ENVIRONMENTAL IMPACT OF AGRICULTURAL TECHNOLOGY IN NIGERIA: LEGAL ISSUES.

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ABSTRACT
The increase in human population and the need to adequately provide food for the sustenance of this teeming population have led to a corresponding increase in the use of land for agricultural purposes. This quest for food has given rise to both positive and negative impacts on the environment due to the various modes of agricultural practices adopted by players in agricultural industry. This paper will dwell on the negative environmental impact of agricultural technologies in Nigeria which includes but not limited to deforestation, desertification, erosion, pollution, greenhouse effect, loss of biodiversity and extinction of species of wild life. This paper will also x-ray the relevant legislations and regulations relating to agricultural practices in Nigeria with a view to ascertaining their efficacy or otherwise. It is observed that poverty, ignorance, illiteracy and corruption are the bane of unsustainable agricultural technologies in Nigeria, the education of the farmers and agricultural extension services are recommended.

INTRODUCTION:
With the overwhelming increase in human and animal population in Nigeria the importance of agriculture cannot be relegated to the canvas. The quest for higher standard of living has increased the propensity for environmental damage by man. Agriculture is the art or practice of cultivating the land. The definition of agriculture has been expanded to include the growing of crops, rearing of animal or animal husbandry and fish farming to provide food for man. In a bid to provide food for man, some unwholesome and unsustainable agricultural practices are adopted and those practices invariably impact negatively on the environment. (Catherine, 1993)

The environment which is Combination of elements whose complex interrelationship make up the settings, the surrounding and the conditions of life of the individual and society as they are felt must be protected from these unsustainable agricultural practices if man must enjoy his stay on earth. It is important to identify some of these unsustainable agricultural practices which have negative impact on the environment. (Violet 2011)

NEGATIVE ENVIRONMENTAL IMPACT OF AGRICULTURAL PRACTICES

It is observed that there are numerous agricultural practices in Nigeria. This paper intends to discuss a few of them alongside their negative impact on the environment.

Bush Burning: In some rural communities, subsistence farming is their only means of survival. Some farmers in the communities, regardless or ignorant of the relevant legal frameworks engage in illegal logging and excessive bush burning in order to clear the forest for farming. Some also burn the bush to smoke out wild animals from burrows and hunt them down for food. Bush burning, excessive use of pesticides, shooting, trapping and smoking out rodents invariably lead to deforestation atmospheric imbalance and threatened extinction of some wild life and forest resources. Bush burning also causes air pollution when noxious fumes containing carbon-monoxide are released into the air resulting in atmospheric imbalance. Due to the demand of wood fuel, primary tropical forest has been decimated by 97 percent. (Nathaniel 2012)

Pesticides, Herbicides and Fertilizers: Some rural dwellers now make use of pesticides and herbicides to control pests and herbs in a bid to embrace modern agricultural practices. The
excessive use of pesticides and herbicides and other chemical to fight pest and unwanted herbs also impact negatively on the environment by destabilizing the organic components of the soil and ecosystem. Utilization of fertilizers to enhance agricultural production affects the environment through run-off water often ends up in rivers, lakes underground water and adversely impact on beneficial insects, microorganisms and distort aquatic balance. (Boudouresque, etal 2012)

**Cattle ranching:** In rearing animals for food and commercial purposes, large expanse of forests is devastated when herdsmen take their cattle about for grazing. Often times, the forests are excessively grazed leading to deforestation and desertification. Constant heavy treading by cattle loosens the soil surface and expose it to wind and sheet erosion. According to British environment Norman Myers, five percent of deforestation is due to cattle ranching. (Chianu 2006)

**Poultry farming:** In recent times, one aspect of agriculture that has raised serious environmental concerns is the rearing of domestic birds for food. Predominantly poultry farming dwells more on chicks for eggs and meat. (Aweto 2014). The negative environmental impact of rearing birds cannot be easily quantified. It ranges from air pollution, land pollution, water pollution to noise pollution. Often times, the droppings from the poultry industry are dumped on the ground or in water bodies. This contaminates the underground water, mostly affecting fauna and flora and aquatic life. (Violet 2011)

The noise and air pollutions saga of poultry farming are captured in the case of *Abiola v. Ijeoma*, where, the plaintiff and defendant occupied adjoining premises in a residential area in Surulere. The defendant kept poultry at the back of his house as a pastime. In 1969, the defendant purchased four hundred day old chicks which he kept in pens erected against the boundary wall which was about five feet from the plaintiff’s house. The plaintiff claimed that excessive noise made by the chickens in the early hours of the morning disturbed his sleep and that nauseating smell from the pens interfered with his comfort. He sought damages and an injunction to restrain the alleged nuisance. The plaintiff was accordingly awarded damages and an injunction restraining further acts of nuisance by the defendant. (ALL NLR. 2, PART 268 1970)

