

Salient Issues in the Legal Framework for the Sustenance of Agricultural Practice in Nigeria

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ABSTRACT

The earth has been groaning under the burden of dysfunctional farming methods laden with infrastructure that do not meet prescribed standards. The need for enhanced integration may be better appreciated, given the fact that agriculture supports life in all ramifications. The ultimate goal therefore, will be to enable the public understand the concept of sustainability. We are called to expand our connections to the earth; to seek for alternate ways of dealing with the earth in order to preserve our waters, the air and the soil, which is the soul of life. Hence, this study reviews the salient issues in the legal framework for the sustenance of agricultural practices in Nigeria. It is the view of this author that while methods of farming and agriculture differ from region to region, there is a common trend that follows the endeavour in terms of massive degradation to the environment. It becomes necessary therefore that agriculture has to imbibe sustainable holistic practises that ensure a balance between the increasing pursuit for economic affluence by the various stakeholders and the legitimate concerns about the environment. This can only be achieved by reducing the multitude of factors that pre-dispose the environment to harm from agriculture. This will be a well guided balancing act and unique relationship that ensures that the farmer is well supported to function efficiently and effectively in a manner that complements the environment.

Keywords: Farming, agriculture, enterprise, principles of law

INTRODUCTION

Farming is viewed as a unique way of life which is dependent on natural forces which occur in an isolated rural environment¹. Farmers are viewed as a uniquely stabilizing element in society because of their vital role in food and other production². In the light of this, it may not be totally misplaced to say that farmers are a special breed of people. We depend on them, literally for the food we eat. They produce livestock, poultry and other agricultural commodities. As such, emphasis is often placed on them by the society. Even though farming is not a very glamorous enterprise, the industry remains of utmost beneficial interest to the society. In America, for example, they constitute only about 2% of the population³. In the developed world, the enterprise is highly organized and mechanized. As such we find that a minimum amount of people are required to be in the business. Most of this

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¹J.W. Looney, Julia R. Wilder, Sam Brownbac, James B. Wadley. *Agricultural Law: A Farmers guide to Representing Farm Clients*. 1990, American Bar Association p.5

²Ibid

³Ibid p. 6

population is made up of farm clients⁴. Most rural farmers utilize property that has been handed down to them from generation to generation, through successive interests. Some others may not own the farms on which they operate, and may lease the farms or pay rentals. All over the world, farming comes with its own peculiar challenges. At first glance, it may appear that there is no need to be concerned over the activities of farmers. However, significant changes have occurred to the world ecology through the ages from agricultural activities. These changes relate to the pollution of the air and atmospheric sphere, water contamination, degradation of the soil and environment. In law, the meaning of land is all encompassing to include the surface of the earth, the subsoil and the space above it. This definition is spelt out in the principle of law-*quicquid plantatur solo solum cedit*.⁵ Such changes are so enormous that they may even be at par with other equally damaging activities such as gas emissions from motor vehicles, and other non-friendly environmental practises that may occur in the excavating, mining and oil sector. What is needed therefore is a system of environmental control which is flexible enough to ameliorate the difficulties encountered by farmers in their profession and allow them to maximize profits in a manner that confers benefits on the society; and at the same time promotes sustainability. This can be achieved through setting a vibrant environmental policy that outlines priorities, as well as a review of current farming methods. Joel Glanzberg states that “by observing nature we can learn to imitate and work with the features of the landscape and all living things to provide for our own needs rather than working against natural systems”⁶. Basically, he is suggesting that it is easier to work with nature by understanding more about the environment we live in.

Unsustainable Farming Methods and Degradation of the Environment

Any individual who wants to learn about how the planet works may be startled at the variety of materials from the scientific world whose foremost goal is to “reduce the risk of atmospheric change”⁷. Most scientists insist that biodiversity; the inter-connectivity of human existence is what is holding the planet up. The Rutgers University Biodiversity Institute defines it as; “...the sum total of all the plants, animals (including humans), fungi and micro-organisms, along with the individual variations and the interactions between them. It is the set of living organisms and their genetic biases that makes the planet earth and allow it to function as it does, by capturing energy from the sun and using it to drive all of life’s processes”⁸. Energy is the source of life, the glue that ensures the preservation of the environment.

⁴Id. p.1

⁵C.O.Olawoye: *Title to Land in Nigeria*, Evans (1974)p.9

⁶Permaculture as a Way of Seeing and Acting in the World,” in: Gregory Cajete ed. *A People’s Ecology* p.227

⁷Dianne Drapper and Maureen G. Reed. *Our Environment: A Canadian Perspective* (Third Edition) (Thompson and Nelson 2005).

⁸Rutgers’s Biodiversity Center Homepage. *What is Biodiversity*. <http://aesop.rutgers.edu/~biodiversity/whatisz.htm> DEFINE. In Craig Collins *Toxic Loopholes: Failure and Future Prospects for Environmental Law*. Cambridge University Press 2010 p.125

Loss of Habitat: The importance of this definition is made more crucial by the ⁹fact that each species of life on earth has its own designated habitat. As a matter of fact, human beings share the planet earth with “13 million other species.” To upset the balance of the ecosystem in any way would invariably set up a chain reaction. A change in the dynamics of one part of the ecosystem will have very grave adverse effects on the other spheres¹⁰. It can therefore be reasonably anticipated that since the air we breathe, clean water, food, plant life and even we humans, as well as other animals depend succinctly on the environment, it may not be an exaggeration to say that with every phenomenon of adverse change, plant species are wiped out. This in turn exacerbates our susceptibility to weather shift, droughts eroding coastlines and ozone depletion. It may not be immediately obvious how much habitat has been lost to farming. This is because most of the loss has occurred before now, and it may seem that the threat to the environment is from new age uses of the environment. When we consider that in the U.S, close to 930 million acres of places previously designated as habitat has been converted to farmland over the ages, then the seriousness of the impute to wildlife over time becomes apparent¹¹.

