# Examining Agricultural Resources as a Tool for the Development of Intellectual Property Rights: An Analysis

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# Abstract

Agriculture was almost without doubt the world's first example of globalization. The principles of cultivation and domestication spread from not more than eight or ten centres of origin, and the world's major crops and livestock from a similar number of centres of origin. This process began some 10,000, to 20,000 years ago, and still continues up till date, through the mechanisms of crops and livestock improvement. The relevance of agricultural resources is construed through global competitiveness and development, this paper emphasises the need to adopt the comparative and global perspectives to agricultural resources as a tool for the development of intellectual property right in Nigeria. Intellectual property right may be defined as statutory monopolies conferred by the state for a prescribed term in relation to certain creations of the mind. This paper therefore examines the relevance of agriculture to aid in the nation's development, and there after proffer solutions for the actualization of the said goals.

Keywords: Agriculture, Intellectual Property Rights, Genetic Resources, Development, Improvement.

#### Introduction

Agriculture, globally aids in the development of a nation, be it developed or underdeveloped nations of the world. Up to 80% of the population of the developing countries engaged in farming, and the majority of these farmers employing some form of conservation and improvement techniques regarding their crops, and livestock. The products of these initiatives are distributed informally at the local level, and until recently have also travelled globally by similar means, with exchange between scientist and institutions also being informal more often than not.<sup>1</sup> However, in the 30- 40 years, research has become the main vehicle for the transmission of agricultural development around the world. In the last 10 to 20 years, the private sector has undergone dramatic concentration and at the same time began to eclipe the public sector but, unlike the public sector, private sector is driven by a proximate profit motive.<sup>2</sup>

# Agricultural resources and Food Security in Nigeria

Traditionally, innovations in Nigeria's agricultural resources, preceded through the community ways of sharing over the years. Nigeria, has been pushed down the path towards private monopoly, in the form of intellectual property rights, where the rights are based on different culture, where the rights to deny access to innovation is supreme.<sup>3</sup> Those supporting intellectual property rights, (IPRs) argued that they will bring agricultural development and increase food production by encouraging private technology transfer and investment research.<sup>4</sup>

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<sup>&</sup>lt;sup>1</sup> Robert, J. I. Lettington, TRIPs and Food Agricultural Organization (FAO) International Treaty on Plant Genetic Resources in Trading in Knowledge, Development, Perspective in TRIPs, Trade and Sustainability (ed) Christophe Bellman, Graham Dutfield and Ricardo Melendez Ortiz. (London Earthscan publication ltd 2003).

 $<sup>^2</sup>$  The term "proximate" is used on the understanding that the public sector does not have an ultimate profit motive in terms of benefits for society as a whole, otherwise it would be a pointless exercise, but this differ from the point motive of the private sector, which is more immediate and focused on shareholders.

 $<sup>^3</sup>$  Intellectual Property Rights (IPRs) are rights granted by state authority for certain products of intellectual efforts and ingenuity. In the technological field, intellectual property may be seen as a recognition by the state of the contribution of the innovator to the development of new or improved products and industrial technology. These rights are the subject of specifies laws (statutes) enacted by legislature or other state authority. Examples include Patents that relate to inventions, designs relates to shapes and configurations, trademarks relate to words or symbols, applied to products or services, plants varieties have their own special form of rights and copyright relates to works of literary, or artistic craftsmanship. Apart from copyright, all other rights must be applied for, to the relevant national authority, according to statutory law and procedure. In agriculture, the types of rights of most interest are patents and plant variety rights.

<sup>&</sup>lt;sup>4</sup> Delvin, K. "Intellectual Property Rights in African Agriculture: Genetic Resources Action International (GRAIN) Spain.2002.