In view of the negative environmental impact of unsustainable agricultural technologies and the necessity to ensure sustainable utilization of environmental resources, certain legislations were made. Some of these legislations will be discussed as follows:

**NATIONAL ENVIRONMENTAL STANDARDS AND REGULATIONS ENFORCEMENT AGENCY (ESTABLISHMENT) (NESREA ACT NO. 25 OF 2007)**

The agency is saddled with the responsibility of biodiversity conservation and sustainable development of Nigeria’s natural resources in general. The Act empowers the Minister of environment to make regulations for environmental protection and resource conservation. The regulations include:

**NATIONAL ENVIRONMENTAL (PROTECTION OF WATERSHED, MOUNTAINOUS, HILLY AND CATCHMENT AREAS) REGULATIONS, 2009. (NESREA ACT, 2007)**

The main objective of these regulations is to prevent and reduce the destruction the ecosystem through activities which are inconsistent with good land management practices especially in areas prone to landslides, floods, drought, desertification, siltation, heavy sediment loads, falling rocks, fires and damage by wind. The regulations prohibit logging, dredging, bush burning, disposal of any waste and any other land use such as some agricultural practices, grazing and mining that
may cause land degradation in any watershed, mountainous hilly or catchment area, except in accordance with the provisions of the regulation.

Violation of the provision of the regulations is punishable on conviction with a fine not exceeding N200,000.00 or imprisonment for a term not exceeding one year or both for an individual offender and fine not exceeding N1,000,000.00 and an additional fine of N50,000.00 for every day the offence subsists for a corporate body. The regulations are often flouted with impunity owing to illiteracy, corruption and poverty in Nigeria. Most of the people residing in these areas under review are illiterate who hardly understand the implications of their actions regarding the environment. Some are so poor that they throw caution to wind.

(2) NATIONAL ENVIRONMENTAL (WETLAND, RIVER BANKS AND LAKE SHORES PROTECTION) REGULATIONS 2009. (NESREA ACT, 2007)

It provides for the conservation and wise use of wetlands and their resources in Nigeria. It ensures water catchments conservation and flood control. It ensures the sustainable use of wetlands for ecological and tourism purposes for the common good of all citizens, ensure the wetlands are protected as habitats for species of flora and fauna, minimize and control pollution. It mandates wetland resources to be utilized in a sustainable manner compatible with the continued presence of wetlands and their hydrological functions and services. It constitutes an offence for anyone to fail, neglect or refuse to protect a lake shore or river bank from environmental degradation in accordance with these regulations. Contravention of any of its provisions is punishable with a conviction of not less than three months imprisonment or a fine not exceeding N500,000.00 or both.

(3) NATIONAL ENVIRONMENTAL (CONTROL OF BUSH/FOREST FIRE AND OPEN BURNING) REGULATIONS, 2011: (NESREA ACT, 2007)

The main objective of these regulations is to prevent and minimize the destruction of ecosystem through fire outbreak and burning of any material that may affect the health of the ecosystem through the emission of hazardous air pollutants. It prohibits the burning of any bush/forest or engaging in any activity that may cause bush/forest except in accordance with the provisions of this regulation. A person who has obtained a permit to burn bush/forest is expected to give notice of his intention to do so to the enforcement officer of the Agency in charge of the area where the land is situated. Burning of bush or forest for hunting of animals is prohibited. Violation of the provision of this regulation is punishable on conviction with a fine not exceeding N50,000 or imprisonment for a term not exceeding 3 months or both such fine and imprisonment for individual offenders and fine not exceeding N1,000,000 for corporate offenders and an additional N20,000 for everyday the offence subsists. The regulation is one of the most flagrantly breached regulations. Indiscriminate bush burning is a daily occurrence in Nigeria. The exceptions provided for in Regulation 22 for barbecue grills and outdoor cooking devices, small cooking and camp fire, on-site burning of organic agricultural wastes for subsistence farming, but not pesticides, plastics or other non-organic material, ceremonial or celebratory bonfires, individual open fires to control plant and animal disease and open fires as necessary to control invasive plant and insect species without restricting the scope of the activities or providing for supervision by NESREA officials where necessary has compounded the challenge of indiscriminate burning which often affects forest resources.

