

**AN ANALYSIS OF NIGERIA'S DOMESTIC APPLICATION OF
THE CONVENTION ON BIOLOGICAL DIVERSITY**

By

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DECLARATION

- I Gbemisola Olumuyiwa Fatokun, declare that:
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As the candidate's supervisor, I, Michael Kidd, agree to the submission of this dissertation.

Signature.....

Date.....

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ABSTRACT

While biodiversity has played a major role in sustaining human existence on earth, the world has witnessed the decline of these biological resources over the last century, with several species of flora and fauna being driven into extinction while others are either endangered or vulnerable. The international community, through the platform of the United Nations, convened the Earth Summit in Rio de Janeiro, Brazil, in 1992 to address the numerous challenges faced by the environment, including biodiversity loss. During the summit, the Convention on Biological Diversity was one of the international instruments opened for signature. The Convention was signed by Nigeria and subsequently ratified in 1994. However, to date, Nigeria has not domesticated the Convention into its laws.

In order to determine to what extent the Convention is being implemented in Nigeria, this study examines the activities of the authorities which conform to the strategies incorporated in the articles of the Convention.

While the analysis shows that Nigeria has taken some actions which substantially comply with some of the provisions of the Convention, it demonstrates that it has failed to repeat this in relation to other provisions. The findings also show that in instances where there is compliance, for example through the promulgation of policies and establishment of facilities for conservation, fundamental problems such as lack of proper enforcement and poor management culture are still evident. This study makes valuable recommendations for improving Nigeria's compliance with the objectives of the Convention, by identifying biodiversity conservation activities taking place in other jurisdictions, especially South Africa.

CHAPTER 1

1.1 Introduction

The Judeo-Christian religious faith, according to their holy book (The Bible), states that, at creation, God made the vegetation, seed-bearing plants, fruit trees bearing fruit with seeds (agro-biodiversity), then the living creatures in the waters (marine biodiversity) and the birds of the air. Thereafter came the creatures living on the land (wildlife biodiversity). Man was formed after all these creatures had already been in existence.¹

Despite being the last in the sequence of creation, man was given dominion over all other creatures of the earth, to use² for his nourishment, sustenance and enjoyment. In complying with this supernatural injunction, man has, over the generation, used, abused, overused and over-exploited these natural endowments in a carefree, lackadaisical and unsustainable manner, to the extent that some of them have gone into extinction, while others are under severe threat of extinction.³

Now faced with the glaring adverse effects of the decline of these biological resources and other environmental challenges, and coupled with the catastrophic consequences on the environment and the ecosystem structure, the international community, through the United Nations, facilitated the process of convening the Earth Summit in Rio de Janeiro, Brazil, in 1992, to address various threats to the human environment these included the upsurge in the rate of biodiversity loss, among other environmental issues addressed at the summit.⁴ Among the documents which were available for signature by parties during the summit was the Convention on Biological Diversity (CBD). The CBD is the first comprehensive multilateral environmental agreement containing

¹ Genesis chapter 1 - *Christian community Bible* thirty fourth edition

² Genesis chapter 1 verse 29 & 30 where God said “I have given you every seed bearing plants which is on the face of the all the earth and every tree that bears fruit with seed. It will be for your food” verse 30 “to every wild animal, to every birds of the sky, to everything that creeps along the ground, to everything that has the breath of life, I give every green plant for food”

³ O. F Oluduro & G. N Gasu ‘A Critical Appraisal of the Legal Regime for Biodiversity Conservation in Nigeria’ (2012) *Journal of Sustainable Development* Vol. 8, No. 4, pp. 249-257 at 250.

⁴ UN conference on environment and development 1992 at <http://www.un.org/geninfo/bp/enviro.html> (accessed on 27/11/2013)

measures for biodiversity conservation.⁵ It contains 42 articles which comprise inter alia, strategies for conservation and sustainable use of biodiversity, obligations of developed countries towards the developing countries in order to protect biodiversity in addition to countries' administrative obligations.

Nigeria, as a member of the United Nations, attended and signed the CBD during the summit (on 13 June 1992) and subsequently ratified it in 1994. The country is a hot bed of biodiversity, containing very rare species of plants, with high medicinal value, and unique species of animals which are endemic to it.⁶ The Niger Delta region of the country has been described as the second largest wetland in the world, with mangrove swamps and fertile alluvial plains, and is also home to the gorilla *Gorilla diehli*, which is endemic to Nigeria and Cameroon, and has been described as the most endangered gorilla specie in the world.⁷

Nigeria is a developing country, with industrialization and economic activities taking place within it. It is also the most populous country on the African continent, with an estimated population of over 166 million people and an average population growth rate of 3% per annum. The combination of all these factors, coupled with others such as the high poverty rate, oil exploration activities and unsustainable agricultural practices, has put serious strain on the country's biological resources.

The increase in reported cases of desertification, which is ravaging the northern part of the country, as well as the surge in the sea level, which is responsible for flooding in the southern part of the country, are all traceable consequences of economic development and this has resulted in biological diversity loss.⁸ In addition, the depletion of the rain forest of the country, due to illegal logging activities, has led to the flight of most of the country's wildlife to neighbouring countries.⁹

⁵ The convention was opened for signature on the 5th of June 1992

⁶ M. Idu 'The plant called medicine'. 104th Inaugural lecture series of the University of Benin at 12.

⁷ B. Sidhu 'Gorillas and their habitats – a legal review' (2010) *Environmental policy and law*, 40/6 at 337.

⁸ Oluduro et al (N 3 above) at 249

⁹ Ibid at 251.

In response to the growing rate of biological diversity loss within the country, the government, in addition to ratifying the CBD, has taken other measures such as the enactment of laws and drafting of policies as well as setting up institutions and agencies in an attempt to address issues of biodiversity loss and to ensure their conservation and sustainable use. These activities will be examined in this dissertation in order to determine the extent of the domestic implementation of the CBD by Nigeria.

1.2 Aims and goals of the study

In broad terms, the intended goal of this research is to determine how effectively Nigeria has been able to ensure domestic implementation of the CBD and by implication, the effect of compliance with its objectives through the provisions of its articles. This is due to the fact that the CBD has not yet been domesticated¹⁰ by the country into its national law.¹¹ This exploration will be accomplished by identifying the available biodiversity related laws or regulations which the country has, over the years, enacted and applied in order to enforce the provisions of the CBD.

While the dissertation considers the CBD as a whole, particular focus will be given to Articles 8, 9, 10, and 15, which form the essence of its primary objectives namely, the conservation of biological diversity, the sustainable use of their components and equitable and fair access to the benefits of their genetic resources¹² Other articles which will be considered in this dissertation include 11, which provides for the introduction of additional incentives to encourage biodiversity conservation and 14, which requires the introduction of measures to assess environmental impacts and minimise adverse effects of projects on biodiversity.

Most of the other Articles left out of the discussion are either introductory (for example, Articles 1, 2, 3, 4 and 5), or specifically address the responsibilities of the developed countries towards the developing countries, or are administrative or similar provisions. For example activities

¹⁰ Domestication here means that the Convention has not been adapted into Nigerian law. See further ‘the status of international conventions in Nigeria at pg. 41 of this dissertation.

¹¹ The Convention for Biological Diversity has not been domesticated into the national laws of Nigeria despite the fact that the country participated in the Earth Summit and signed and subsequently ratified the Convention.

¹² See the objectives of the Convention for Biological Diversity in article 3.

contained in Articles 12 (research and training) 17 (exchange of information), 20 (financial resources), 21 (financial mechanism), 22 (relationship with other international conventions) and 23 (conference of parties) are all primarily directed at developed countries while considering the interest of developing countries. The focus of the dissertation is thus on the implementation in Nigeria of the *substantive* responsibilities of the parties to the CBD.

1.3 Reasons for the South African comparison

South Africa, like Nigeria, is a country on the African continent. It is located on the southern tip, while Nigeria is situated in the western regional axis of the continent. It is rich in biodiversity, as is Nigeria. In fact, South Africa has been described as the third most biologically diverse country in the world. Moreover, both are developing countries, faced with high levels of industrialisation and economic expansion, as well as increasing rates of poverty, which they have equally identified as being a major threat to their biodiversity.¹³

Both countries have ratified several biodiversity conservation treaties and conventions, including the CBD, which is being reviewed in this dissertation. The fact that South Africa has domesticated the Convention into its national laws through the National Environmental Management: Biodiversity Act, while Nigeria has not, makes it more instructive for comparison, by reviewing the activities of both countries directed at ensuring the conservation of biodiversity and sustainable use of its components, in discharge of their responsibilities to the Convention.