Decline of Traditional Farming Communities: Farming of today is typified by huge investment by corporate giants who depend heavily on mechanisation and industrialization. Energy is used all the way down the food chain from farm to folk. Aside from these, huge transformation has occurred on the physical landscapes of rural communities, and is incredibly continuing at an alarming rate, as these corporate groups seek competitiveness for their products in order to meet global demands. The dexterity of invasive corporate farming, with its attendant super industrialized agri-business has meant that once thriving agricultural communities continue decline primarily to a place to “simply do business”¹².

In industrial agriculture, energy is used on farm mechanisation, food processing, storage, and transportation process¹³. Examples of non-sustainable agricultural practices include over application of synthetic fertilizer or animal manure. This causes eutrophication or pollution of nearby rivers. Besides, farm mechanisation means that ordinarily available jobs which form the bedrock of the rural communities no longer exist as they have been

⁹Ibid. p.125 According to the UN,s 1995 global diversity Assessment, humans share the planet with an estimated 13 million other species. A generation ago, that estimate was 1.3 million, but more species are discovered every year. About 90 percent of the worlds, mostly insects and fungi, have not yet been studied or even given specific names.

¹⁰Legal Protection of the Environment in Developing Countries (Ed.) by Ignatio rieto and Raul Noceda, Being the Colloquium of the International Association of Legal Science 1974 and published in 1976, page 27 (hereinafter called the Mexico Conference Papers).

¹¹David. S. Wilcove, “Quantifying Threats to Imperial Species in the United States”, 48 BIO SCI. 60 (1998). The effect of habitat loss on species viability may not be fully manifested for decades and centuries, see Michael L. Rosenzweig, “Heeding the Warning in Biodiversity’s Basic Law”, 284 SCI. 276, 277

¹²Machum S., “De- prioritizing Agriculture: Lessons from New Brunswick” in R. EPP and Whitson (Eds.) *Writing off the Rural West* Edmonton: Parkland Institute and University of Alberta Press. 2001

¹³FAO World Agriculture Towards 2015/2030"Fa0.org.

overshadowed by large scale mechanisation in the cities. The attendant result is the displacement of the population, especially the youths to work on these new locations despite the substantial upheaval to their lifestyles. In order to compensate for the vacuum created by the drift, and to prevent total collapse of the agriculture communities, new age manufacturing industries emerge in droves to the rural communities to act as a palliative to their dwindling fortunes by providing jobs that are totally unrelated to agriculture.

As laudable as these sounds, the succour they intend to hold out through re-integration of the rural communities is often a mirage. Most of these young workers feel trapped yet they lack the wherewithal to extricate themselves from their situation. The future portends abysmally drab as they are left with a feeling of utmost vulnerability. They are caged in a circle of low wages, casualization of labour, restrictive contracts, and a mundane lifestyle that goes against the very grain of their upbringing. They are turned to agents of mutilation of the environment, through the unwholesome industrial practices of their new employees.

Water: The main issue in the use of water is salinization due to improper management of irrigation. It has been estimated that water is in massive use in agricultural endeavours. As much as 40% of the energy used in agriculture is geared towards irrigation¹⁴. The resultant effect of so much emphasis on irrigation is that often times, resort has to be made to groundwater sources. This leads to effects such as water table drawdown, land subsidence, and desertification, destruction of natural springs and associated wildlife habitats and salt water intrusion¹⁵. There is pollution when materials accumulate where they are not wanted. Though the materials which pollute may sometimes be naturally viable, they constitute danger when out of place¹⁶. Often times, the depletion of most natural resource of water is gradual and unnoticed. This is because men have always been able to harness water either through dams, or other forms of water support for agriculture. Saline soils are those that contain sufficient amount of salt to adversely affect plant growth¹⁷. Salinization of the soil is a huge problem, as “irrigated farming continually degrades its surrounding environment in arid and semi- arid areas through the salinization of soils and water¹⁸. Irrigating arid and semi-arid soils, leaches salt and other minerals from the soil, causing them to accumulate in the plant root zone and retard plant growth¹⁹. Apart from salinization, massive movement

¹⁴Lindsay McWilliams, *Groundwater Pollution in Wisconsin: A Bumper Crop Yields Growing Problem*, ENV'T My 1984, at 25, 27. Susan A. Schneider, *Food Farming and Sustainability: Readings in Agricultural Law*, Carolina Academic Press Durham, North Carolina; 2011 p.124

¹⁵See Barton H. Thompson, J.R., “Water allocation and protection; a united states case study”, in *Earth Systems: Processes And Issues* 476 (W.G. Ernst ed., 2000)

¹⁶Rabin and Schwartz, *The Pollution crises*. official Document p.4 cited in *Environmental Law*, Faculty of Law, University of Lagos, 1990 Omotola.(Ed.): K.M. Mowoe.“Quality of Life and Environmental Protection”, p.171