Nigeria, and other African countries are being forced to choose between two conflicting paths for agricultural resources and development, one rooted in knowledge and practices of its farmers or one dependent on the products of the developed nations.<sup>1</sup>

However, homogenization in agriculture undermine the diversity that secures its continued vitality and indeed viability, while limiting access to the means of production threatening the immediate food security of those without the ability to leverage that access. Agricultural resources can come in various ways and forms depending on what different people considers to be innovative. For instance, an employee of a company may invest a new way to make cars more energy efficient, while a farmer may develop a new way to keep rats out of the farm. Thus, in considering how IPRs will impact on agriculture in Nigeria, to appreciate the intangible nature of intellectual property, which makes it more vulnerable to stealing and illegal appropriation.

Until the European imperial powers imposed their will upon the African Continent, the innovation of African farmers (Nigeria inclusive) was guiding agriculture along a trajectory rooted in the needs of the people and their shifting surroundings.<sup>2</sup> In Sub-Saharan African, farming began in Ethiopia between the 4th and 6th Millennia BC, not long after the migrating pastoral people took their agricultural practice to the rich open lands of what is now Kenya and Tanzania, countries.

In West Africa, the cultivation began in the Niger River Valley about a century later. At the same time, communities in the West African forest started cultivating Yams and Oil Palm, relative to other regimes of the World. Nigeria, African farmers were slow to make up sedentary agriculture practices. There were good reasons for this, for one, they did not need to, because, they generally had access to an abundance of land and could gather the plants they needed for food and medicine by foraging. Secondly, environmental conditions made continuous intensive agricultural production very difficult. <sup>3</sup> Under these conditions, African (Nigeria) communities had to develop complex farming and foraging system in order to survive. The Suazi Swaziland, for instance, nurture and use about 200 plants species and the Teuse Thonga of Southern African regularly use 106 species for their daily needs.<sup>4</sup>

Agriculture has its place in the history of the Nation, this is the reason for the "green" colour in the flag, and the progressive roles it has played, serving as the major source of livelihood to over 75% of the population.<sup>5</sup> Long before the advent of colonization, our ancestors were sustained primarily on farming as the major occupation with the use of crude implements, compared to what is obtained today. Yet they produce enough food crops to feed themselves like most other African and also produced cash crops which they used for trade by barter system, across the Tans-Saharan trade to the end of the Atlantic trade, they responded accordingly to the demands of their time, the limitations notwithstanding.

The period of the colonial administration in Nigeria, 1861-1960, was punctuated by rather ad hoc attention to agricultural development. During the era, considerable emphasis was placed on research and extension services. The first notable activity of the era was the establishment of the department of botanical research in 1893, in the former western Nigeria, saddled with the responsibility of conducting research in agriculture.<sup>6</sup> In 1905, the British Cotton Growers Association acquired 10.35 square kilometers of land at the site now called Moor Plantation, Ibadan for growing cotton to feed the British Textile Mills. In 1910, Moor Plantation, Ibadan became the headquarters of the Department of Agriculture in Southern Nigeria, and a Department of Agriculture was established in the North in 1912.

In 1921, a unified Department of Agriculture was formed in Nigeria, after the amalgamation of the North and the South. The major policy of the Central Department of Agriculture was to increase production of export crops for the British market which was ready to absorb it for its industrial growth. Extension activities were therefore directed towards increasing efficiency in crop production and marketing. Regulations were made to set and enforce standards in export crop production.

Under the colonial government, livestock which were predominantly nomadic got a fair share of development with interest directed at the health and hygiene of the domesticated cattle. Thus, the Nigerian Veterinary Department was established in 1914 with its headquarters at Zaria. In 1924, a small veterinary laboratory was established in Vom for the production of rinderpest serum.<sup>7</sup>

<sup>&</sup>lt;sup>1</sup> Ibid.

<sup>&</sup>lt;sup>2</sup> Delvin, K. Ibid

<sup>&</sup>lt;sup>3</sup> Ralph, A. African Economic History. International Development and External Dependency ( London James Currey Ltd 1987)

<sup>&</sup>lt;sup>4</sup> Temba, M. "Farmers Seed Systems" In proceedings of the International workshop on Developing institutional agreements and capacity to assist farmers in disaster situations to restore agricultural system and seed security activities. FAO, Rome, Italy. 3-5 November. 1998.

