on January 26, 2000 via the Nigerian Television Authority (NTA) 9 O'clock Network News.

[15] See instance, New Zealand Law Commission (NZLC) - *Liability for Loss Resulting from the Development, Supply, or Use of Genetically Modified Organisms,* Study Paper(SP) 14, (Wellington, New Zealand), May 2002, available at http: //www.lawcom.govt.nz; Simon Terry, *et al* - *Who Bears the Risk? Genetic Modification & Liability* (Chen Palmer & Partners and Simon Terry and Associates Ltd, Wellington), September 2001, 2nd ed.; Science and Economic Policy Branch, Australian Government Department of Agriculture, Fisheries and Forestry – *Liability Issues Associated with GM Crops in Australia,* September 2003; David R. Moeller – *GMO Liability Threats for Farmers: Legal Issues Surrounding the Planting of Genetically Modified Crops,* November 2001; and Rosemary Polya – *Generally Modified Governance Issues,* Research Paper 17 2000 – 01, available at http://www.aph.gov.au/library/pubs/rp/2000-01/01RP17.htm

[16] Royal Commission on Genetic Modification – *Report of the Royal Commission on Genetic Modification* (Wellington, 2001).

The use of genetic engineering techniques in a laboratory, being a use that involves –

(a) the deletion, multiplication, modification, or moving of genes within a living organism; or
(b) the transfer of genes from one organism to another; or
(c) the modification of existing genes or the construction of novel genes and their incorporation in any organisms; or
(d) the utilization of subsequent generations or offspring of organisms modified by any of the activities described in paragraphs (a) to (c).[17]

From this definition, it was, however, excluded the generation of organisms or products using modern standard breeding techniques including cloning, mutagenesis, protoplast fusions, controlled pollination, hybridization, hybridomas and monoclonal antibodies. In consequence of all this, genetically modified organism (GMO) is defined as "an organism that is produced by genetic modification."

In the subsequent study of the New Zealand Law Commission in 2002, this Royal Commission's notion of and indeed the phrase, "genetic modification" was adopted even in preference to the phrase, "genetic engineering", although the Law Commission noted that some prefer the phrase, "genetic engineering" as being more specific than "genetic modification."[18] It was then further noted that GM products not involving live organisms are unlikely to present the same challenges to a liability regime as would GM live organisms.[19]

For present purposes, there is no reason why we should depart from this approach. We adopt it in its entirety. We can now proceed to examine what liability issues exist regarding GMOs. In dealing with this problem, the enquiry must resolve the fundamental questions as to whether the existing or current liability regime for loss resulting from GMOs is adequate; or if not adequate, the options available and their advantages and disadvantages. Two issues arise here.[20] One, are there new challenges presented by GMOs that are not adequately dealt with by the existing liability structure? Two, if there are gaps in the current liability structure, are those gaps specific to GMOs so that a new regime should be developed specifically for GMOs? Or should other potentially hazardous human activities or technologies be included?

[17] *Ibid,* at p. 366.
[18] NZLC SP 14 at p. 3.
[19] *Ibid..*
[20] *Ibid,* at pp. 1 - 2.

In assessing the possible liability regimes for GMOs, the New Zealand Law Commission assumed that the aims must include –

a) the allowance of an appropriate development of GMOs to maximize scientific progress and public benefit consistent with public safety;
b) provision of incentives for developers to install safety precautions;
c) provision of compensation for victims (and the environment) for any damage caused by GMOs, even if damage is discovered long after it was caused;
d) provision of transparent and publicly understood provisions for liability for loss; and
e) creation of a framework that would internalize all costs of the genetic modification industry, or accept that some costs will be socialized (that is, borne by "innocent" individuals or the society).[21]

In all this, it must be noted that the major problem with liability for damage caused by genetic modification is that it is difficult to assess the level of risk posed or the size of the potential damage. For us here in Nigeria, institutional failure generally means that losses arising from GMO will essentially lie where they fall i.e. on the individuals, as neither government would cover the shortfalls nor can even the legal structure be able to offer the desired remedial measures.

In general terms, however, a liability structure must take account of the role of the three actors involved, namely, individuals who suffer the loss or damage; industry that create the loss generating activity (in this case the GMOs) and government as the regulator and general overseer of public health and safety. What this means is that the debate as to the content of the liability regime for GMOs is one that should not be left to lawyers alone. Given that ethical, spiritual and questions of public acceptability are involved, the debate as to who should be responsible for the adverse consequences of GMOs must be wide. It is my hope that the present forum is in that direction.