¹⁷*Geography of Hope*. (USDA Natural Resource Conservation Serv. Geography of Hope 7) (1996) p. 33, in Susan A. Schnieder, *Food Farming and Sustainability: Readings in Agricultural Law*, op.cit., p.125

¹⁸P.A. Matson *Agricultural Intensification and Ecosystem Properties*. p. 506

¹⁹See Mohammed T. EL–Ashry *Salinity Pollution From Irrigated Agriculture* .p.49

of water accounts for eroding of the top soil through erosion. Inherent in this is the process of pollution of our rivers and larger water areas. Water depletes the quality of life by spreading toxic chemicals generated by farmlands. Moving water has the effect of transporting pesticides beyond farm boundaries. This causes severe damage to wildlife and habitat functions²⁰. Also, high erosion rates associated with cultivated agriculture can lead to sedimentation in reservoirs and lakes, which reduces the lifetime of these water systems as aquatic habitat²¹. Sources of clean water is thus reduced, and even water that occurs in a clean state in nature in natural aquifers is continually tapped and depleted, thereby forcing people, especially in developing countries to rely on polluted surface waters which are highly unsanitary. The United Nations Stockholm conference on the Environment in 1972 decries the continued deprivation in developing countries of adequate food and clothing, shelter and education, health and sanitation²².

Air Pollution: Fog samples gathered in suburban Maryland had a mix of up to 16 different agricultural pesticides²³. Thus, apart from having very unpleasant odours, farms are significant sources of air pollution. Fertilizers produce several greenhouse gases including carbon dioxide, nitrous oxide and methane²⁴.

The Effects of Some Basic Crops/Livestock Production on the Environment

Coffee: The delicate interconnectivity of man to his immediate environment is broken in the production of coffee in Central America. Between 1978 and 1992, the U.S Agency for International Development provided \$80 million to Haiti, El Salvador, and Guatemala. This led to tremendous increase in production of coffee²⁵. It is also on record that the lowered price of coffee in the world market could be attributed to the series of funding by the World Bank and Nestle to Vietnam²⁶. But the issue to note was that in the two cases outlined here, the traditional methods of coffee growing were abandoned for the seemingly better mode of “Sun Coffee”. Sun coffee was better adapted to open spaces²⁷. As a result, most shade trees and fruit trees had to be cut down. The extent of degradation in this regard was that:

i 150 species of migrating songbirds lost their habitats.

²⁰James Stephen Carpenter, “Farm Chemicals, Soil Erosion and Sustainable Agriculture.” 13 Stan. Env’tl. L.J 190 (1994)

²¹Ibid at p.508

²²Omotola (ed.) *Environmental Law*, op.cit .p.173.

²³Robert L. Kellog, “*The Potential for Leaching of Agrichemicals Used in Crop Production: A National Perspective*” p.30

²⁴Office of Policy, US, EPA (Environmental Protection Agency) *Inventory of U.S Greenhouse Gas Emissions and Sinks: (1990-1997,)* at 5-1 (1999). EPA estimates that agricultural activities were responsible for seven percent of total U.S greenhouse gas emissions in 1991.

²⁵Dicum, G, and N. Luttinger. *Anatomy of an Industry: From Cup to the Last Drop* (New York Press, 1999.)

²⁶Garcia, Deborah Koons. *The Future of Foods* [Film]. Millvalley, C.A: Lily Films, Butler (producer) Available at www.thefutureoffood.com/index.htm

²⁷Dicum, G,and N. Luttinger. *Anatomy of an Industry: From Cup to the Last Drop* Op.cit.

- i Farmers lost secondary income from the traditional practice of sale of fruits.
- iii Sun coffee needed more water, pesticides and fertilizers²⁸. These costs were unforeseen and borne alone by the farmers. So though output increased, cost of production per acre, equally increased.
- iv The delicate chain of nature was broken as most pests which had beneficial role to play in the biodiversity were affected.

Bananas: Banana is a crop that is highly consumed by most people. It adds variety to the breakfast table, and because of its unique sweet taste, it is also enjoyed as a fruit juice. Most of the world's banana is grown in Costa Rica. In order to maintain their market share in the competitive international market often controlled by power blocks, it has to make standards an abiding mantra of production. Costa Rica has however had to pay a heavy price for its expansion of the Banana trade which takes up large expanse of land, in terms of massive reduction of its tropical forests. The results were extreme degradation and deforestation, overreaching chemical use, massive generation of solid waste, pollution of rivers; soils and unemployment. It is believed that reports produced by academics and technical experts chronicling this were suppressed for years²⁹. Because of the need to produce preferred specie for the Canadian market, Cavendish banana was introduced. It was however without the rigour or resistance of the former species. It was susceptible to sigotoka disease, and this meant extremely chemical intensive production, using chemicals like nematicides³⁰. It is also believed that all the nematicides in current use are highly toxic³¹. The devastation to rivers and local groundwater from chemical liquid and solid waste is phenomenal. Banana production, due to its attendant high level of chemical residue had gross impact on the once vibrant wildlife that thrived around the waterways. Radical changes have occurred to the once burgeoning plant and animal biodiversity³².