<sup>&</sup>lt;sup>6</sup> Williams, S. K. T. "Rural Development in Nigeria. Ile-Ife (University of Ife Press Nigeria 1978) P 219.

<sup>&</sup>lt;sup>7</sup> http://www.onlinenigeria.com/articles/ad. asp?blurb=268. Accessed on 17/3/15

A fisheries organization was established in 1941 as a Fisheries Development Branch of the Agricultural Department of the Colonial Office and a Senior Agricultural Officer was appointed to conduct a survey of the industry and its possibilities. The headquarters was sited at Apese village and later at Onikan in Lagos, and being assisted by a part-time voluntary officer, preliminary experienced in fish culture at brackish water ponds at Onikan , where surveys were conducted on the canoe fisheries of Apese village and Kurarno waters around Victoria Island, Lagos.<sup>1</sup>

The colonial period also witnessed the establishment of the Niger Agricultural Project in 1949 with the aims of producing groundnut for export and guinea-corn for local consumption. It was also meant to relieve world food shortage, demonstrate better farming techniques and increase productivity of Nigeria's agriculture. The project was sited near Mokwa (Niger State) at an area which was suitable for mechanized food crops production.

In the post-colonial period, new policies were formulated in the post-independence era to actualize more equitable growth in agriculture. The earlier surplus extraction policies were quickly translated into the pursuit of an export-led growth.<sup>2</sup> This led to the demarcation of the country into the Western Region (cocoa), Northern Region (groundnut) and Eastern Region (oil palm).

The years since the early 1960s have also witnessed the establishment of several agricultural schemes and research institutions and their extension research services. Some of the major institutions/schemes are:

- 1. Farm Settlement Schemes
- 2. National Accelerated Food Production Programme (NAFPP), launched in 1972.
- 3. Operation Feed the Nation, launched in 1976.
- 4. River Basin and Rural Development Authorities, established in 1976.
- 5. Green Revolution Programme, inaugurated in 1980.
- 6. The World Bank-funded Agricultural Development Projects (ADP).

7. Agricultural Extension and Research Liaison Service (AERLS) at the Ahmadu Bello University, Zaria established in 1963.

8. The International Institute of Tropical Agriculture (IITA) established in 1967.

9. International Livestock Centre for Africa (ILCA).

**National Accelerated Food Production Programme (NAFPP):** was an agricultural programme initiated in 1972, by the Federal Department of Agriculture during General Yakubu Gowon's regime. The programme focused on bringing about a significant increase in the production of maize, cassava, rice, and wheat in the Northern states through subsistent production within a short period of time. The programme was designed to spread to other states in the Country after the pilot stage that was established in Anambra, Imo, Ondo, Oyo, Ogun, Benue, Plateau and Kano States.

**Operation Feed the Nation (OFN): This** programme was launched in order to bring about increase in food production in the entire nation, during the military regime of General Olusegun Obasanjo, on the 21st may, 1976. The programme is aimed to encourage the participation of everybody in every discipline thereby making every person capable of partly or wholly feeding him or herself. Under this programme every available piece of land in urban, sub-urban and rural areas, was meant to be planted, while government provided inputs and subsidies. (like agrochemicals, fertilizers, improved variety of seed/seedlings, day old chicks, machetes, sickles, hoes etc), freely to government establishments, individuals received these inputs at a subsidized rate.

**The River Basin Development Authority (RBDA):** River Basin Development Decree was promulgated in 1976 to establish eleven river basin development authority decree 25 of 1976.<sup>3</sup> The initial aim of the authority was to boost economic potentials of the existing water bodies particularly irrigation and fishery with hydroelectric power generation and domestic water supply as secondary objectives. The objective of the programme was later extended to other areas most importantly to production and rural infrastructural development.