But we cannot appreciate the liability regime for GMOs if we do not understand the special features of GMOs that affect liability.

[21] *Ibid*, at p. 2.

3. Special Features of GMOs that Affect Liability.

Once again, we must refer to the detailed study of the New Zealand Law Commission, where they itemized the features of GMOs relevant to liability as follows[22] -

a) That it is difficult to estimate the level of risk posed by GMOs given that they are a new technology. And here, insurance may not come by easily.
b) The magnitude of the potential damage is difficult to assess. GMOs may have ability to replicate without limit.[23] In any event, there is the provability of gene transfer from one species to another given that we are dealing with living organisms.
c) GMOs have the potential to create catastrophic levels of harm. And here, most liability regimes will be ineffective. In any case, there are losses that cannot, for all practical purposes, be compensated for or rectified, for instance, loss of biodiversity or spiritual pollution of traditional foods.
d) Some of the negative effects of GMOs may not manifest immediately and they may be diffuse in nature. What this means is that potential defendants may no longer exist when the damage manifests.
e) A potential plaintiff may well face difficulty and expense in establishing causation and proving the extent of any damage given the possible time lapse before damage is discovered and the scientific evidence needed to prove causation.

Whatever liability structure is designed for loss or damage arising from GMOs, whether new or based on current rules of liability, must take into account all the above features. And since liability arises only if there is resultant damage, it is also necessary to appreciate the nature of damage envisaged here.

To the New Zealand Law Commission, any damage from GMOs is likely to fall into any or all of the following categories[24] -

i) Personal injury, for instance, allerginicity, toxicity, etc;
ii) Property damage such as loss resulting from GMO contamination of land, crops, processed foods and other products;
iii) Financial or economic loss such as loss of organic status by a genetic modification-free farmer;
iv) Environmental damage such as loss of biodiversity; and
v) Spiritual harm, which cannot be covered by any of the liability rules

[22] *Ibid*, at pp. 4 – 5.
[23] Simon Terry, *et al* (2001) *op cit.*.
[24] NZLC SP 14 at p. 10.

Given the structure of the current liability regime, what liability rules exist within which we can compensate for the above types of damage? It is to this that we must now turn.

4. Current Liability Rules Relevant to Losses Arising from GMOs.

Generally speaking, and as the law stands today, liability arising from GMOs broadly falls within three areas of the law, namely, tort-based liability, regulatory liability and contract-based liability.[25] Contract-based liability deals with technology agreements regarding GMOs or assurances given by, say farmers to GM crop purchasers. Since the nature of liability here does not relate to damage arising from GMOs, we are, therefore, not concerned with contract-based liability in the present discourse. We will, therefore, restrict our discussion to only tort-based liability and regulatory liability.

4.1 Tort Liability

A scenario for liability here relates to, for instance, cases where a farmer plants GM crops which affect his neighbour's crops. Certain crops such as corn cross-pollinate, causing genetic material to migrate beyond where the crop was planted. Unless "genetic fences" are developed that stop genetic drift, or "pollution", from occurring during cross-pollination, disputes may arise between growers of GMOs and their neighbours who do not. These neighbours may suffer damages, for instance, by being unable to market their non-GM crop as they wish if the non-GM crops test positive for GMOs that come from a neighbouring grower's field. Thus if effective barriers to genetic pollution are not available or these barriers fail, there may be liability in tort for contaminated crops.[26]

In general, liability in tort for damage arising from GMOs may be based on rules relating to trespass to land, nuisance, negligence, or the rule in *Rylands v. Fletcher*.[27]

4.1.1 Liability in Trespass to Land

A tort claim of trespass to land lies when someone intentionally and without lawful justification enters another person's land, or remains unlawfully upon such land, or directly places or projects any material object upon such land.[28] Within the context of GMOs, therefore, liability can arise where a farmer and/or seed company knew that genetic traits from a GM crop would enter a neighbour's property and genetic

[25] David R. Moeller (2001) *op cit.*.
[26] *Ibid.*
[27] (1866) 159 ER affirmed in (1868) LR 3 HL 330.
[28] *Onasanya v. Emmanuel* [1974] 9 CCHCJ 1477 at p. 1481.

drift in fact occurs, causing harm to the neighbour's crop. Here, the farmer and/or seed company could then be liable for any resulting harms caused by the GM crop.[29]