Cotton: Our clothing's are made up mostly of cotton, wool and other equally important fibres. Most people do not take time to analyse the clothes on their back beyond being a fashion accessory, an image booster; or a necessity for keeping warm. The purchase of clothing is an expression of the individuals taste and freedom to display his social status and lifestyle of affluence. Farthest on people's minds is the issue of whether our clothings are produced in an environmentally sustainable manner. They are so carried away by all the glamour, and haste to catch up with the latest trend. This is especially as access to

²⁸Ibid. Coffee is the third most sprayed crop of pesticides internationally.

²⁹Gallagher, M., and C. Mcwhirter. "Chiquita Secrets Revealed" Cincinnati Enquirer., (May 3 1998).

³⁰Sierra, S., and L. Eduardo. *El Cultivo Del Banano: Production y comercio*. Medellin, Colombia: No Publisher Listed.

³¹Minerem (Ministerio de Recursos Naturales, Energi'a Minas) and Unio'n Mundial / para la Impacto Socioambiental de la Expansio'n Bananera en Saraapiqui. Tortuguero y Talamcaca, Costa Rica. (Preliminary technical report 1992), in Debra Davidson and Kiestin Hatt (Eds). *Consuming Sustainability.(Critical Social Analyses of Ecological Change)* (Fernwood Publishing, Halifax 2005). p. 76

³²Ibid. Minerem 1992, Hatt k. "Development Transnational Power and Environmental Degradation: A Case Study of Costa Rica's Banana Industry". Ph.D thesis McGill University, (Montreal, 2000).

individual points of production is almost non-existent. It therefore becomes difficult to draw a linkage between the final consumption and production. According to the World Watch Institute, worldwide growers of cotton apply almost \$3.5 billion worth of pesticides annually; more than 10 percent of the global total³³.

The real nature of the clothing we wear such as blue jeans trousers or shorts and T-Shirts is revealed in the makeup of the supporting areas of production. It may be insightful to disclose that about seven different types of pesticides are used during production. Also distressing is the disclosure that these pesticides are potential carcinogens³⁴. A natural inclination, given the vast area covered by cotton production is aerial spraying. This is also a great threat to the surrounding areas. Ecologists have found that cotton production harm wildlife and the biosphere. Herbicides are used to defoliate cotton for easy harvesting and this endangers wildlife habitats.

Animal Waste: Recent studies indicate that increased waste from animals over humans may be on the rise. Though many farm operations contain their waste, spills often occur. In North Carolina, a 25 million hog- waste spill killed 10 million fish and closed 364,000 acres of coastal wetlands to shell fishing in 1991³⁵. Apart from direct damage caused by spills, ammonia is produced from having large concentrates of animal waste. Dairy manure pollution in California is a significant cause of fishery depletion³⁶. Drinking water wells located in property close to hogs also had nitrate levels above current drinking water standards³⁷.

How Consumerism of Agricultural Products fuels Environmental Degradation

Paul C. Stern proposes that environmental consumption consists of human and human induced transformation of materials and energy, ...consumption is environmentally important to the extent that it makes materials or energy less available for future use, moves a biophysical system towards a different state or through its effects on those systems, threatens human health, welfare or other things people value³⁸. Consumerism has been fuelled by the growth of department stores and shopping malls. Most goods are now packaged for the purposes of display on shopping stands. This is especially processed agricultural products, like chocolates, sweet corn, peas, string beans, ketchup, and so on. The list is endless. So also is the ingenuity in packaging in tins, plastic containers, bottles. Our cotton shows up in

³³W.W Norton. World Watch Institute. *State of the World 2004. Special Focus: The Consumer Society*. (New York.)

³⁴Geller, Leah. "Pesticide Use Spawns Market for Organic Cotton." *Edmonton Journal* (March 2, 2004).

³⁵Ted Williams "Assembly Line Swine", *AUDUBON*, (Mar-Apr.1998). p.27

³⁶See Natural Resource Defence Council & Clean Water Network, *America's Animal Factories: How States Fail to Prevent Pollution from Livestock Waste* 26 (1998),p.15 Hereinafter known as American Animal Factories. Amature dairy cow produces as much waste as 34 people, or an average of 114 pounds of waste per day, or 22.5 tons of manure per year.

³⁷Ibid. *America's Animal Factories*. P.76

³⁸*Environmentally Significant Consumption*. 1997: 20 in Debra Davidson and Kieston Hatt eds. *Consuming Sustainability* op. cit.

form of clothing and sweaters from wool. The waste alone from packaging is so enormous. Generally, other activities that have also fuelled consumerism apart from shopping malls also include advertising, marketing and distribution of goods, consumer service and the availability of consumer credit. The idea is to mount enough pressure on products to fuel rapid economic growth. Most economic proponents agree that the first index of a progressive economy is manifested by ever increasing consumption of goods and services. According to Buchholz and Rosenthal, since 1950, humanity has consumed more resources than all the people who lived before them combined³⁹.