**The Green Revolution:** Green Revolution was a programme inaugurated by Shehu Shagari in April 1980. The programme was aimed at increasing production of food and raw material in order to ensure food security and self-sufficiency in basic staples. Secondly, it aspired to boost production of livestock and fish in order to meet home and export need and to expand and diversify the nation's foreign exchange earnings through production and processing of export crops. The Federal Government provided agrochemical, improved seeds/seedings, irrigation system, machine (mechanization), credit facilities, improved marketing and favourable pricing policy for the agricultural products.

<sup>&</sup>lt;sup>1</sup> Ibid.

<sup>&</sup>lt;sup>2</sup> Ayoola, GB. *Essays on The Agricultural Economy 1*: A Book of Readings on Agricultural Development Policy and Administration in Nigeria. (Ibadan: TMA Publishers, 2001.)

<sup>&</sup>lt;sup>3</sup> Op cit p81.

**The Nigerian Agricultural Land Development Authority (NALDA):** <sup>1</sup>This was established in 1992. The authority aims at giving strategic support for land development, assisting and promoting better uses of Nigeria's rural land and their resources, boosting profitable employment opportunities for rural dwellers, raising the level/standard of living of rural people, targeting and assisting in achieving food security through self-reliance and sufficiency.

**National Fadama Development Project (NFDP):** The first national fadama development project (NFDP-1) was designed in the early 1990's to promote simple low-cost improved irrigation technology under World Bank Financing. The main objective was to sustainably increase the incomes of the fadama users through expansion of farm and non-farm activities with high value added output.<sup>15</sup> The programme covered twelve states of Adamawa, Bauchi, Gombe, Imo, Kaduna, Kebbi, Lagos, Niger, Ogun, Oyo, Taraba, including the Federal Capital Territory (FCT). The program adopted community driven development approach with extensive participation of the stakeholders at early of the project. This approach is in line with the policies and development strategies for Nigeria, which emphasize poverty reduction, private sector leadership and beneficiary participation. Overall appraisal of the first and second phases of the project, show remarkable success, hence the invention of the current third phase.

**National Special Programme on Food Security (NSPFS):** This programme was launched in January 2002 in all the thirty six states of the federation during the Olusegun Obasanjo's regime. The broad objective of the programme was to increase food production and eliminate rural poverty. Other specific objectives of the programme were: assisting farmers in increasing their output, productivity and income, strengthening the effectiveness of research and extension service training and educating farmers on farm management for effective utilization of resources, supporting government's efforts in the promotion of simple technologies for self-sufficiency, consolidating initial efforts in the promotion on pilot areas for maximum output and ease of replication, consolidating gain from on-going for continuity of the programme and consequent termination of external assisted programmes and projects.

**Root and Tuber Expansion Programme (RTEP):** RTEP was launched on the 16th April, 2003, under Olusegun Obasanjo's administration. It covers 26 states and was designed to address the problem of food production and rural poverty. At the local farmer's level, the programme hopes to achieve economic growth, improve access of the poor to social services and carry out intervention measures to protect poor and vulnerable groups. At the national level the programme is designed to achieve food security and stimulate demand for cheaper staple food such as cassava, garri, yam, potatoes etc, as against more expensive carbohydrate such as rice. Small holder farmers with less than two hectares of land per household were the targets of the production, processing and marketing. RTEP, also targets at multiplying and introducing improved root and tuber varieties to about 350,000 farmers in order to increase productivity and income.

While each of the above programmes sought to improve food production, the ADPs represented the major practical demonstration of the integrated approach to agricultural development in Nigeria.

Owing to the oil boom in the 1970s, Agriculture assumed a downward trend. Available data show that at independence in 1960 the contribution of agriculture to the GDP was about 60%, which is typical for developing agrarian nations. However, this share declined over time to only about 25% between 1975 and 1979.<sup>2</sup> Between 1970 and 1982, agricultural production stagnated at less than one percent annual growth rate, at a time when the population growth was between 2.5 to 3.0 per cent per annum. There was a sharp decline in export crop production, while food production increased only marginally. Thus, domestic food supply had to be augmented through large imports. The food import bill rose from a mere N112.88m annually during 1970 - 1974 to N1,964.8m in 1991.