1.4 Research question

The research question of this work will revolve around the articles mentioned earlier. They are the major Articles which focus on the overall substantive objectives of the Convention, which are conservation and sustainable use of biodiversity, as well as access to their genetic resources (Articles 8, 9, 10 and 15) and other important Articles mentioned earlier (11, 13, 14), which are considered fundamental to achieving the overall objectives of the Convention. Therefore the research question would involve the domestic implementation in Nigeria of Articles 8, 9, 10, 11, 13, 14 and 15 and, more specifically:

¹³ South Africa's National Biodiversity Strategy and Action Plan 2005 at 7, 9, and 15.

- Are there facilities and mechanisms for an *in situ* and *ex situ* conservation approach of the convention (Articles 8 and 9)?
- Are there procedures and regulations towards ensuring the sustainable use of these resources (Article 10)?
- Are there economically and socially sound incentives in place towards ensuring the conservation and sustainable use of biodiversity (Article 11)?
- Are there procedures for determining the adverse effects of projects on biological diversity and the environment (Article 14)?
- Are there mechanisms and structures to guarantee fair access to the genetic resources and biological resources of the biological diversity as well as the equitable sharing of the benefits which accrue from it (Article 15)?

1.5 Research methodology

Guidelines and programmes for the conservation of biodiversity and its sustainable use in Nigeria are not contained in a specific legislation or document. They are scattered in bits and pieces in different government policy documents and programmes, as well as in different legislative enactments covering the various aspects of the country. These range from policies on economic development to environmental protection. This plethora of instruments for biodiversity conservation in the country makes the analysis of Nigeria's implementation a challenging task.

In order to find a way around this hurdle, recourse will be made to every relevant and available material, which includes the national legislative framework and statutes of the Nigerian government, as well as various policy documents. These address broad environmental challenges facing the country and specific programmes towards ensuring biodiversity conservation and its sustainable use. The biodiversity conservation programmes in these instruments will be the focus of this dissertation. In addition to this, the various national and country reports submitted to international bodies such as the World Bank, the United Nations, Convention on Biological Diversity, Food and Agriculture Organization (FAO) and the International Union for the Conservation of Nature (IUCN) will be consulted in this research. Other sources of information will be books, academic journals, articles and reliable Nigerian national daily newspapers. Internet sources will include the official webpages of international conventions and

organisations, as well as the home pages of Nigerian government ministries, institutions and agencies.

1.6 Structure of the dissertation

This dissertation is divided into six chapters, with the first chapter giving an introduction into the subject matter of the dissertation and its chapter layout. The second chapter starts by giving a description of what biodiversity is. In addition to the definition, detailed information on the current status of the world's biological diversity, its importance to the human environment, the extent of its degradation and international efforts towards its conservation and sustainable use are discussed.

The third chapter gives an overview of Nigeria and its biodiversity. The traditional approach towards natural resource conservation in the contemporary Nigerian society will be discussed briefly. The chapter discusses the factors affecting biodiversity in the country and the role of Nigeria in the international community in relation to biodiversity conservation conventions most especially the CBD and other conventions are also discussed here. The chapter concludes with brief details on the various national laws put in place within the country to ensure the conservation of biodiversity.

The fourth chapter, which constitutes the heart of this research, discusses the implementation of the Convention by the Nigerian authorities. The various duties and responsibilities provided for by the articles of the CBD are placed side by side with the activities of the Nigerian government, as parameters to determine the extent of compliance with the objectives of the Convention in the country. Activities in other jurisdictions, for example South Africa (which has domesticated the convention) would be examined in this chapter to determine if there are lessons to be learnt from different countries by others. The curtain will be drawn on this research in the fifth chapter, which will sum up the dissertation and make recommendations on how to improve the present level of compliance with the convention in Nigeria, taking a cue from the attitude and approaches adopted by South Africa and other countries.

CHAPTER 2

2.1 Man and the earth

The earth is the only planet in the universe with a history of the origin and evolution of living forms;¹⁴ it is blessed with various classes and species of life and living creatures. This makes it distinct and unique among all the other planets. The duty to ensure the continual existence of the planet and the life forms placed on it falls into the hands of mankind. Human beings are expected to prudently manage these resources, bearing in mind that they are subject to irreversible decline and that there are limitations to the carrying capacity of the ecosystem.¹⁵

2.2 Conservation and sustainable use

Conservation is a problematic word to define, as it is capable of provoking a variety of interpretations. Other words, such as ‘preservation’, ‘protection’, ‘restoration’, ‘improvement’, ‘prevention’, having different meanings and definitions, are all terms which have been associated with conservation.¹⁶ The International Union of Conservation of Nature (IUCN) covers many of these ideas when it defines conservation in the World Strategy for Conservation¹⁷:

“The management of human use of the biosphere, so that it may yield the greatest sustainable benefits, while maintaining its potential to meet the needs and aspirations of future generations”.

The phrase ‘sustainable use’ elicits different interpretations. For example the Oxford Dictionary defines the phrase as ‘being able to maintain at a certain level or rate, or uphold and defend’.¹⁸ The Convention on Biological Diversity, in its guidelines towards ensuring the sustainable use of

¹⁴ A. Ghosh ‘Convention on Biological Diversity: A comparative analysis’ CUTS Centre for International Trade, Economics and Environment No 7/2003 at <http://www.cuts-international.org/pdf/Biological-diversity-7-03.pdf> (accessed on 1/11/2012).

¹⁵ R. D. Schwass ‘Introduction to Sustainable Development’. world conservation strategy of the International Union for the Conservation of Nature and Natural Resources. Encyclopedia of Life Support Systems at 5 at <http://www.eolss.net/Sample-Chapters/C13/E1-45-02-05.pdf> (accessed on 10/10/2013).

¹⁶ See oxford dictionary at <http://oxforddictionaries.com/definition/english/conservation> (accessed on 24/6/2013).

¹⁷ IUCN ‘Right-Based Approach to Conservation’ available online at <http://community.iucn.org/rba1/pages/conservation.aspx> (accessed on 21/9/2013) See also Living Resource conservation for sustainable development at <http://data.iucn.org/dbtw-wpd/html/WCS-004/section6.html> (accessed on 21/9/2013). See also Oluduro *et al* (N 3 above) at 251.

¹⁸ Oxford Dictionary (n 16 above).

biodiversity, described sustainable use as “use that won’t lead to long-term decline,”¹⁹ that is, “it should be used in a manner in which ecological processes, species genetic variability remains above threshold needed for long-term viability.”²⁰ According to the guideline, sustainable use of biodiversity has the capacity to promote conservation and also plays a part in alleviating poverty.²¹

These definitions reveal that there is a very strong connecting thread between the terms ‘conservation’ and ‘sustainable use’. A comparison between these concepts reveals little or no difference, as both have adopted a long-term projection approach to the use of biodiversity.²² Both terms are adopted in environmental law due to realisation of the fact that these resources are not inexhaustible. This underlines the objectives of the CBD. It advocates for the conservation of these resources through the establishment of protected areas, where necessary, while encouraging a rational and prudent approach in their usage.²³

2.3 The meaning of biological diversity

The phrase ‘biological diversity’ is derived from the combination of two root words, ‘biology’ and ‘diversity’. An all-encompassing definition of the concept is difficult to arrive at, as it has been used both broadly and narrowly, and generally in a vague and ill-defined manner, thereby making it difficult to arrive at a precise and universally accepted definition. Various scholars and scientists have given different definitions, often only to suit the purpose for which they are required at any one time. All these definitions may be very close, as they all refer to various categories of life and living forms. One such definition is the “variation of life at all levels of biological organization”.²⁴ According to de Chazournes:²⁵

“It is the infinite variety of life forms; genetic diversity – variation of genes within individual species, species diversity – variety of species in flora and fauna, and ecosystem diversity – variety of ecosystems, such as rainforests, coral reefs and deserts, that exist on our planet”.

¹⁹ Addis Ababa Principles and Guidelines for the Sustainable use of Biodiversity at 4 at <http://www.cites.org/eng/res/13/addis-gdl-en.pdf> (accessed on 03/12/2013).

²⁰ Ibid at 6.

²¹ IUCN (n 17 above).

²² Both conservation and sustainable use tries to address issues relating to future consequences of biodiversity loss, and its likely effects on present and future generations.

²³ See the objectives of the Convention in article 3 of the CBD.

²⁴ K. J. Gaston & J.I. Spicer ‘Biodiversity: An introduction’ Blackwell Publishing. 2nd Ed 2004.

²⁵ L. B. de Chazournes ‘Convention for Biological Diversity and its protocol on biosafety’ at http://untreaty.un.org/cod/avl/pdf/ha/cpbcbd/cpbcbd_e.pdf (accessed on 16/10/2012).