Engraving Agricultural Sustainability and Development

Determining Offences against the Environment: Aristotle, in his well quoted book *Nicomachean Ethics*⁴⁰, shows some exasperation with human conduct. The vast array of possible unconscionable behaviour of men meant that rules cannot possibly exist to deal with all areas of human behaviour. Because of the possible rigidity of the law in some areas, evolving areas like environmental law may have to shift ground to avoid crystallization of norms. While we agree that administration of justice ought to be based on universal principles⁴¹, from time to time, the changing nature of human values makes it expedient that such laws are either supplemented or reviewed, to suit current realities and circumstances. Farmers are seen as a special breed of people. In the developing world, they may be an endangered species. Therefore government legislation always seeks to favour them and give them a soft landing on so many fronts. Sometimes this attitude may have negative implications. The question is not whether protection is needed, but how far reaching such protection may be to avoid causing a crisis of sorts in a sector that has been adjudged to be the bedrock of modern society. J. B. Ruhls notes that:

*Farms are one of the last unchartered frontiers of environmental regulation in the United States. Despite the substantial environmental harm they cause – habitat loss and degradation, soil erosion and sedimentation, water resources depletion, soil and water salinization, agrochemical releases, animal waste, nonpoint source water pollution and air pollution; - environmental law has given them a virtual licence to do so*⁴².

It is expedient that we pause to reflect on why farmers that default on practising sustainable agriculture need to be cautioned. It can be said that the current system of environmental protection in place may be criticised for diminishing the reality of the constant danger that

³⁹ *Towards an ethics of consumption: Rethinking the nature of growth.* In L. Westra and P. Werhane (eds.) *The Business of Consumption: Environmental Ethics and the Global Economy.* (New York: Rowland and Littlefield 1998.).

⁴⁰ *Aristotles Ethics*, John Warrington's Translation, pp. 113-114

⁴¹ Cardozo, *The Nature of the Judicial Process*, p.112

⁴² J.B Ruhls. "Farms, Their Environmental Harms, and Environmental Law", 27 *Ecology L.Q.* 263 (200) in Susan A. Schneider *Food, Farming and Sustainability: Readings in Agricultural Law*, op.cit., p.119

the environment is in. Rather than welding the big stick, our environmental laws are pacifist in nature, in order to serve the interest of big corporations and groups whose activities by every holistic assessment have been seen to neglect conservation. The resultant effect is that the problems to the environment are magnified when the agencies in charge of rooting for their interests, turn around to clamp down on them. It is often difficult to determine offences against the environment. Obviously, an interdisciplinary and holistic approach is needed in order to effectively engage environmental offenders. The best way this may be achieved is to engage indigenous and traditional communities to wake up and be sensitive to the role they need to play as custodians of the environment⁴³.

There is also the need for policy makers to accord better recognition of indigenous people's rights⁴⁴. A nation's ability to manage and conserve sustainable use of the biodiversity is inseparably linked to the premium placed on the environment by successive governments through legislation. Agricultural activity no doubt is the bedrock of life. However given the long term negative effects, legislative reforms are needed to protect the biodiversity⁴⁵. We have already seen that environmental protection agencies are often times, in dire need to draw the line between their jobs, their personal aspirations, and the overwhelming real needs of the environment. Even though they are supposed to be instrumental to the immediate halt to environmental issues, they prefer to sit on the fence in blatant defiance of agreements in place between them and mega industrialists on one hand, and the populace on the other hand.

The World Bank: This Bank acts in a pre-empting role to preserve the environment. One of the ways it does this is through proper scrutiny of the loans that it gives out. The bank has gone a step further to seek detailed information on the proposals that come before it, especially from the developing countries. In that regard, those who approached the bank for funds from 1989 were specifically asked to prepare an Environmental Assessment (EA), or to document the possible effects of their activities on the environment. Thus projects requiring a full EA or environmental analyses totalled between 30 and 67 per cent of the total annual lending volume of the World Bank⁴⁶. Environmental Impact Assessment (EIA) has been generally defined to mean the examination analyses and assessment of planned actions with a view to ensuring environmentally sound and sustainable development⁴⁷. Statutorily, it is defined as an estimate or judgement of the significance and value of environmental effects for natural, socio economic and human receptors⁴⁸. EIA as

⁴³E. Laltaika, "Western Intellectual Property Rights, Regimes and Traditional Knowledge Protection Systems in Africa." in Oliver C. Ruppel and Katharina Rupel-Schilchting (Eds.) *Environmental Law and Policy in Namibia* at pp. 201-217

⁴⁴Ibid. at 216

⁴⁵S. Buthuene and O.C. Ruppel "Land and Agricultural Laws and Policies Relevant for Environmental Protection in Namibia" in *Environmental Law and Policy in Namibia* Ibid. at, pp .147, 150-152

⁴⁶World Bank. "Lessons from World Bank Experience" *Making Sustainable Commitment: An Environment Strategy for the World Bank*, p.17 [http://www.worldbank.org/environment/\(July 30, 2001\)](http://www.worldbank.org/environment/(July 30, 2001)) in Kubasek and Silvermen *Environmental Law* p.437

⁴⁷Decision 14/25 of the governing council of UNEP of 17 June, 1997 in Amokaye G. Oludayo. *Environmental Laws and Practice in Nigeria*, (University of Lagos Press, 2004.) p.540

⁴⁸The EIA Procedure 1985, (FEPA, Abuja, 1985)., in Amokaye G. Oludayo Ibid.

a tool for environmental management has been acknowledged as capable of compelling organizations to carefully review facts concerning their projects with a view to outlining mitigating measures to be adopted in the case of projects which are likely to have adverse environmental effects. EIA was specifically introduced into Nigeria via the guidelines on Nigeria's Fourth Development Plan (1981-1985) which requires that feasibility studies for all projects, both private and government shall be accompanied by an environmental impact assessment. The onus for the preparation of the EIA Report will be on the owners of the project⁴⁹.