# **Agricultural Genetic Modification**

Agricultural genetic modification encompasses both the traditional methods of trait selection through breeding and modern methods, involving bio engineering parts of living organisms. Agricultural genetic modification has been limited, but real success in modifying a few simple input traits in a small number of commercial crops adopted also in developing countries.

The wide application of genetic modification has been slowed down by severe limitation on the kind of traits available. The modern agricultural genetic modification allows segments of DNA that code gene for a special characteristic to be selected and individually recombined in the new organisms, at this point the trait is identified, selected and transferred, then unwanted trait can be removed through this technology. In Nigeria, food security can be achieved through tissue culture and genetically modification of staple foods, such as sorghum, cassava, cotton sweet and irish potatoes, yams, plantain, wheat, cowpea, banana, even soybean etc. produced through genetic modification techniques, and this has been welcomed by farmers.

<sup>&</sup>lt;sup>1</sup> Visit http/www.fadama.org. Accessed 17/3/2015.

<sup>&</sup>lt;sup>2</sup> Culled from: http://agriculturepro.blogspot.com/2007\_05\_01\_archive.html. Accessed 12<sup>th</sup> September, 2015.

Intellectual property rights regime which may be applied to genetic resources (GRS) includes, microorganisms, plants, animal and patent, plant variety and trade secrets, it should be noted that in the commercialization of genetic resources, trademark and geographical indication will play an important role. Intellectual property right may be defined as statutory monopolies conferred by the state for a prescribed term in relation to certain creations of the mind, but then there is no universally accepted definition of intellectual property rights to be found in any national laws or international treaties. It is usually divided into two. Viz: Industrial property and copyright. The principal categories of industrial property are, patents, trademarks, geographical indication, industrial design, and trade secrets, industrial property also includes agriculture and extensive industries and all manufactured or natural products, including, wines, grains, tobaccos, leaf, fruits, cattle's, minerals, mineral water, beer, flowers, and flours.

Genetic modification of food crops can be undertaken to enhance the nutritional quality of food crops and plant varieties, may be modified in a crop, resulting in a change either in the carbon hydrate content or the protein, and in most cases, a new or modified carbon hydrate or protein may be extracted to be used in enhancing other food crops like, local rice, which is called "ofada" rice.<sup>1</sup> corn and cassava.<sup>2</sup> may be modified and fortified to contain increased level of beta-carotene, which the body will then convert into vitamins and iron. This will help Nigeria to combat malnutrition, saving millions of children each year. In aqua-marine culture, trout, crafish,<sup>3</sup> even shrimps, and many other species can be genetically modified to reproduce faster and resist disease which had decimated their population in the past. Also, in animal husbandry, agricultural modification can be applied to livestock to improve the quality of milk, eggs, meat, and wool and to produce healthier and faster growing animals, through the process of biotechnology.<sup>4</sup>

As mentioned earlier, through the recombinant DNA technology, desirable traits may be introduced into animals from their own or other species within a single generation to produce larger or leaner meat, just as it is with plants and crops. The modification can also be used to determine the level of phosphorous nutrients in animal feed, which is done through the agricultural runoff that can lead to an increased concentration of phosphorous in rivers, lakes, and ponds.<sup>5</sup>

#### Misconceptions

Agricultural modification, entails both the crude or traditional method of traits selection through the process of biotechnology. Complex intellectual property right and regulatory issues, often have negative public perception, about the agricultural genetic crops, not safe for consumption which the critics says that it is harmful to human health.<sup>6</sup> The modern agriculture genetic modification.<sup>7</sup> The issue of agricultural modification of foods is an empirical evidence all over the world. Many countries are of the opinion as to the actual risks that biotechnological products, being an GMO products are not safe, and pose novel and extraordinary risks than those posed by the consumption of organic food or conventional drugs. What comes to mind, is the case of genetically modified star link maize owned by Aventis Crops Science in the USA, and the contamination of maize in Mexico.<sup>8</sup> From this, consumers are sceptical in consuming GM Foods. Many also reason that the adoption of agricultural modification of foods by many African societies may render many African farmers jobless and ultimately harm the income of many African farmers. (Nigeria inclusive) and agricultural sector

<sup>&</sup>lt;sup>1</sup> BIII and Melinda Gate has been supporting this project through the international rice research institute (IRRI) and partners to develop golden rice, a type of rice that contain beta carotene, which the body converts to vitamin A.