The Convention on Biological Diversity²⁶ (CBD) describes biological diversity as:

“the variability among living organisms from all sources including *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species and of ecosystems”.²⁷

In order to arrive at a simple definition for the phrase, most especially with reference to the various descriptions given above, it would be logical to join the word “biology”, which means the study of living organisms,²⁸ with “diversity”, which means varieties. Therefore a combination of these two describes biological diversity as the study of life and living organisms in their different forms. These forms have been categorised into genetic, species and ecosystem variations, according to the CBD.

The phrase biological diversity has been in existence since the nineteenth century and is still being widely used.²⁹ It is, however, believed that the new word “biodiversity”, which is derived from the same phrase, was first used in 1985 by W. G. Rosen, while preparing for the National Forum on Biological Diversity organized by the National Research Council (NRC) in 1986. The word was used in text for the first time by E.O. Wilson, an entomologist, as the title of the proceedings of the same forum.³⁰

2.4 Importance of biological diversity

Biodiversity has been described as the basic structure upon which human existence is built, hence the need to ensure its conservation, preservation and sustainable use.³¹ The role it plays towards the survival and sustenance of human beings can be summarised into two broad

²⁶ The Convention on Biological Diversity 1992.

²⁷ Ibid article 2.

²⁸ Collins English dictionary third edition at 157 defines biology as “the study of living organisms including their structures, functioning, evolution, distribution and interrelationships”.

²⁹ R. K. Colwell ‘Biodiversity: Concepts, Patterns, and Measurement’ at http://press.princeton.edu/chapters/s3_8879.pdf (accessed on 04/02/2013).

³⁰ Citizendium *Biodiversity* at <http://en.citizendium.org/wiki/Biodiversity> (accessed on 31/1/2013).

³¹ United Nations University Institute of Advanced Studies ‘The Convention on Biological Diversity: Understanding and Influencing the Process - A Guide to Understanding and Participating Effectively in the Ninth Conference of the Parties to the Convention on Biological Diversity (COP-9)’, *may 2008* at http://www.ias.unu.edu/resource_centre/The%20Convention%20on%20Biological%20Diversity_Understanding%20and%20Influencing%20the%20Process.pdf (accessed on 10/10/2012).

categories, namely ecosystem service, and social benefits services.³² In respect of its ecosystem services, it has been discovered that there are certain biological processes which are affected whenever there is a change in, or disruption of, biological diversity. Some of the processes include seed dispersal, pollination, carbon sequestration and climate regulation.³³ Other ecosystem services carried out by biodiversity include the maintenance of the chemical balance of the earth, protection of the soil structures from erosion and aiding of their renewal process,³⁴ filtration and purification of rivers and lakes and decomposition of organic and inorganic wastes.³⁵

It also helps to protect the earth from nature's catastrophic incidences such as climate change.³⁶ For instance, it has been discovered in recent times that the world's temperature has increased as a result of the constant emission of carbon dioxide and other greenhouse gases (GHG) into the atmosphere. It is also a general scientific knowledge that plants take in carbon dioxide, photosynthesis it into carbohydrates, and release oxygen into the atmosphere. Plants thus utilize carbon dioxide, reducing the amount that goes into the atmosphere.³⁷

³² These contributions can also be further subdivided into both direct and indirect benefits, with the direct being their functional values to human beings, while it indirectly sustains the environment in which man lives see G. C. Akani 'Management (for biodiversity) of savannahs and other open habitats' *Biodiversity conservation and habitat management journal* vol 1. See also C. P. Giri, S. Shrestha, T W. Foresman & A. Singh 'Global biodiversity data and information' at <http://www.unescap.org/stat/envstat/stwes-26.pdf> (accessed on 12/ 12/ 2012).

³³ S. Diaz, D. Tilman, J. Fargione 'Biodiversity regulation of ecosystem services' (in) Hassan R, Scholes R, Ash N, (Ed). *Ecosystems and human well-being - Current state and trends - Millennium Ecosystem Assessment*; pp. 297-329. at 299.

³⁴ It has been reported that soil organisms, in the course of regulating the soil ecosystem, perform functions which includes decomposing and cycling nutrients, converting atmospheric nitrogen into organic forms, suppressing soil-borne pathogens, interacting directly with plants through mutualism, commensalism, competition and pathogenesis. See M. A. Altieri 'The ecological role of biodiversity in agro-ecosystem' (1999) *ELSEVIER journals of Agriculture, Ecosystem and Environment* 74 19-31 at 26. See also T. Vold & D.A. Buffett (Eds.). 2008. 'Ecological Concepts, Principles and Applications to Conservation, BC'. 36 pp at 3 at: <http://www.biodiversitybc.org/assets/pressReleases/BBCPrinciplesWEB.pdf> (accessed on 21/6/2013).

³⁵ The Economic and Social Aspects of Biodiversity. Benefits and cost of biodiversity in Ireland at 5 at www.cbd.int/doc/case-studies/inc/cs-inc-ireland-en.pdf (accessed on 24/9/2013).

³⁶ T. I. Borokini, A. U.Okere, A. O. Giwa, B. O. Daramola and W. T. Odofin 'Biodiversity and conservation of plants genetic resources in fields gene bank of the national center for genetic resources and biotechnology, Ibadan, Nigeria' (march 2010) *International Journal of Biodiversity and Conservation* vol. 2(3) pp. 037 – 050. See also D.U. Hooper, F.S.Chaplin, J.J. Ewel, A. Hector, P. Inchausti, S. Lawton, D. M. Lodge, M. Loreau, S. Naeem, B. Schmid, H Setälä, A. J. Symstad, J. Vandermeer, & D.A. Wardle 'Effects of biodiversity on eco-system functioning: a consensus of current knowledge' (February 2005) *Ecological Society of America Journal* volume 75 issue .

³⁷ A.O. Aweto 'Plantation Forestry and Forest Conservation in Nigeria' (1990) *The environmentalists* Volume 10, Number 2 at 132.

From the social perspective, the business of biodiversity has created employment opportunities for a sizeable proportion of the world's population.³⁸ An estimated 927 million, or 35% of the jobs created in the developing countries, as well as 14.6 million or 7 % in the European Union, have either a direct or indirect relation to biodiversity.³⁹ It has generated huge economic and financial returns for various countries through the creation of tourism and other recreational facilities as well as the provision of raw materials for their industries.⁴⁰ According to a UNEP report, the total value of world trade in natural resources in 2008 was estimated at about US\$3700 million, almost equalling a total of 24% of the world's merchandise trade.⁴¹

Plants and animals have also served as sources of food and medication. For example, human beings derive nutrients and vitamins, such as protein, from the consumption of animal meat and dairy products. More than 120 chemical substances, which are obtained from around 90 different plant species are processed into drugs and medication, all over the world.⁴² This is because most of these substances cannot be synthetically produced.⁴³

Apart from the conservation of biodiversity for the purpose of the benefits and advantages derived from them by human beings, it is a moral duty and obligation,⁴⁴ as well as humankind's way of reciprocating these gestures, that they play their own part in their conservation and sustainable use,⁴⁵ in order to secure the future of posterity. According to the IUCN:

³⁸ Fondazione Eni Enrico Mattei 'The social dimension of biodiversity policy final report' 2011 at 1.

³⁹ Ibid

⁴⁰ Ibid at 14. See also C. De Klemm & C. Shine. (1993), 'Biological diversity conservation and the law', IUCN Environmental Policy and Law Paper No. 29 Gland, Switzerland and Cambridge, UK, xix + 292 pp.

⁴¹ UNEP (2011) 'Keeping Track of Our Changing Environment: From Rio to Rio+20 (1992-2012)' at 16 Division of Early Warning and Assessment (DEWA), United Nations Environment Programme (UNEP) Nairobi at http://www.unep.org/GEO/pdfs/Keeping_track.pdf (assessed on 16/10/2012).

⁴² L. C. Emma-Okafor I.I. Ibeawuchi & J. C. Obiefuna 'Biodiversity Conservation for Sustainable Agriculture in Tropical Rainforest of Nigeria' (2009) *New York Science Journal* ;2(7), at 81

⁴³ Ibid.

⁴⁴ A.O. Meduna, A.A. Ogunjinmi, & S.A. Onadeko 'Biodiversity conservation problem and their implications on ecotourism in Kainji Lake National Park, Nigeria' (2009) *Journal of sustainable development in Africa* volume 10, No .4. Also, it is the duty of man, as a higher being with greater intelligence to look after the earth and other living creatures, and ensure their survival and sustainability.