(4) NATIONAL ENVIRONMENTAL (DESERTIFICATION CONTROL AND DROUGHT MITIGATION) REGULATIONS 2011:(NESREA ACT, 2007)
The objective of this regulation is to:

a) Provide an effective and pragmatic regulatory framework for the sustainable use of all areas already affected by desertification and the protection of vulnerable lands;

b) Sensitize the public on the causes and dangers associated with desertification and the attendant land degradation:

c) Encourage the sustainable use of fuel wood through the use of more efficient and energy saving devices with a view to encouraging their wider use and adoption at all levels;

d) Promote the use of alternative sources of energy, including the use of wind, solar briquettes, coal, gas etc;

e) Encourage reforestation, reseeding, afforestation and conversation of areas under desertification or vulnerable to same for the rehabilitation of degraded lands;

f) Attain the 25% national forest cover as prescribed by the United Nations Food and Agricultural Organization (FAO) with a view to being self-sufficient in wood and other forest resources, including the enhancement of ecological integrity and the abatement of the impacts of climate change; (Regulation 3, 7, 22)

g) Ensure sustainable agricultural and range management practices, improved animal husbandry and management of water resources in the desertification prone areas with a view to achieving sustainable livelihood, poverty reduction and wealth creation; through introduction of modern and affordable production technologies to resources poor farming communities;

h) Promote cooperation with relevant international and non-governmental organizations through partnerships, knowledge sharing and the domestication of such conventions as the United Nations Convention to Combat Desertification and Drought Mitigation (UNCCD) and the United Nations Framework Convention on Climate Change (UNFCCC) to which Nigeria is signatory; and

(Rajendra 2001-2002)

i) Sustain and expand areas under forest and tree cover through conservation, protection, rehabilitation of natural vegetation’s, tree planting and control of forest exploitation, with a view to reversing desertification trend.

Deteriorating environmental conditions in Nigeria attests to thriving unsustainable utilization of environmental resources and the Agencies assigned the responsibility of enforcing the regulations are overwhelming with the enormity of the systemic challenges they are confronted with. This accounts for their inefficiency.

(5) NATIONAL ENVIRONMENTAL (PROTECTION OF ENDANGERED SPECIES IN INTERNATIONAL TRADE REGULATION 2011). (NESREA ACT, 2007)

It was made to compliment the endangered Species (Control International Trade and Traffic) Act (Cap F49 LFN, 2002) and the convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). It is to protect endangered wildlife flora and fauna from extinction by regulating the import, export and dealing with them in a manner that is inimical to their protection and preservation. Contravention of the regulation is punishable with a fine of 5 million naira and imprisonment of not more than three years or both. Nigeria’s wildlife and ecosystem are gravely endangered due to illegal hunting, construction works; illegal logging and other human activities in spite for this regulation. It is estimated that wildlife in Nigeria will be nonexistent in the next 25 years. Some species of elephant, giraffe, gorillas, rhinoceros and birds are believed to already be critically endangered. (Daily Trust May 17, 2012). Wildlife sale and consumption constitutes the major source of protein and income for most rural drivellers. Due to lack of sensitization on the necessity to regulate its consumption and encourage alternative sources of meat by rearing of domestic animals and vegetables, other species are heading for extinction more so as inadequate data exists on the population of wildlife and safe consumption levels.

The objective of the regulation is to protect human life and the environment through the restriction or prohibition of land disturbing activities and usage which are dangerous to health, safety and property. This is due to water induced erosion caused by increased flow velocity and Volume/depth of surface run-off. It is to regulate filling, grading, dredging and other development projects which may increase soil erosion or flooding incidence and damage. The Agency in collaboration with the relevant ministries, department, other agencies, states and local government is mandated to conduct an inventory of storm water collection systems of towns and cities in Nigeria. The inventory is expected to include catchment basins, manholes, pipes, culverts, ditches, bridges, streams, ponds, dams and other features of the existing collection systems for the purpose of identifying erosion susceptible areas or location and enforcing all environmental management programs as well as ensuring strict compliance with environmental impact statement and policies. The implementation of the provisions of this regulation has been an uphill task. Human induced soil erosion and flooding is continuing unabated due to uncontrolled logging, clogging of drains, unplanned development, damming of water courses and stripping of land surfaces. Inventions have been haphazard and ad hoc and no meaningful impact has been made by the regulation. Financial intervention by the Federal Government of Nigeria through the institution of the ecological fund has been controversial due to the misappropriation of the funds. (Punch Newspaper, March 18, 2012) This is threatening to frustrate the exercise.

(7) NATIONAL ENVIRONMENTAL (FOOD, BEVERAGES AND TOBACCO SECTOR) REGULATION 2009. (NESREA ACT, 2007).