4.1.2 Liability in Nuisance

A tort claim in nuisance arises when someone unreasonably interferes with one another's interest in land by materially affecting the land, or affecting the use or enjoyment of the land[30] in the nature of obnoxious noise, sights or smells. For present purposes then, GMO contamination could affect what crops a neighbouring farmer can grow, thereby interfering with the farmer's ability to use his property. Thus liability may lie in nuisance where GM plants spread from one farmer's land to the land of a farmer growing GM-free crops.[31]

4.1.3 Liability in Negligence

Where a person fails to act reasonably under the circumstances and this failure causes harm to another, liability in negligence may lie.[32] And here, duty, breach, causation, and damage are the elements which together make up any successful claim in negligence.[33] The requirements of these elements can be rephrased as a series of questions, each of which must be answered in the affirmative if the plaintiff is to succeed: does the law recognize liability in this type of situation (duty)? Was the defendant careless in the sense of failing to conform to the standard of care set by law (breach)? Has the plaintiff suffered a loss (damage) for which the law regards the defendant as responsible either in whole or in part (causation)?[34]

In presenting the elements for a successful plea in negligence in this manner, Markesinis and Deakin have cautioned that any "doctrinal examination of negligence must not lose sight of the wider social context within which the tort has developed, since it is this which has been largely responsible for the fluidity of the central legal concepts and for the courts' frequent recourse to 'policy' as an explanation for their decisions."[35] It is essential to bear this in mind, especially

[29] David R. Moeller (2001) *op cit.*.

[30] B. S. Markesinis and S. F. Deakin – *Tort Law* (Clarendon Press: Oxford) 1994 at pp. 419 – 420. See also *Ige v. Taylor Woodrow (Nig.) Ltd* [1963] LLR 140; *Karunwi v. Okunaiye* [1963] 2 ALL NLR 179; *Abiola v. Ijoma* [1970] 2 All NLR 268; and *Adediran v. Interland* [1991] 12 SCNJ 27.

[31] NZLC SP 14 at p. 11.

[32] *Donoghue v. Stevenson* [1932] AC 562.

[33] Markesinis and Deakin (1994) *op cit* at p. 65.

[34] *Ibid*, at pp. 65 – 66.

[35] *Ibid*, at p. 65.

within the context of liability for harms resulting from GMOs, as their social context and policy considerations are bound to play key roles in influencing ultimately judicial decisions in this area of the law.

For present purposes, therefore, a GMO injury victim must establish all the above elements if he is to succeed in a plea of negligence. Thus, given the potential for certain GM crops to contaminate neighbouring fields, or for GMOs to cause personal injury or economic or financial losses, a court could find that a duty was owed to prevent such a loss or injury. If a duty is shown, the victim would then have to show that it was breached. Thus failure to, for instance, properly select seeds, adhere to specific buffer zones, or follow growing and harvesting procedures could mean a breach of that duty. And if any of these failures is linked to the victim's injuries, then liability in negligence may be sustained.

4.1.4 Liability under the Rule in *Rylands v. Fletcher*

The rule in *Rylands v. Fletcher* states that "any one who in the course of 'non-natural' use of his land 'accumulates' thereon for his own purposes anything likely to do mischief if it escapes, is answerable for all direct damage thereby caused."[36] Liability here is strict for it is not a defence that the defendant took all reasonable precautions.

The problem for liability here is that courts may be reluctant to decide whether producing GMOs is a "non-natural" use of land so that liability can lie in *Rylands v. Fletcher* or is an unreasonable interference for liability to lie in nuisance. The choice here could involve the courts in policy decisions that go to the heart of the genetic modification debate. And here, people have differing views as to whether genetic modification is merely another form of breeding technique or whether it is technology of an entirely new kind.[37]

4.2 Regulatory Liability

By regulatory liability is meant responsibility for violation of statutes or regulations that deal with a matter, which for present purposes would be food in general and GM food in particular. The relevant laws regarding the regulation and control of food in Nigeria include the Food and Drugs Act,[38] the National Agency for Food and Drug Administration and Control (NAFDAC)

[36] *Ibid*, at p. 460. See also *Umudje v. Shell B. P. Petroleum Dev. Co. of Nig. Ltd* [1975] 9/11 SC 155 and *Shell v. Anano* [2000] 23 WRN 111.

[37] Justin Thronton – "Genetically Modified Organisms: Developing a Liability Regime" [2001] 6 *Env Liability* 267.

[38] Cap. 150 LFN 1990 as amended by the Food and Drug (Amendment) Act No. 21 of 1999.