⁴⁵ A. Brennan & Lo Y, 'Environmental Ethics' in The Stanford Encyclopedia of Philosophy(ed) N Zalta (Fall 2007 Edition) (Stanford University, Stanford, 2007) at <http://plato.stanford.edu/archives/fall2007/entries/ethics->

“From time immemorial, nature has fed us, cured us, and protected us. But today the roles have switched. We need to feed nature, we need to cure it and protect it if we want to secure a healthy and prosperous future for our children.”⁴⁶

2.5 The status of the world’s biological diversity

The world has witnessed tremendous technological growth, with many breath-taking innovations as well as outstanding breakthroughs, in every aspect of human life, over the last century. Some of these include great achievements such as robot-operated plants, journeys into space, space stations, very intelligent computers, unmanned drones and gene modification to produce genetically engineered species. The world has also come to terms with their attendant consequences on the human environment.⁴⁷ Some studies have shown that these new technologies may create certain environmental problems such as an increase in pollution, environmental degradation and biodiversity loss.⁴⁸

In addition to these monumental achievements in the area of technology, the surge in the world’s population has increased the pressure on the environment and on biodiversity. According to the United Nations report on sustainable development,⁴⁹ in the 20th century the world population has increased fourfold. This has increased the pressure on the world’s biological diversity, with 35% more fish being caught when compared to periods prior to the 20th century.⁵⁰ The demand and usage of water has increased by nine times.⁵¹ These impacts were emphasised by Brundtland⁵² when she stated that:

environmental/ (accessed on 3/06/2013). See also C. McGrath ‘Does environmental law work?’ (How to evaluate the effectiveness of an environmental legal system). (2010).

⁴⁶ ‘Why is biodiversity in crisis?’ at http://www.iucn.org/what/biodiversity/about/biodiversity_crisis/ (accessed on 04/07/2013).

⁴⁷ J. O. Robinson ‘Environmental Education and Sustainable Development in Nigeria: Breaking the Missing Link’ (2013) *International Journal of Education and Research* Vol. 1 No. 5 at 1. See also K. Y. Suchak *Development and Environment Issues with special reference to Gandhian Perspective* at http://www.mkgandhi.org/environment/kavita_suchak.htm (accessed on 28/1/2013).

⁴⁸ A.B. Jaffe, R. G. Newell, R. N. Stavins ‘Technological changes and the environment’: (in) handbook of environmental economics, volume 1, edited by K. G. Maler & J.R. Vincent 2003 at 463.

⁴⁹ ‘Back to our common future: Sustainable development in the 21st century’ (SD21) project summary of policy makers at 3 at http://sustainabledevelopment.un.org/content/documents/UNDESA_Back_Common_Future_En.pdf (accessed on 5/2/2013).

⁵⁰ Ibid.

⁵¹ Ibid.

“When the century began, neither human numbers nor technology had the power to radically alter planetary systems. As the century closes, not only do vastly increased human members and their activities have that power, but major unintended changes are occurring in the atmosphere, in soils, in waters, among plants and animals and in the relationship among all of these.”

This assessment was made about twenty seven years ago, when the world’s population was around five billion.⁵³ With an estimated population of about seven billion in 2011,⁵⁴ there is the possibility that these projections would have increased.

Much has been said about the impacts of poverty on the human environment and biodiversity. Poverty has been identified to have played a major part in the continual rate of environmental degradation as well as the loss of biological diversity. Although the opinions expressed over the actual impact of poverty on the environment by various scholars and authors have been divergent,⁵⁵ it is the general view amongst the policy-makers in the development sector that poverty leads to environmental degradation.⁵⁶ This view is shared by De Janvry and Garcia⁵⁷ who, drawing from their Latin American experience on the relationship between poverty and the human environment, stated that:

“Even if the masses of rural poor are not the major agents of environmental degradation, important environmental problems in many regions of the Latin America are associated with their activities.”

⁵²See the report of the world commission for environment and development for the address by Brundtland H.B., chairman, at the closing ceremony of the eighth and final meeting of the commission 27 February 1987 in Tokyo, Japan at <http://www.un-documents.net/our-common-future.pdf> (accessed on 07/06/2013).

⁵³ Global issues *population* at <http://www.un.org/en/globalissues/population/> (accessed on 28/11/2013).

⁵⁴ Ibid. see also *state of world’s population 2011* at <http://www.unfpa.org/public/home/publications/pid/8726> (accessed on 28/11/2013).

⁵⁵ A contrary view was held by Jaganatha While looking at the level of deforestation, poverty and land use in west Java and Nigeria, he remarked that there are no evidence to support the assertion that poverty is the driving factor behind the growing spate of forest loss and unsustainable trend of land use in these countries. See V. N. Jaganatha. (1989): "Poverty, Public Policies and the Environment", Environment Working Paper No. 24, Washington DC: The World Bank.

⁵⁶ M. A. M. Victor & A. M. P. Makalle ‘Poverty and Environment: Impact Analysis of Sustainable Dar es Salaam Project on “Sustainable Livelihoods” of Urban Poor’. Research Report No. 03.7. (2003) at 1.

⁵⁷ A. de Janvry & R. Garcia ‘Rural poverty and environmental degradation in Latin America, technical issues in rural poverty alleviation’ staff working paper 1, International Fund for Agricultural Development Rome (1988).

Brundtland,⁵⁸ in her speech to the National Academy of Science in the United States of America emphasized the fact that the world's economy and the human environment cannot be severed from one another, as they are interlocked. Mahatma Gandhi⁵⁹ has also described poverty "as the greatest cause of environmental harm." The reason for this link may be seen in the fact that the poor people, in their quest to meet their daily needs, turn towards natural resources for their survival. In most cases, these resources are over-exploited, thereby reducing their numbers.⁶⁰ The poorer sector of the society are at the receiving end of the decline in natural resources and biological diversity loss that accompanies environmental degradation, even when they are not a contributing factor to it in the first place. Dasgupta⁶¹ has realised that where there is a decline in the level of natural resources, poor people suffer the most as their survival hinges on it. This is due to the fact that their means of sustenance and livelihood is the most dependent on these resources.⁶²

Before now, the effects of poverty on the environment have been played down by the industrialised countries, as a domestic problem which requires a national solution by the countries affected, these countries being mostly on the African continent.⁶³ However, the universality of the catastrophic effects of poverty on the environment has come into the open in recent times and it has now been recognized by the international community as a global pandemic. For instance, the world Commission on Environment and Development, in its report, stated that "poverty is a major cause and effect of global environmental problems."⁶⁴

⁵⁸ C.S. Silver. & R. S. DeFries - One Earth One Future: Our Changing Global Environment. Washington, DC: National Academy Press, 1990.

⁵⁹ Quoted in G. O. Amokaye 'Environmental law and practice in Nigeria'.2004 at 24.

⁶⁰ Ibid at 25. According to him, poverty is a major cause of biodiversity loss in Africa whose economy is based on natural resources. The poor people are financially handicapped and therefore cannot invest in the management of natural resources.

⁶¹ P. Dasgupta 'The Economics of Poverty in Poor Countries' (1998) *Scandinavian Journal of Economics*, 100(1) pp. 41-77.

⁶² G. J. Osemeobo 'Effects of Common Property Resource Utilization on Wildlife Conservation in Nigeria' *GeoJournal* 23.3 241-248 at 243.

⁶³ Amokaye (n 59 above).

⁶⁴ Our Common Future: Report of the World Commission on Environment and Development at <http://www.un-documents.net/ocf-ov.htm> (accessed on 12/13/2013).

The issues discussed above reveal that poverty plays a very important role in the rate of environmental degradation and biological diversity loss. The lack of the basic means of livelihood and sustenance by the poor masses of a society is likely to increase the rate at which natural resources are being exploited and, by implication, to increase the rate of extinction and biodiversity loss.

The major factors identified above have, in recent times, put a serious strain on the world's biological diversity, at a higher rate, when compared with the period before the extinction of the dinosaurs, over 65 million years ago.⁶⁵ It has also been recorded that greater proportions of lands have been converted to crop land between the 1950s and the 1980s than during the 150 years period between 1700 and 1850.⁶⁶ In addition, over six million hectares of forest have been lost, yearly, since 2000. Animals are not left out, as 78 of the world's total mammal species are extinct in the wild, while 191 are critically endangered, 449 endangered and 496 vulnerable to extinction.⁶⁷ The amphibians are the most threatened group of species, with 1910 out of the world's total of 6312 being in danger of extinction.⁶⁸

Although human activities contribute significantly to the rate of biodiversity loss, there are other, non-human, factors which are responsible. They include naturally occurring diseases such as the Ebola disease, which is responsible for the deterioration in the population of gorillas, climatic factors such as winds and temperature, which are catalysts for deforestation, and destruction of trees by animals such as rabbits, beavers, squirrels, among other natural factors.⁶⁹

There have been several efforts by the international community to address the global problem of biodiversity loss and to ensure the sustaining of the environment through the conservation of biodiversity and the sustainable use of its components. These measures are discussed below.