The Precautionary Principle: Environmentalists who want to bring forward petitions have always faced the problem of the burden of proof. In tort law, the burden of proof lies on him who alleges⁵⁰. But tort law has proved defective in controlling the environment for the simple reason that there is a limit to possible interference in the productive activities of agricultural firms. Asking them to reduce the use of certain pesticides, fertilizers and other chemicals may lead to the production of defective crops. At all times therefore, there has to be a balance of the forces of production and the environment. This is because production and activity is always seen as the hallmark of development. However, given the wide range of apathy by monitoring agencies, enforcement by private individuals is often encouraged⁵¹.

At the extremity, Hodel, the American Interior Secretary had proposed that people should apply personal protection. He advocated extensive use of sunscreen, wide brimmed hats and sunglasses. The idea was highly ridiculed by the environmentalists, as obviously, plants and animals cannot wear sunglasses and sunscreen to get the necessary protection. But this incidence marked the turning point, which witnessed better connection to environmental issues. The US reached out to embassies, governments with countries in the EC, Federal Republic of Germany, Japan, and developing countries⁵².

The tables turned around. Rather than putting the onus of protection on the individual, corporate polluters were now to be in charge. This was made possible by the introduction of the 'Precautionary Principle.' The scope of the precautionary principle is that "...when an activity raises threats of harm to human health or the environment, even if some cause and effect relationship are not fully established scientifically. In this context, the proponent, rather than the public, should bear the burden of proof. The process of applying the precautionary principle must be open, informed and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action.

⁴⁹See Nigeria's 4th National Development Plan (Federal Government Press, 1981) F.S Ebisemijiu, "Environmental Impact Assessment: Making it Work in Developing Countries." *Journal of Environmental Management*, 247 (1993). in Amokaye G. oludayo Ibid., p.543

⁵⁰*Rylands v. Fletcher*(1866) L.R 1 Ex. 265.

⁵¹Doniger, David. D. "The Politics of the Ozone Layer", *Issues in Science and Technology* v.4(SPRING 1988)p.89

⁵²Benedick, Richard Eliot "Lessons from the Ozone Hole." World Resource Institute, ed. *Greenhouse Warming: Negotiating a Global Regime.*(Washington, DC:WR 1), 1991.

The Brundtland Commission

The WCED (Sometimes referred to as the Brundtland Commission) was created by the General Assembly of the UN in the fall of 1983 to formulate long term strategies to attain sustainable development by the year 2000 and beyond⁵³. The major accomplishment of WCED was the publication of *Our Common Future*. The report was based on data gathered from public hearing in a dozen cities around the world and information from several advisory panels⁵⁴. The report concludes that humanity has the ability to make development sustainable; to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs⁵⁵.

The Brundtland Commission is particular about meeting the needs of the present. However, the argument for sustainability is premised on the fact that future generations should be left with the ability to sustain themselves also. When we talk about sustainability, at the core of the debate is the conflict between the North and the South; between the rich Northern power blocks, and the relatively poorer Southern countries. In the South, ...the needs of current generations are not being met, and must therefore take priority. In the North, environmental organizations and other proponents of sustainable development tend to be occupied with future generations⁵⁶. The most common feature which environmentalists report to be the reason for unsustainable growth is adherence to fundamental principles of modernization. The issue of modernization has been conceived in terms of use of “energy and technology- intensive industrialization process⁵⁷.”

Basic modernization naturally entails “modern electricity delivery, water management and road networks. Besides, increased participation in the global economic market is seen as a measure of intrinsic development. We therefore see that while the South is struggling to come to terms with meeting current needs, the North is on a path to infinite growth. This trend better serves the political and economic power -wielders who benefit from capitalist expansion⁵⁸. In order to further promote sustainability in the agricultural sector, we need to deviate from the notion that natural resources are finite. Modern methods of farming especially in the north should acknowledge that these resources are delicately interwoven with the ecological systems, and any damage to the ecological system may be irreparable in the short term.

Energy Output: Another issue is that over consumption and reproduction has to be looked into. There is need to convince the countries of the North to lower production levels. This will in turn lower material and energy output, and the degenerating impact on the land and ecosystem. According to Henton, in Alberta, for example, 78% of water is

⁵³Nancy k. Kubasek and Gary S. Silverman. *Environmental Law* op.cit.

⁵⁴Ibid.p.436.

⁵⁵World Commission on Environment and Development.1987. *Our Common Future*.(New York: Oxford University Press) in Nancy K. Kubasek and Gary S. Silverman, *ibid*.p.436

⁵⁶Debra Davidson, Kiestin Hatt Eds. *Consuming Sustainability*, op.cit. p.11

⁵⁷Ibid. p.12

⁵⁸Ibid.

used by industry and agriculture⁵⁹. When we look at the sustainability challenge, from the point of view of consumption, we can consider the core issues of sustainable development: How big is the economy in relation to the biospheres' regenerative capacity- the question of scale – and who gets what and at what cost- the question of distribution⁶⁰. The ways in which damage to the soil may be reduced include reducing tilling and making provision for structures that hold down the soil. Women also have to be recognised as power houses of sustainable agricultural practices⁶¹. This is through the re-introduction of traditional methods of soil conservation that have been abandoned when former colonial masters jettisoned their use, and introduced fertilizers. Shimwaayi Muntemba, the Executive Director of the Environment Liaison Centre (ELC) in Nairobi, Kenya endorses the legitimizing of women's knowledge⁶². She reiterated that “now, there is an actual appreciation of the fact that women's economic and agricultural activities are located within the context of environmental sustainability⁶³”.