<sup>&</sup>lt;sup>2</sup> Cassava is a daily meal for some families in Africa. It is rich in calories, but mostly a carbon hydrate food, and for that, it offers a limited nutritional value, enriching that it can help to improve health of millions of people. BIll and Melinda Gate, and other partners, like Donald Danforth, Plant Science Centre, Missouri, USA, and National Root Crop Research Institute. NRCRI, Uwudike, recently want to develop cassava varieties with higher levels of beta carotene, which the body converts to vitamin A., as well as iron and protein called "Bio-cassava plus. This research project is mostly to benefit Nigerian small farmers and Kenyans. See http://www.gatesfoundation.org/agricultural development/pages/enriching-biocassava-plus.aspx. Accessed 10th November. 2015.

<sup>&</sup>lt;sup>3</sup> Adewumi, A. A. and Olaleye, V. F. "Catfish Culture in Nigeria: Progress, prospects, and Problems (2011) 6 (6). African Journal of Agricultural Research. Pp 1281 at 1283.

<sup>&</sup>lt;sup>4</sup> The US Food and Drug Administration approved this to increase a cow's milk yield by twenty percent. The hormone, known as bovine somatotropin (BST), which occurs naturally low in cow's. This can be produced cheaply by inserting genes associated with the pituitary gland of cattle into bacteria, which has manufactured the hormone, the hormone can be injected in the cow's feedstock.

<sup>&</sup>lt;sup>5</sup> Kershen, D. L. "Agricultural Biotechnology: Environment Benefits for Identifiable Environmental Problems. 32 ELR 11312.

<sup>&</sup>lt;sup>6</sup> Nwogbo-Egwu, C. C. " The Relevance of Agricultural Biotechnology to a Developing Nations" Journal Publication of Global Journal of Applied Management and Social Science. Vol 6 2013 Pp 179-185.

<sup>&</sup>lt;sup>7</sup> Agricultural Genetic Resources/ engineer is an aspect of biotechnology, which serves the other types, like, agricultural, medicine, environmental, industrial.

<sup>&</sup>lt;sup>8</sup> See ETC Group Backgrounder (2002) 8 Genetic Pollution in Mexico's Centre of Maize Diversity.

because of the higher price that the farmers pay for the GM seeds, this may pose a risk to the national food security. The critics also reason that the GMOs may contain unexpected new molecules that could be toxic or cause allergic reaction.<sup>1</sup>

#### Agricultural Transformation and Regulatory Agenda in Nigeria

In 2011, the government of Nigeria launched the Agricultural Transformation Agenda, with the aim of changing the perception about agriculture as a developmental issue instead of pure business. The vision is to achieve a hunger- free Nigeria, through an agricultural sector that drives income growth, accelerates achievement of food and national security, generate employment and transform Nigeria into a leading player in global food market, to grow wealth for millions of farmers. In order to achieve this vision, the value chain approach has been in use, for instance, through fertilizer procurement and distribution, marketing institutions, financed value chains, and agricultural investment framework are poised for a change using this approach.

Ironically, the issues and challenges have not changed much, since the dawn of agriculture in Nigeria. Storage ideas and facilities have not improved much, and losses incurred from post harvest handling are still very high. Infrastructural development has not progressed to meet the current challenges, resulting in stagnation of processes and logistical nightmare, access to markets has remained a recurring headache making the idea of farming very unattractive to most people.