⁶⁵ C. De Klemm *et al.* (n 40 above) at xv.

⁶⁶ *Why is biodiversity in crisis* (n 46 above).

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*

⁶⁹ S.A. Abere 'Causes and effects of deforestation'. Proceedings of the 1st international technology, education and environment conference (c) African society for scientific research (ASSR) at 914 to 915 at www.hrmars.com/admin/pics/309.pdf (accessed on 07/08/2013).

2.6 International regime towards the conservation of biological diversity

2.6.1 The nineteenth and early twentieth century

Wildlife and ecosystem conservation is not a new concept in international law. In fact, certain steps were taken towards the conservation of specific species and ecosystems during the late nineteenth century.⁷⁰ However, these measures were put in place basically for trade and economic interests, rather than for the promotion of ecosystem stability and wildlife preservation.⁷¹ The beginning of the twentieth century witnessed a paradigm shift from this order, as more legislation was passed, and measures were taken towards the protection of species of wildlife and ecosystems.⁷²

2.6.2 The United Nations conference on human environment (UNCED) Stockholm 1972

The United Nations Conference on Human Environment (UNCHE) held in Stockholm in 1972 marked the advent of a new era in environmental consciousness. It was also a major milestone in the birth of international environmental law.⁷³ It was the first international congregation of nations to discuss the impacts of human activities on the environment, and to draw up a common strategy towards addressing the accompanying challenges.⁷⁴ The conference reiterated the need for the international community to look beyond the present, and into the future, in matters relating to the environment and to create awareness of the sustainable use of the earth's resources to serve the present generation, without jeopardizing the chances of the generations unborn.⁷⁵

Despite the unprecedented feat achieved by this conference, it failed to make a strict commitment towards biological diversity conservation. Its objectives and strategies were too

⁷⁰ L. B. de Chazournes (n 25 above) at 1.

⁷¹ Ibid.

⁷² Ibid.

⁷³ G. Handl 'Declaration of the United Nations Conference on the Human Environment Stockholm declaration, 1972 and the Rio declaration on the environment and development, 1992' at http://untreaty.un.org/cod/avl/pdf/ha/dunche/dunche_e.pdf (accessed on 16/10/2012).

⁷⁴ Ibid.

⁷⁵ Principle 2 of the Stockholm Declaration states that "the natural resources of the earth, including the air, water, land, flora and fauna, and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate".

wide and vague and therefore too difficult to be directed towards a specific environmental challenge. For instance, the second principle⁷⁶ provides that the natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.⁷⁷

This principle of the report, despite referring to natural resources, which forms the basis for biological diversity, did not make a clear-cut provision for its conservation. Its fourth principle, although making provision for conservation, did not relate it specifically to biological diversity. It only referred to the safeguarding and prudent management of the heritage of wildlife and its habitats.⁷⁸ Although the Stockholm meeting did not achieve much in the area of conservation of biodiversity, it nonetheless was not a failure, as it succeeded in raising the world's consciousness towards the environment, as well as bringing about a change of attitude towards environmental issues.⁷⁹

2.6.3 The United Nations Conference on Environment and Development (UNCED)

The United Nations in 1983 set up the World Commission on Environment and Development, which was headed by Gro Harlem Brundtland from Norway. In its recommendations, the commission proposed the doctrine of “sustainable development” as a possible approach towards balancing the world's economic growth with the carrying capacity of the earth and the environment.⁸⁰

The General Assembly of the United Nation, in response to the report of the commission, called for the convening of the United Nations Conference on Environment and Development, with the aim of determining the level of economic development that can be supported or tolerated by the

⁷⁶ Report of the United Nations Conference on the Human Environment, Stockholm 1972.

⁷⁷ M. Bowman and C. Redgwell *International law and the conservation of biological diversity*. Kluwer law international at 1.

⁷⁸ Ibid.

⁷⁹ L. B. de Chazournes (n 25 above).

⁸⁰ Earth summit at <http://www.un.org/geninfo/bp/envirp2.html> (accessed on the 16/10/2012)

The doctrine of sustainable development entails that our approach towards development should be met without compromising the ability of future generations to meet their own needs”.

earth. It aimed to create a working relationship between the developing countries and the industrialised countries on matters related to the environment and natural resources.

The United Nations Conference on Environment and Development, otherwise referred to as the Earth Summit which was held in Rio de Janeiro in Brazil in 1992, was a monumental success. It produced series of agreements and legal frameworks for addressing the myriad of problems affecting the environment. Some of the agreements include the following:

- Agenda 21, which was a detailed compilation of strategies and programmes which aims to combat the problem of environmental degradation as well as the promotion of the doctrine of environmental consciousness and sustainable development.⁸¹
- The Rio Declaration on the Environment and Development.
- The Statement of Forest Principles.

During the conference, support was canvassed for a framework to combat desertification. The United Nations Framework Convention on Climate Change (UNFCCC) and the Convention for Biological Diversity (CBD) were both opened for signature during the conference.

2.6.4 The Convention on Biological Diversity

The underlying principle of the CBD was born out of the need to protect and preserve every form of life, irrespective of how insignificant or irrelevant it is to human beings. The three broad objectives of the convention are “the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of its genetic resources.”⁸²

The CBD contains of forty-two articles. Although all the various articles have different roles to play in the area of biodiversity conservation, articles 8, 9, 10, 14 and 15, which forms the nucleus of the objectives of the CBD will be briefly introduced here.

Articles 8 and 9 provide for strategies for the conservation of biodiversity, which is one of the fundamental objectives of the CBD. While Article 8 provides for conservation within the natural habitats (*in situ* conservation), with specific reference to the establishment of protected areas,

⁸¹ See the foreword written by Nitin Desai (under-secretary -general for policy coordination and sustainable development) in N. A. Robinson's 'Agenda 21: Earth's action plan'.(1993)

⁸² See Article 1 of the Convention for Biological Diversity 1992

Article 9 recognizes the need to conserve natural resources outside their natural environment (*ex situ* conservation). Another important provision of the Convention which reflects its objective is Article 10, which provides for the adoption of measures to promote the sustainable use of these resources. Environmental impact assessment, which has been internationally recognised as an effective tool for determining the effects of projects on the environment, is the focus of Article 14. This stipulates that an environmental impact assessment structure be put in place, to conduct an assessment prior to the commencement of projects which are likely to adversely affect the environment.

Another article which reflects a major objective of the convention is Article 15. It provides for the grant of easy access to genetic resources from a gene-rich country to other contracting parties, as well as the fair and equitable sharing of the benefits which accrue from the use of these resources with their original owners. This is done without eroding or undermining the right of ownership of the natural resources by the owner country.⁸³

It should be pointed out here that Articles 8, 9, 10, and 14 are qualified by the words ‘as far as possible and as appropriate’. This qualification gives party countries to the CBD some flexibility in terms of the procedure to be adopted in the implementation of these four Articles and significantly impacts the strength of these CBD’s provisions. (This is the correction to chapter 4 as suggested by the internal examiner)

2.6.5 Other biodiversity-related conventions

There are several international environmental agreements and treaties which are biodiversity conservation oriented. They include the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), held in Washington in 1973), the Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (RAMSAR, 1971), the United Nations Convention on the Law of the Sea (Montego Bay, 1982), the Convention for the Protection of the World Cultural and Natural Heritage (Paris, 1972), the African Convention on the Conservation of Nature and Natural Resources (Algiers, 1968), Convention on Fishing and Conservation of the Living Resources of the High Seas (Geneva, 1958) and the United Nations

⁸³ See generally the articles of the Convention for Biological Diversity (CBD) 1992.

Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (Paris, 1994).

In spite of the fact that these conventions have biodiversity conservation as their subject matter, none has been able to provide a comprehensive conservation plan and programme to encompass all forms of biological diversity identical to that of the CBD.⁸⁴ A close look at the documents reveals that they are all limited in scope and directed towards the conservation of a specific type of biological diversity. While the Convention on International Trade in Endangered Species of Wild Fauna and Flora⁸⁵ (CITES) is restricted to the provision of guidelines and regulations for the international trade in endangered species of fauna and flora, the RAMSAR convention provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources, including the identification of wetlands of international importance.⁸⁶ The United Nations Convention for the Protection of the World Cultural and Natural Heritage provides for the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage.⁸⁷ Its sole responsibility is the conservation of areas designated as a heritage or cultural site. Going by the above analysis, it is clear that the CBD is the only international framework whose objective is the conservation of all species of biodiversity and which contains detailed strategies to be adopted in achieving these objectives.