Act,[39] the Food, Drugs and Related Products (Registration, etc) Act,[40] the Counterfeit and Fake Drugs and Unwholesome Processed Foods (Miscellaneous Provisions)Act,[41] the Trade Malpractices (Miscellaneous Offences) Act[42] and, to a limited extent, the Consumer Protection Council Act[43] and the Standards Organisation of Nigeria Act.[44] Relevant here are the many regulations laid down by regulatory authorities regarding matters within their respective mandates. For present purposes, we have in mind the numerous regulations laid down by, say, NAFDAC on matters pertaining to registration, labeling, etc of regulated products within its statutory mandate.

Space will not permit a detailed discussion of all these laws. The point to note, however, is that these statutes and regulations adopt the twin techniques of standards setting and licensing (or registration) as the pivots of regulation and control of all those engaged in activities that come within the respective statutory mandates of the regulatory institutions. Violations of the statutes or regulations are met with either criminal sanctions or administrative penalties.

While we are not at the moment concerned with the virtue or otherwise of regulation, the major drawback with the above-enumerated statutes and regulations made there under, is that they are general to food but not specific to GM food. So, whether they are capable of meeting the unique qualities of, and the risks presented by, GMOs is a question that can only be speculated upon. My thinking here is that they may not adequately cater for the risks presented by GMOs in today's world. It becomes necessary, therefore, that we commence the debate more seriously as to how we can elevate our legal rules towards meeting the challenges posed by GMOs.

In the search for an appropriate regulatory framework, Consumers International advocates, among others, four basic principles/elements (represented by the four letters, STLL) that must be taken into account so that the benefits of technology can be maximized while minimizing the potential socio-economic negative effects.[45] These are: -

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[39] No. 15 of 1993 as amended by the NAFDAC (Amendment) Act No. 19 of 1999.
[40] No. 19 of 1993 as amended by the Drugs and Related Products (Registration, etc) (Amendment) Act No. 20 of 1999.
[41] No. 25 of 1999.
[42] No. 67 of 1992
[43] No. 66 of 1992.
[44] Cap. 412 LFN 1990.
[45] See Amadou C. Kanoute – "Green Genetic Engineering in the light of Environmental Protection, Health and Poverty Alleviation", a paper presented a Conference on *"Biosciences and their*

a) *Safety*, where it has to be ascertained that no harm to human health and the environment will result before any goods can be put into the marketplace.
b) *Traceability*, where a mechanism has to be put in place that will ensure that it is possible to trace all foods derived from GMOs and their ingredients so as to facilitate the proper and fast identification of products and their ingredients.
c) *Liability*, where a regime has to be put in place that ascertains the assignment of risks generated by producers of GM foods as between them and consumers/society taking note of the principle that he who reaps the benefits, should bear the burdens.
d) *Labelling*, where the aim is to provide adequate and truthful information to consumers so that they can make informed choices.

Putting all of this in place, no doubt, would involve huge costs. This necessitates that mechanisms will be put in place to ensure the ability to monitor and enforce the laws, that institutional infrastructure is functional, and that the human resources needed for a responsible use of GMOs are available and reliable. At the policy level, therefore, the critical issue becomes whether the potential benefits of GMOs outweighs their potential costs and risks. This issue, relevant to the liability debate, must be resolved when considering the virtue or otherwise of GMOs.

4.3 Assessment of the Current Liability Regime

Except for section 13 of the Consumer Protection Council Act 1992, which permits compensation orders i.e. by authorizing courts, in addition to a conviction, to order that compensation be paid to a victim of any of the offences under the Act, regulatory liability does not offer compensation to victims of breaches of regulatory measures. This means that for individual redress, victims must look to the tort law for remedies.

The problem with the tort law is that each tort is dependent on the claimant commencing and persevering with a suit. The costs here and evidential difficulties in proving causation are substantial and daunting. Secondly, GMOs raise issues ill-suited for the tort of nuisance and the rule in *Rylands v. Fletcher* to manage in a manner that promotes substantive fairness to complainants, and this again is due largely to problems of proving causation. Thirdly, for insurance purposes, the common law (as exemplified by the tort law) is pretty general in that the actions

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under it may not be quantifiable unless there is a developed and readily interpreted history.[46]

The practical difficulty with relying on the tort law is that it has not been noticeably effective in reducing environmental pollution. This is due largely to the inherent weaknesses of the requirements for a successful plea of the tort in issue and the general preference of individual rights by the courts over the general social welfare.[47] In any event, both the victims of any damage caused through GMOs as well as the persons allegedly responsible for the damage can be numerous, difficult to identify, and the medical, aesthetic, and other harms of pollution are notoriously difficult to quantify.