Beyond all these facts remains that agricultural sector in Nigeria, faces a large and growing agricultural market, but the issue is that recently in 2015, the immediate past president of Nigeria, Dr Goodluck Jonathan, passed a Bill on the 20th day of April, 2015, concerning Biosafety in Nigeria, the Bill is cited as the Biosafety Bill 2010.<sup>2</sup> The Bill is amongst other things seek to provide derived benefits from modern biotechnology, under the legal framework for economic growth, improve agriculture, job and wealth creation, industry growth and sustainable environment. It also aim to minimise the risks to human health, and guard against any adverse effect of GMOs on biological diversity, and the environment.

Most importantly, the Bill seek to protect the risk associated with genetically modified organisms, safe use of GMOs, and the products thereof, without prejudice, and the risk to public health, environment, health, national sovereignty, human dignity and fundamental human rights. The Bill also emphasized the capacity to enhance food security, protection of stress tolerance, planting material for re-vegetation, soil binding for erosion control, as well as genetically enhanced organisms for bioremedian of oil polluted sites. Others are for the improvement in plants and animal yields, as well as nutritional value, production of new breeds/varieties of animals and plants. All these regulations are fixed in the National Biotechnology Policy, National Biosafety Guideline, National Agency for Food and Drug Administration and Control (NAFDAC) Act.<sup>3</sup> Food Drug and Related Products, Act.<sup>4</sup> Counterfeit and Fake Drugs and Unwholesome Processed Food (miscellaneous Provisions) Act.<sup>5</sup> Agricultural ( Control of Import) Act.<sup>6</sup> Animal disease ( Control) Act.<sup>7</sup> Live Fish ( Control of Importation) Act.<sup>8</sup> National Crop varieties Breed ( Registration) Act.<sup>9</sup> etc.

# Conclusion

The Biosafety Bill contains the policy of the Federal Government on the development, release, and commercialization of GMOs, including the modification of Agricultural products, through the application of biotechnological process. The Bill contains the guidance in making decision, whenever the issue of agricultural modification techniques arises. It also to aid the federal government's commitments to its citizenry to tackle the problems of poverty and food insecurity in Nigeria, and a good match to the world's global debate on food security. Almost all the foods consume in the developed world, especially in the USA is done through agricultural modification, through the application of biotechnology techniques, which is good for human and animal consumption, and does not in any way effect the environment.

The Nigeria Government should take a lead from there, by encouraging farmers to be involved, to move it away from rhetoric to a life giving money venture for the good of man and country. The Agricultural Fair of March, 2012, showed that Nigeria faces a large and growing global agricultural market. The rising commodity prices, growing demand for food and opportunity in biofuel. Agriculture poses an alternative, and

<sup>&</sup>lt;sup>1</sup> See Buchini, L. and Goldman, L. R. "A Snapshot of Federal Research on Food Allergy: Implications for Genetic Modified Food. Available online at http://www/pewbiotech.org/research/allergy/pdf. Accessed 20th December, 2015.

<sup>&</sup>lt;sup>2</sup> See Vanguard Newspaper of Tuesday may, 12th, 2015 or visit www. vanguardngr.com. Accessed 12th May, 2015.

<sup>&</sup>lt;sup>3</sup> Cap N1, Laws of the Federation of Nigeria. 2014.

<sup>&</sup>lt;sup>4</sup> Cap F 33, Laws of the Federation of Nigeria. 2014.

<sup>&</sup>lt;sup>5</sup> Cap C 34 Laws of the Federation of Nigeria. 2014.

<sup>&</sup>lt;sup>6</sup> Cap A 13 Laws of the Federation of Nigeria. 2014.

<sup>&</sup>lt;sup>7</sup> Cap A 17, Laws of the Federal of Nigeria. 2014.

<sup>&</sup>lt;sup>8</sup> Cap L 24, Laws of the Federation of Nigeria. 2014.

<sup>&</sup>lt;sup>9</sup> Cap N 27, Laws of the Federation of Nigeria. 2014.

present significant opportunity for Nigeria.

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