⁸⁴ Handbook on the implementation of conventions related to biological diversity in Africa. Characteristics of biological diversity convention at <http://www.unep.org/padalia/publications/handbook21.htm> (accessed on 16/10/2012).

⁸⁵ Article 3 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973)

⁸⁶ Articles 1 & 2 of the RAMSAR Convention on Wetlands 1982.

⁸⁷ Article 4 of the Convention for the Protection of World Heritage and Cultural Sites.

CHAPTER 3

3.1 Introduction

After taking a careful look at biological diversity, its present status in the world, as well as international efforts towards ensuring its conservation and sustainable use, chapter 3 intends to introduce Nigeria and its biodiversity. This will include its natural endowment, such as agro and wildlife diversity, their present status, and the factors affecting them. In addition to this, its national biodiversity regime will be discussed in order to show the efforts being made by the government to protect these resources.

3.2 Nigeria and its biological resources

Nigeria is the most populous country in Africa, with an estimated population of around 167 million people,⁸⁸ and a population growth rate of about 3%.⁸⁹ It covers a total land area of 923 768km square. The country is located in the western region of the African continent and is bordered to the north by the republic of Niger. Benin is situated on its western borders, while it shares its eastern borders with Cameroon and Chad. The southern part of the country is bordered by the Atlantic Ocean.

Matters relating to environmental protection and biodiversity conservation are shared among the three tiers of government. The Federal Ministry of Environment and Urban Development is the national custodian and the focal point for all environmental matters at the national level, while each of the 36 states of the federation have their state ministries for environmental affairs.

It has different climatic and ecological zones, with a mean annual temperature ranging from 21°C in the south to 30°C in the north, and sometimes with extremes of 14°C and 45°C, and an

⁸⁸ E. Rosenthal *Nigeria tested by rapid rise in population*. Published in the New York Times of 14 April 2012 at <http://www.nytimes.com/2012/04/15/world/africa/in-nigeria-a-preview-of-an-overcrowded-planet.html?pagewanted=all> (accessed on 10/11/2012). See also the News Agency of Nigeria (NAN)'s report on 31 October 2011 at <http://www.nanngonline.com/section/healthgender/nigeria-has-sixth-largest-population-in-the-world-unfpa> (accessed on the 10/11/2012), also the official homepage of the Nigerian population commission at <http://www.population.gov.ng/> (accessed on 17/11/2012).

⁸⁹ Nigeria's National biodiversity strategy and action plan at <http://www.cbd.int/reports/search/?country=ng> (accessed on 26/1/2013)

altitude range of 0 to 1000m above sea level. Its annual rainfall varies between 450mm in the north-east region to about 3500mm in the coastal south-east. Nigeria is endowed with a variety of natural ecosystems which includes the semi-arid savanna and mountain forests. The Niger delta region of the country contains the largest tract of mangrove in Africa.⁹⁰

It is a biodiversity-rich country; this can be attributed to the various ecological and climatic zones available within the country. According to the first national biodiversity report,⁹¹ there are about 7895 species of plants, belonging to 338 families in the country. The country has about 22 000 species of vertebrate and invertebrate animals. Moreover, there are over 20000 species of insects recorded. Other categories of biodiversity listed in this report include a thousand species of birds, 274 species of mammals, over 1000 species of fishes and 123 species of reptiles.

There are also some species of mammals which are endemic solely to Nigeria. These include three species of monkeys, which are the white throat monkey (*Cercopithecus erythrogaster*), Sclater's guenon (*Cercopithecus sclateri*) and the Niger Delta red colobus (*Procolobus pennantii epieni*). The Nigerian-Cameroon chimpanzee, as well as the Cross Rivers gorilla (*diehli*), which is the most endangered species of gorilla in the world, is found in the southern part of the country.⁹² Several bird species have also been discovered to be endemic to Nigeria; they include the Anambra waxbill (*Estrilda polioptera*), the Ibadan malimbe (*Malimbus ibadanensis*), the Jos Plateau indigo-bird (*Vidua maryae*) and the Rock Fire-Finch (*Lagonostica sanguinodorsalis*).⁹³

Apart from wildlife biodiversity, the country is equally rich in forest and agro-biodiversity. The types of forest that can be found within the country are Savanna and Woodland, Lowland Rain Forest, Freshwater Swamps Forest, Mangrove Forest, Montane Forest, Riparian Forest,

⁹⁰ First National Biodiversity Report of Nigeria July 2001 at <http://www.cbd.int/doc/world/ng/ng-nr-01-en.pdf> accessed on 26/1/2013. See also Nigeria *status and trends of biodiversity* at <http://www.cbd.int/countries/?country=ng> (accessed on 26/1/2013).

⁹¹ Ibid.

⁹² C. Ravilious, V. Kapos, M. Osti, M. Bertzky, J.L. Bayliss, S. Dahiru, & B. Dickson, (2010). 'Carbon, biodiversity and ecosystem services: Exploring co-benefits. Nigeria: Preliminary Results'. UNEP-WCMC, Cambridge, UK at 4.

⁹³ Nigeria's Fourth National Biodiversity Report 2010 at <http://www.cbd.int/doc/world/ng/ng-nr-04-en.pdf> (accessed on 03/12/2013).

Plantation (agriculture) and the Plantation (forest).⁹⁴ These forest resources vary according to the geographical location in the country within which they are found, for example, the drier middle and north latitudes, the lowland rainforest in the southern humid zone, and the coastal mangroves and freshwater swamp forests.⁹⁵ Its renewable water resources are estimated to be around two hundred and twenty one cubic kilometres.⁹⁶

The past few decades have witnessed a drastic depletion in the quantity of these resources. For instance, the total percentage of the forest resources of the country has reduced greatly due to increased international trading in wood resources.⁹⁷ It lost about 20% of its forest and woodland between 1983 and 1993.⁹⁸ This trend has shown no signs of abatement. According to the USAID⁹⁹ report, the percentage of undisturbed forest land in the country reduced to 1.3% between 1993 and 1995, as against 2.9% between 1976 and 1978. The report stated that the guinea woodland once found in the Jos plateau region has nearly become extinct.¹⁰⁰ More recently, Nigeria was ranked among the countries with the highest forest loss in percentage terms, as well as one of the countries on the African continent with the largest rate of forest loss in area terms¹⁰¹

Despite the fact that some species of wildlife, such as the chimpanzee (*Pan troglodytes*) lowland gorilla (*Gorilla gorilla*), ostrich (*Strutio camelopedalus*), black rhinoceros (*Diceros biicornis*), giraffe (*Giraffa camelopardalis*), pigmy hippopotamus (*Choeropsis liberiensis*) and water chevrotain (*Hyemoschus aquaticus*), were given conservation priority by the Nigerian authorities, there is evidence to show that some have already become extinct.¹⁰² Agro-biodiversity has suffered a similar fate, as the following species of plants are on their way to

⁹⁴ FAO corporate document repository 'A Report on the forest resource situation assessment of Nigeria' at <http://www.fao.org/docrep/004/ab578e/AB578E04.htm#1657> (accessed on 21/12/2013).

⁹⁵ USAID 'Nigeria biodiversity and tropical forest assessment, maximizing agricultural revenue in key enterprises for targeted sites (markets)' at 6 at http://pdf.usaid.gov/pdf_docs/PNADN536.pdf (accessed on 03/12/2013).

⁹⁶ C. Mwalimu 'The Nigerian legal system' volume 2 at 24.

⁹⁷ A. Olatubosun 'The Need for a Legal Regime for Sustainable Forest Management in Nigeria' *IUCN academy of environmental law e journal issue2010 (1)* at 1.

⁹⁸ Nigeria: 'Environment' available at <http://www.nationsencyclopedia.com/Africa/Nigeria-ENVIRONMENT.html> (accessed on 23/1/2013). See also (n 93 above)

⁹⁹ (n 95 above)

¹⁰⁰ Ibid.

¹⁰¹ Food and Agriculture Organization State of world's forests 2011 at 5 at <http://www.fao.org/docrep/013/i2000e.pdf> (accessed on 03/11/20).