Generally, other steps to develop drought resistance sustainable agricultural methods should also be employed. Gregory Cajete believes that bugs are beneficial to plant life. Therefore, the damage to them by use of pesticides should be minimal. However, we already note that the use of pesticides is a great element in growing of coffee, banana and cotton. Instead, the system of crop rotation should be employed. In this instance, predatory birds will automatically reduce the number of bugs in a fallow field to a level where they no longer constitute a threat to crops grown. It has been scientifically proven that pests often go for the weaker crops. Thus if mixed cropping is employed, the insects are more likely to prey on the less resistant crops, and thereby leave the cash crops intact. This will reduce the havocs caused by the use of excessive pesticides to control the insects⁶⁴. There is need for plant genetic biodiversity. It has been estimated by the Food and Agricultural Organization (FAO), that a vast amount of natural plant resources may be on their way to being extinct.

⁵⁹Henton Darcy. “Concerns Over Water Resources Rising: Province Consulting Albertans on Issues”. *Edmonton Journal*, April 22 2002: A7

⁶⁰Wackernagel, M, D.Deumling, C. Monfreda A. Linares, I. Lopez Falfan and M.Sanchez. “Ecological Footprints of Nation: December 2001 update. Oakloma CA: Redefining in Progress. Retrieved from www.redefining_in_progress.org/publications/1997-efoot.pdf in Debra Davidson and Kierston Hatt, Eds. *Consuming Sustainability*. Op.cit. p.41

⁶¹Dianne Draper and Maureen Reed op.cit. p.210. Sources: Agenda 21 Greens Parks to the Future, International Development Research Centre (IDRC), 1993, Ottawa: Author,p.29 Reprinted by kind permission; *UNEP Programme on Success Stories in Land Degradation/Desertification Control*, United Nations Investment Programme/International Fund for Agricultural Development, (n.d), <http://www.unep.org/unep/envppo/imp/techcorp/.htm>; *The Zabre' Women's Agro – Ecological Project in Burkina Faso*, United Nations Environment Programme, 1998.

⁶²Id. She coordinated the research of the Brundtland Commission on food security, agriculture, environment and women. She works with WEDNET, a multinational and multi- disciplinary project in women and natural resource management in Africa.

⁶³Dianne Draper and Maureen Reed Ibid., p. 210 The United Nations Environment Programme (UNEP) now has documented hundreds of successful attempts at controlling and remediating desertified and degraded dry lands. Descriptions of African success stories such as the Zabre' women's agro-ecological project in Burkina Faso are published by The United Nations Environment Programme/ International Fund for Agricultural Development.

⁶⁴*A People's Ecology*: Op.cit.

Although about seven thousand species of plants have been cultivated or collected in history, only about 30 crops provide about 95% of human energy needs. Even out of these 30, wheat, corn, rice, maize and potatoes seem to be a model crop for most nations⁶⁵. There is need for sustaining livelihood of farmers that help to ensure agricultural biodiversity⁶⁶. It may therefore be necessary to give farmers the necessary support to continue in agricultural biodiversity. This is to ensure their continued economic viability as it may not be profitable for them to continue to grow relatively unknown and unpopular crops. A time lag is needed for these crops to become popular with consumers. The government through our health institutions have a role to play in furnishing intermittent reports over the mass media on the health benefits of these nouveau rich food crops. Water, to the surprise of people, is a renewable resource. This can be achieved through improving water conservation and storage. The use of irrigation systems can be reduced. Water can be saved by managing crops to reduce water loss by selecting drought tolerant crops⁶⁷.

The Role of Individuals in Aiding Sustainable Agricultural Practices

The individual can do a lot. It may be necessary to join co-ordinated efforts of other people as a volunteer. Everyone has an important role to play in fostering global sustainability. This is because of the high level of scepticism that follows organised regulation. What is needed most is provision of opportunities for people to play their role in the environment, not as decision makers, but by actively working to increase the capacity of renewal resources to support present and future generations. Canadian's Minister of Environment, David Anderson⁶⁸ stated that:

Our past experience has demonstrated that successful environmental management depends on our ability to fully engage individuals and communities in defining the problems, finding the solutions and taking action to improve the quality of our environment. In the end, whether the source of a problem is in our backyard or on the other side of the globe- the problem becomes a local one. As such, individuals and communities must do their part, and government and others must support their efforts to do so.

One of the ways that this can be done is through the community garden movement.

⁶⁵FAO, Natural Resource and the Environment: Issues in the Spotlight, July 2011, online at <http://www.fao.org/docrep/014/am718eOO.pdf>, in *NIAL Journal of Environmental Law* p.35 "Environmental Sustainability, Intellectual Property and socio-economic Development in Africa: What Role for Geographic Indications?" "The FOA Conference via Resolution 3/2001 of November 2001, adopted the International Treaty on Plant Genetic Resources for Food and Agriculture in 2001. The treaty came into effect on 29th June, 2001. Its objectives were conservation and sustainable use of plant genetic resources for food and agriculture, farms and equitable sharing of benefits derived from their use, and the protection of the TK related to plant genetic resources for food and agriculture. (Article 1 of the Treaty) p. 40

⁶⁶See Coina Steward, "Biodiversity in Business." 2010 (Secretariat of the CBD), p. 8 online at <http://www.cbd-int/doc/newsletter/news-biz-2010-05-en.pdf>, in *NIALS Journal of Environmental Law*, op.cit. p.34

⁶⁷Wikipedia What is Sustainable Agriculture? AsI" Sarep.ucdavis.edu Retrieved 2013-09-10

⁶⁸In Dianne Draper and Maureen Reed op.cit. p.543.