The regulation aim at preventing and minimizing pollution from all operations and ancillary activities food, Beverages and Tobacco companies in the Nigerian environment. Companies are mandated to apply up to date, cost effective efficient cleaner technologies to minimize pollution to the highest degree practicable. Its emphasis should be on environmental planning in order to prevent, reduce or eliminate pollutants at source and less emphasis shall only be placed on external hardware which are end of pipe mechanism, in the event of incident resulting in an adverse impact on the environment, whether socio-economically on health wise, the company be responsible for the cost of damage assessment, control and clean up, remediation, reclamation or restoration; compensation to affected parties and cost of damage assessment, and control contamination arising from leakage of surface or underground oil or fuel or chemical storage tank likely to cause pollution of the environment including surface water and ground water should be avoided. (Osho 2010)Violators of these regulation are mandated on conviction, to pay a fine not exceeding N200,000 or a term of imprisonment not exceeding two years or both such fine and imprisonment and an additional fine of N5,000 for everyday the offence subsists. Where the offence is committed by a company, it shall on conviction be liable to a fine not exceeding N1,000,000 and an additional fine of N50,000 for every day the offence persists.

(c) CONVENTION ON BIODIVERSITY

The need to preserve environmental resources for the benefit of the present and future generation necessitated the Convention as an off shoot of the United Nations Conference on Environment and Development (UNCED) 1992 Rio Conference. It domestication in Nigeria has not improved bio resource abusive utilization due to hostility of host communities which view government conservation efforts as an infringement on their right to exploit their natural resources. Nigeria is
apparently ill equipped economically and socially be implement the provisions of the Convention. It is yet to figure out a plan to increase funding to arrest the rate of biodiversity loss by 2015 or enforce the prioritization of biodiversity considerations in developmental projects. (United Nations on Food Day, October 16 2012)
(d) CONVENTION TO COMBAT DESERTIFICATION

The realization that complex interaction between physical, chemical biological and socio-economic factors with local, national and global implications has led to increased awareness drive and encouragement of signatories to the Convention including Nigeria are to enhance global efforts to halt desertification which remains a permanent threat. Although drought often triggers desertification, human activities like overgrazing, unsustainable logging, poor drainage system, uncontrolled population growth, unregulated farming and rapid urbanization are also contributory factors. Desertification often occurs in fragile ecosystems. (UNCCD Article 1 and 5, DP1/876/SD February 1997)

(e) LAND USE ACT: CAP L5, LFN 2004.

The Act vests all land in the territory of each State (except land vested in the Federal Government or its agencies) solely in the government of the state to hold on trust for the people in the state. The Government is responsible for allocation of land in all urban areas to individual’s resident in the state and to organization for residential, agricultural, commercial and other purposes while the local government is responsible for land in non-urban areas. Holders and occupiers of lands in urban and rural areas were vested with leasehold interest in the land to as statutory right of occupancy and customary right of occupancy respectively. The governor is empowered to revoke the right of occupancy granted on grounds of public policy. The resentment of communal land holders of the subservience foisted on them by their having to pay rents for their use of and occupation of their “Nature’s gift” has increased forest conflicts which often pit forces of forest conservation against real estate developers, the government and the original farm dwellers on another hand as well as farmers and forest guards on yet another front. This has led to the utilization of forest arsons as a medium of protest against government forest policies. Customary land tenure system remains the determinant of much of the practice of land holding.

Most of the legislations examined in this paper were generally or specifically made to curb the excesses of unsustainable agricultural practices on the environment yet the environment continues to carry the weight of the negative impact of agricultural practices. It is observed that poverty, poor service delivery and non-prioritization of existing legislations on biodiversity and agriculture are the bane of sustainable agricultural practices in Nigeria.

CONCLUSION

It is obvious that there is need to embrace sustainable agricultural technologies to minimize environmental impact. The negative environmental impact of bush burning, use of pesticides and herbicides cattle-ranching and unwholesome poultry farming will continue unabated unless relevant regulatory agencies wake up to their responsibilities to enforce existing legislations.

RECOMMENDATIONS

1. To reduce the negative environmental impact of agricultural practices in Nigeria, existing legislations on agricultural practices should be enforced.
2. Modern agricultural extension scheme should be implemented at all level of agricultural practices with special emphasis on the rural populace.
3. Reforestation and afforestation programmes should be encouraged and the use of pesticides and herbicides should be discouraged by proscribing the manufacturing companies or imposing huge taxes.
4. Government should map out grazing grounds for herdsmen to avoid indiscriminate and overgrazing of forest.
5. Regulatory agencies should be incentivized to work objectively.

REFERENCE

11. The United Nation Conservation To Combat Desertification Defines Desertification As Land Degradation in Arid and Semi-Humid Areas Due to Various Factors Including Climate Variations and Human Activities See Article 1. UNCCD.