¹⁰² (n 90above) at 9.

extinction: the native yam, beans, white melon, *Chrysophyllum albidum*, *Irvingia gradifolia*, *Balanites* spp, *Vitellaria paradoxa* (shear butter tree), *sada*, *Atili* and *Borno* ex-millet.¹⁰³

3.3 Factors affecting Nigeria's biological diversity

3.3.1 Poverty and population pressure

With an estimated population of 167 million, and an annual population growth rate of approximately 3.2%,¹⁰⁴ there has been a significant increase in the demand for, and use of, natural resources. This has resulted in a decrease in the quantity of these biodiversity resources. Traditionally, a farmer is entitled to farming land, and an increase in the country's population will, by implication, lead to an increase in the demand for more farmlands. With over 58.71% of the total population of the 118.4 million inhabitants of the country, as at 1997, being rural dwellers,¹⁰⁵ the pressure faced by the country's natural resources and biological diversity at the present time is likely to be higher.

In addition, the economy of the rural areas in Nigeria is driven by biodiversity due to high levels of poverty in such areas.¹⁰⁶ Most of the people who reside in rural areas depend on the exploitation of the resources within their natural environment for their survival.¹⁰⁷ For example, they depend on the use of wood and trees to make firewood to cook their food, they also hunt animals and game in order to add protein to their diet. All this exploitation is unregulated and results in a severe loss of biodiversity.¹⁰⁸

¹⁰³ (n 89 above) at 14.

¹⁰⁴ Nigeria's population growth cannot sustain economy – remarks of the director general of the Nigerian population commission to the participants at the National Security Training seminar at the NPC headquarters in Abuja. Reported in the Nigerian tribune newspaper on the 3rd of April 2012 at <http://www.tribune.com.ng/index.php/news/38640-nigerias-population-growth-cant-sustain-economy-npc> (accessed on 17/11/2012).

¹⁰⁵ P.I. Oni 'State of Forest Genetic Resources in the dry north of Nigeria' prepared for the sub- regional workshop FAO/IPGRI/ICRAF on the conservation, management, sustainable utilization and enhancement of forest genetic resources in Sahelian and North-Sudanian Africa (Ouagadougou, Burkina Faso, 22-24 September 1998) Forest Genetic Resources Working Papers FGR/16E. Forestry Department, FAO, Rome, Italy.

¹⁰⁶ (n 89 above) at 12.

¹⁰⁷ Ibid.

¹⁰⁸ According to the Nigeria's National Biodiversity Strategy and Action Plan, more than 70% of the country's population resides in rural area heavily reliant on wild plants and animals for food and income supplementation.

3.3.2 Habitat destruction

Nigeria is a developing country, with a growing economy, and several developmental activities and programmes taking place. These activities, such as road and irrigation construction and the earmarking of certain portions of land for agriculture purposes, result in habitat and ecosystem destruction and severely affect biodiversity.¹⁰⁹ The need to provide suitable shelter also comes in the wake of economic and population growth. New houses and settlements are required and, as a result of this, new farm lands and forest areas are degraded and converted to residential areas for the population.¹¹⁰

3.3.3 Oil exploration activities

Nigeria is Africa's largest oil producer and its economy is largely dependent on oil. About 90% of the government's revenue is derived from oil and crude trade and accounts for 80% of its total GDP. Most of these exploration activities take place in the Niger-delta region¹¹¹ which is the main hub of oil deposits in the country. This region is, at the same time, blessed with unique species of biodiversity, with over 60% of the total mangrove forest occurring in Nigeria found there. It has one of the 10 most important wetland and marine ecosystems in the world.¹¹² It is home to the fresh water swamp forest, which covers approximately 11 700sq km and has been described as the most extensive in west and central Africa.¹¹³ As a result, the abundance of oil in the region has been a curse rather than a blessing to the inhabitants of the region, as well as to its biodiversity.¹¹⁴ They have been made to live with the harmful effects of these activities which

¹⁰⁹ Emma-okafor *et al* (n 42 above) at 84.

¹¹⁰ Ibid.

¹¹¹ The region is made up of six states namely Edo, Delta, Akwa-Ibom, Bayelsa, Rivers and Cross Rivers, Ondo, Imo and Abia states. See the official website of the Ministry of Niger Delta Affairs at <http://www.mnda.gov.ng/mnda/> (accessed on 03/12/2013). See also. D. Okonmah, 'Right to a Clean Environment: The Case for the People of Oil-Producing Communities in the Nigerian delta' (1997) *Journal of African Law*, Vol.41, No.1 at 52.

¹¹² O. Ajai, 'Law Water and Sustainable Development: Framework of Nigerian Law' (2012) *Law, Environment and Development Journal*, p. 89 – 115 at 106. See also M. T. Ladan 'Re draft Nigeria's report to the United Nations conference (RIO+20) on sustainable development' at 6 at <http://mtladan.blogspot.com/> (accessed on 12/09/2012).

¹¹³ Ibid

¹¹⁴ B. A. Chokor 'Environmental Pressure Groups and Habitat Protection in the Developing World: The Case of Nigeria' (1992). *The Environmentalist* Volume 12, Number 3, 169-180 at 176. According to him, oil exploration activities have helped to alter the rich national flora and fauna of the marshland and mangroves.

include oil spills, pollution and gas flaring. According to Ajayi *et al*,¹¹⁵ pollution resulting from oil spills, and improper disposal of drilling muds from oil prospecting have impacted negatively on the aesthetic value of the natural beaches, damaged the marine wildlife and altered the ecosystem, resulting in the extinction of several species. The World Bank¹¹⁶ in its 1995 report has identified environmental degradation as the major factor responsible for the poor human health prevailing within the region.

In addition to the problems of oil spill, the region is renowned for its gas flaring. It ranks second to Russia among the highest gas flaring countries in the world.¹¹⁷ Approximately 75% of its associated gas is flared into the atmosphere due to lack of gas infrastructure.¹¹⁸ According to Yakubu Gowon, a former head of state of the country, a staggering \$2billion worth of natural gas was flared in the country in the year 2011.¹¹⁹ The environment, human life and biodiversity suffer the consequences of these actions.

While gas flaring has considerably affected the ecosystem in the region, it has also led to the death or alteration in the physical and natural composition and attributes of the different species of plants and animals in the Niger delta.¹²⁰ It has also been identified as being responsible for the acid rain being experienced in the region, resulting in the destruction of the roofing of houses, while also having an unquantifiable detrimental effect on human life.¹²¹ Various multinational

¹¹⁵ D. D. Ajayi & C.O Ikporukpo 'An analysis of Nigeria's environmental vision 2010 *Journal of Environmental Policy & Planning* 7:4, 341-365. According to them, over 4000 cases of oil spill have been recorded in the country since 1960.

¹¹⁶ World Bank 'defining on environmental development strategy for the Niger delta', Vol (14266) (1995), at 33, 34 & 35. See also I. S. Ibaba 'Environmental Protection Laws and Sustainable Development in the Niger Delta' (June 2010) (*Africana Journal*).

¹¹⁷ C.D. Elvidge, E.H. Erwin, K.E. Baugh, B.T. Tuttle, A.T. Howard, D.W. Pack, & C. Milesi 'Satellite data estimate worldwide flared gas volumes' (2007) *Oil and Gas Journal* 50 – 58.

¹¹⁸ Federal Republic of Nigeria 'Report of the Special Committee on the Review of Petroleum Products Supply and Distribution' (Abuja: Federal Ministry of Information and National Orientation) (2000).

¹¹⁹ Gowon 'How Nigeria lost \$2billion to gas flaring last year'. Published in The Nation newspaper on 19th September 2012 at <http://www.thenationonline.net/2011/index.php/news/62016-nigeria-lost-2b-to-gas-flaring-last-year-gowon.html> (accessed on 22/07/2013).

¹²⁰ See also the editorial report of Punch Newspaper, 'The high cost of gas flaring in Nigeria'. Published in the punch newspaper on 22 October 2012 at <http://www.punchng.com/editorial/the-high-cost-of-gas-flaring-in-nigeria/> (accessed on 03/12/2013).

¹²¹ Ibid.

companies operating within this region of the country have reported a series of cases of oil spills and pollution.

3.3.4 Inappropriate farming activities

The country's biological diversity also suffers from the primitive and inappropriate farming activities taking place among the farmers in the country. The practice of shifting cultivation culture, whereby a farmer cultivates a land for a certain period of time and, after depleting the nutrients in the old land, moves over to cultivate new lands in order to allow the old land some time to regain its lost nutrients, accounts for over 80% of the total annual deforestation rate within the country.¹²²

In the process of cultivating the new land, not only are a substantial number of trees cut away, but the wildlife population suffers from a loss of its habitat and is often threatened by fire during the clearing of the farmland for cultivation. This greatly affects the biological diversity which is situated within these geographical areas.¹²³

3.3.5 Overgrazing

The largest concentration of livestock in Nigeria, which comprises cattle, sheep and goats, is found in the northern arid region of the country. The vegetation of this region has been subjected to severe depletion as a result of over-grazing.¹²⁴ In order to find more arable pasture to feed their livestock during the dry seasons in the north, the Fulani herdsmen move their livestock down towards the southern part of the country. They cut trees as fodder for their cattle and attack and kill any dangerous animals that threaten their herds.¹²⁵ This leads to further depletion of the population of trees and wildlife around these new grazing areas.