Community Gardens promote ecological and social sustainability as citizens work together to promote healthy safe and abundant food for themselves and others. They also provide cultural understanding as groups from different cultural backgrounds share seeds, gardening tips, recipes and a love of the outdoors in the city⁶⁹. The role of education is also highlighted. To fully become stewards of the planet, “State-of-the environment reports (from provinces, municipalities, corporations and other bodies), environmental modules in school curricula, and other educational materials help ensure that future decision makers will be better informed about potential consequences of actions than were their predecessors. The people have to be educated as the opportunities to contribute to sustainability arise. One person who has contributed immensely to this growing trend is designer Wendy Brawar, who designed the Green Maps. The essence of the maps is to denote everything from wetlands and bamboo forests to solar energy sites and sunset watching spots. The icons also identify waste dumps, oil spills, and other blight sites to alert visitors to dangers and spur locals to take action⁷⁰. Maniates sees environmental degradation as the product of individual shortcomings⁷¹. What he actually means is that individuals have a responsibility to positively affect the environment, by making little changes in their consumption patterns and mannerisms. Agriculture to the people of Pueblo, New Mexico is more like “agri-culture”⁷². To them it is a way of life. It is more like the nexus of human interconnection with the land, which in turn yields its blessing of good such as corn, beans seed, rain and the mystery of tapestry of sacred relationships that sustain human beings⁷³. Individuals, through conscious effort, can contribute to reduced consumerism. The idea is to be a conscious consumer and think about what your needs are and how your needs can be filled in other ways. It is important to recognise that with every purchase, you may be actively encouraging those farmers or growers who do not heed responsible business ethics⁷⁴. Finally, when you do consume, take only what you need, use it until it is no longer usable. The better option is to repair rather than replace. Also refashion, to provide variety⁷⁵.

We have already seen that the question of over consumption in the rich countries of the North, coupled with on-going capitalism causes acute loss in the world strata since they assert excessive strain on the regenerative capacity of the ecosystem. This imbalance highlights global conditions of inequality and ecological devastation. In the poorer South, consumption is linked to food and household items, while in the North; consumption is invariably linked to energy consumption. The individual, depending on his location, has a responsibility to imbibe the tenets of recycling and reuse. It is now a policy as specified by the Toronto environmental Alliance website that containers should be re-usable.

⁶⁹Ibid.,p.542

⁷⁰House Beautiful, volume 139, Number 8 August 1997. “Green Maaps” by Susan Kleinman p.50

⁷¹Maniates, M. “Individualization: Plant a tree, Buy a Bike, Save the World?” in T .Princern, M. Mniates and Ken Conca (eds.) *Confronting Consumption* Cambridge, MA: MIT Press. 2002

⁷²Gregory Cajete *A People's Ecology* op.cit. p.59.

⁷³Ibid. p.59

⁷⁴Debra Davidson, Kiestin Hatt (eds). *Consuming Sustainability* op.cit.p.45-46

⁷⁵ “Cleaning the Closet: Towards a New Fashion Ethic” In J.Schor and B. Taylor (eds.), *Sustainable Planet: Solutions for the 21st Century*. (Boston: Beacon Press. 2002)

CONCLUSION

It pays to invest in agriculture. However, the environment should be better off for it as well. We need to invest in, and support small farmers as they are the custodians of traditional modes of farming with regards to soil conservation, irrigation, crop multiplication and production, which ensure minimal damage to the environment. As for the bigger farmers who use highly industrialized methods, they need to embrace continuous research and technology, where available to combat soil erosion. Use of pesticides can also be dramatically reduced by working more closely with the land to ensure that all elements in the biodiversity play their designated roles. In general, sustainable agriculture addresses the ecological, economic and social aspects of agriculture. To be sustainable, agriculture can only operate when the environment, its caretakers and surrounding communities are healthy⁷⁶. Also, professor emeritus John Ikerd of the University of Missouri states that an agriculture that isn't profitable, at least over time will not allow its farmers to stay in business. It is not sustainable⁷⁷. According to Aldo Leopold, whom the Leopold Centre is named after, "A land ethic changes the role of Homo sapiens from conqueror of the land –community to plain member and citizen of it. It implies respect for his fellow members and also respect for the community as such⁷⁸. Finally, it is important to point out that reaching towards the goal of sustainable agriculture is the responsibility of all participants in the system, including farmers, labourers, policy makers, researchers, retailers and consumers. Each group has its own role to play, its own unique contribution to make to strengthen the sustainable agriculture community⁷⁹.

⁷⁶Iowa State University, Leopold Center for Sustainable Agriculture. http://www.leopold.iastate.edu/about/sustainable_agriculture, accessed on 5/3/14

⁷⁷Ibid.

⁷⁸Aldo Leopold, Ibid.

⁷⁹Gail Freentra "What is sustainable Agriculture?" ASI Agricultural Sustainable Institute at UCDAVIS www.sarep.ucdavis.edu/about-sarep/def accessed on 5/3/14