In three cases, therefore, tort law is either ineffective or less effective. These are where the person responsible for the damage no longer exists or there is difficulty in identifying the person(s) who caused the damage. Secondly, where the damage is widespread or diffuse. And lastly, where the damage is catastrophic or irreversible. In all of this, the remedy is to either rely on the state for compensation or create a special compensation fund (but given our institutional weaknesses, none of these options is practicable) or adopt the policy of discouraging GMOs in Nigeria.

Whether we use the current liability regime or design a new one for losses arising from GMOs, the policy choice has to be whether to rely on a fault based regime or strict liability. In other words, the question is one whether those in the genetic modification industry should be held liable only if they are at fault or should be liable for any loss caused. A fault liability regime relies on the objective criteria of duty, breach, causation and damage for a plaintiff to succeed. What this means is that if a GMO developer complies with all statutory requirements, is not negligent, and takes all measures to prevent harm that was reasonably foreseeable, then the GMO developer is not legally "at fault" even if damage ensues from his activities. Here he would not be held liable for any damage that may be caused. This means that the loss will lie where it falls and so would go uncompensated. Ultimately, the risks would be "socialized" as society as a whole must shoulder them in the end.

Risks in society are now higher. Many activities now exact a high toll on life, limb and property. Faced with this problem, society may adopt any one of these measures in response. One, it may proscribe the activity altogether as by statute declaring it illegal or the courts enjoining it as nuisance. Two, it may choose to

[46] Simon Terry, *et al* (2001) *op cit.*.
[47] Markesinis and Deakin 1994) *op cit* at pp. 456 – 459.

incur the danger of the enterprise for the sake of its social utility, but forbid it to be carried on except under specific conditions or in a prescribed manner. Lastly, society may decide to tolerate the activity on condition that the activity pays its way regardless of whether it is carried out carelessly or not. This is the solution of strict liability. The defendant is held liable not for any particular fault occurring in the cause of the activity, but for the inevitable consequences of the activity which society brands as dangerous. Genetic modification is a new technology with unknown risks. Companies and individuals entering the genetic modification industry know this. Supporters of strict liability, therefore, urge that they should be held responsible for all damage, even if not specifically foreseeable or preventable.[48]

In strict liability, the costs of the genetic modification industry are borne by the industry itself under what is termed the "polluter pays" principle or enterprise liability. Justifications for this include the fact that thereby the industry has the incentive to take effective preventive measures to avoid causing damage. Secondly, the industry costs will be "internalized" in that the industry would be responsible for all damages from the product, and could spread the costs of the possible harm through higher product prices. Lastly, plaintiffs' claims will not fail simply because the harm was not foreseeable, or because the defendant was not at fault.

The New Zealand Law Commission doubted whether a strict liability regime for GMOs can achieve the first two objectives. To the Law Commission -

> While a liability regime should ideally, encourage investment in precautions, the problem with GMOs in this regard is that the nature of possible harm and the level of risk may be unknown. If the likely harm is not foreseeable, it is difficult to see how strict liability would have any advantage over fault-based liability in encouraging preventive measures,[49]

What is more, there are two situations where no liability regime, not even strict liability, would be effective in providing the desired remedy. Here, those injured by GMOs would be left without a remedy and uncompensated loss would be suffered. The two situations are: catastrophic damage of a type or magnitude that the party responsible, its insurance company or ever a compensation fund (if any) would be unable to cover; and secondly, irreversible damage such as loss of biodiversity.

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[48] Simon Terry, *et al* (2001) *op cit.*.
[49] NZLC SP 14 at p. 19.

5. Conclusion

As would have been noticed by now, the discussion has been pretty circuitous. This is due largely to the uncertainties in the questions of GMOs and the tussle between the consuming public and the growers of GMOs. While consumers argue for the right to be "GM-free" as a fundamental right that must be preserved, growers of GMOs also argue for the right or freedom to farm.[50] The choice we have to make is how to balance these two rights. At a personal level, I am uncomfortable with GMOs more on the ground that every thing about them is unnatural with great uncertainty as to what to expect. This means that given the choice, I will prefer to be GM-free. This presupposes, then, that there has to be adequate information flow to enable me elect whether I want to consume GM food or not. Our labeling laws, at present, may not necessarily assure me of this given their general nature. For present purposes, therefore, there is the need to upgrade them and ensure that they are specific to GMOs. While we await this, we have to continue the debate on the relative merits and demerits of GMOs. I commend this forum as starters in that direction.

[50] Science and Economic Policy Branch, Australian Government Department of Agriculture, Fisheries and Forestry (2003) *op cit.*