¹²² Federal Ministry of Environment and Urban Development Nigeria 'National Forest Policy', 2006 at <http://foris.fao.org/static/pdf/nfp-and-forest-policy-documents/nigeria-national-forest-policy-2006.pdf> (accessed on 23/03/2013).

¹²³ Ibid.

¹²⁴ Ibid .

¹²⁵ P. A. Anadu 'Wildlife Conservation in Nigeria: Problems and Strategies' (1987) 7: 3 *The Environmentalist Journal* 212

3.4 Traditional methods of biological diversity conservation in pre-colonial Nigeria

The concept of natural resources and biological diversity conservation, as well as that of sustainability, is not a new phenomenon to the pre-colonial traditional African and, by extension, Nigerian society. Conservation practices and activities existed in the traditional customary laws and practices of most communities on the African continent.¹²⁶ Most of these are influenced by religious beliefs, traditional practices, taboos and superstitions, as well as their lifestyles which have evolved over the years, and are transmitted from one generation to the other.¹²⁷ Judge Weeramantry¹²⁸, of the International Court of Justice, while commenting on the modern doctrine of intergenerational sustainability, stated that this doctrine would be more popular within the African and Asian continent. This he said is as a result of their doctrines on the principle of equality in their traditional customary laws, which include respect for celestial elements such as the earth, seas, lakes and the atmosphere.

According to the traditional beliefs of the Yorubas in the south-western region of Nigeria, certain animals such as vultures and the ground hornbill are considered to be sacred and therefore it is forbidden to kill them.¹²⁹ The parrot is also spared the horror of the catapult, as it is considered to be possessed and should only be kept as man's pet. The *Oya*¹³⁰ devotees are also forbidden to eat meat from buffaloes because the goddess is considered to be the mother of all the buffaloes.¹³¹ Certain trees such as the '*iroko*' (*chlorophora excelsa*) tree and some other plants are considered to be the abode of divine spirits and gods and must not be cut except upon the orders of these gods or in the overall interests of the community.¹³²

¹²⁶ A. M. Wuver & D. K. Attuquayefio "The Impact of Human Activities on Biodiversity Conservation in a Coastal Wetland in Ghana (Jan – Jun 2006)" *West Africa Journal of Applied Ecology* Volume 9 at 12.

¹²⁷ B. Sibanda (2000). 'Community Participation: NGOs and IGOs in Nature Management', in D. Tevera & S. Moyo (eds.) *Environmental Security in Southern Africa*, Harare: SAPES Books.

¹²⁸ The Maritime Boundary Delimitation in the area of Greenland and Jan Mayer land (*Denmark v Norway*) (1993) ICJ 38, 241-43 (June 14) see also G.A. Oke 'Intergenerational Sustainability and Traditional Knowledge in Africa: Natural Resource Management Perspective'. Presented at Global Ecological Integrity and the Sustainability of Civilization: Hard and Soft Law Perspectives June 29-July 3 2005, Venice, Italy at 4.

¹²⁹ Amokaye (n 59 above) at 8. In relation to this, certain communities in Benin consider some animals, which include species of snakes such as the python, and wild cats to be guardian angels, and as such, must not be hunter or killed.

¹³⁰ *Oya* is one of the goddesses in the Yoruba traditional belief.

¹³¹ A. G. Olusola 'Animals in the traditional worldview of the Yoruba' at <http://www.folklore.ee/folklore/vol30/olusala.pdf> (accessed on 18/2/2013).

¹³² (n 59 above).

The forests enjoyed the same measure of conservation. Certain forests were considered as sacred and people are forbidden from moving close to them. Some of these forests were reserved strictly for the burial of people who died of infectious and contagious diseases, such as leprosy and tuberculosis, while others were dedicated strictly for the hunting of a specific class or species of animal by hunters.¹³³ Similarly, the Oguta people of Imo state in the south eastern region of the country are only allowed to fish in the Oguta River every five days. This is born out of the need not to disturb the river and its goddess, who is believed to be the source of all the fishes in the river.¹³⁴ The northern part of the country is not excluded, as it has its own form of conservation strategies. For example, there was traditional forest guards referred to as ‘*sarkin daji*’, or ‘*sarkin dawa*’, with enormous powers to enforce the various conservation practices.¹³⁵

Apart from Nigeria, other regions of Africa had a series of cultural practices and traditional beliefs similar to what was obtainable in pre-colonial Nigerian society and through which they also conserve their environmental resources. The Shona-speaking community of Ndau in the south-eastern part of Zimbabwe views the environment as related and equal to the human community and a vital link between the spiritual and the physical world. To them natural elements such as the rocks, caves, pools and the manifestation of certain animals are evidences the existence of a spiritual world.¹³⁶ The people are forbidden to eat pangolin (*haka*) because it is believed to be sacred. The pangolin’s shell is used for divination by traditional diviners and can only be eaten by the chiefs at special ritual events.¹³⁷ The mutarara (*gardenia globiflora*) tree is believed to drive away witches from the corpse of a dead person when placed upon it and therefore should not be cut for any other purpose.¹³⁸ In South Africa, the Venda and Sotho-Tswana tribe revere certain species of wild animals, reptiles, birds and fish and forbids anyone to

¹³³ Ibid at 7.

¹³⁴ B.A. Chokor ‘Government Policy and Environmental protection in the Developing World, The Example of Protection in Nigeria’ *Environmental Management* Vol. 17, No. 1, pp. 15-30 at 17

¹³⁵ Ibid.

¹³⁶ O. Rusinga. & R. Maposa ‘Traditional religion and natural resources: A reflection on the significance of indigenous knowledge systems on the utilization of natural resources among the Ndau People in south-eastern Zimbabwe’ (Sep 1987) *Journal of Ecology and the Natural Environment* Vol. 2(9), pp. 201-206, at 202.

¹³⁷ Ibid.

¹³⁸ Ibid.

kill them. Any violation of these divine instructions attracts supernatural consequences and sanctions.¹³⁹

The doctrine of sustainable development is evident in the various land ownership and tenure systems practised among the Yoruba people of Nigeria. This is informed by their belief, as well as the great importance they attach to the land. The concept of family ownership of land, for example, vests the ownership of the specified land in every member of the family including the dead, living and the ones yet unborn,¹⁴⁰ and charges the head of the family, who is also the custodian of the land, to preserve and protect it for the benefit of the entire family. The original motives for these activities might not necessarily be for the conservation of these resources, but people cannot belittle the contributions they have made towards the preservation of biodiversity.¹⁴¹

The argument that these traditional conservation practices and activities are inadequate to sustain natural resources has been heavily criticised and faulted. According to Oke,¹⁴² traditional practices offer the most practical and acceptable modes of achieving sustainable development for the purpose of environmental protection as well as biodiversity conservation, both for the wellbeing of the present generation and in the interests of those to come. He described the modern day conservation practice as being driven by economic development, which is against the spirit of traditional conservation practices. Similarly, Rusinga *et al*¹⁴³ described the modern day conservation strategies being advocated in place of traditional practices, as hugely influenced by scientific activities in the Western world, which are quite different from the realities and peculiarities of traditional African communities. They condemn the notion that

¹³⁹ J. M. T. Labuschagne & C. C. Boonzaaier 'African Perception and Legal Rules Concerning Nature' (1998) 5 *South African Journal of Environmental Law and Policy* at 58.

¹⁴⁰ According to the Elesi of Odogbolu, while testifying before the West African Land Committee, land belongs to a vast family of whom many are dead, few are living and countless are yet unborn. The committee, while describing the attitude of West Africans towards land, stated that land is considered and is still the property of the original settlers, and thus belongs to the past, the present and the generation to come. See Elias, O. T. *Nigerian land law* 4th edition 1971 (Sweet and Maxwell, London). See also Amokaye (n 59 above) at 6 and also see M. G. Yakubu 'Land Law in Nigeria'. Macmillan Press, London (1985) at 6.

¹⁴¹ (n 97 above) at 7.

¹⁴² (n 128 above).

¹⁴³ (n 136 above) at 206

Africa's traditional practices were wasteful and unacceptable and described modern conservation strategies as a ploy to alienate the indigenous people from their resources.

The various factors which threaten biodiversity in Nigeria have been explored in this section. In the next section the legal framework for the conservation of biodiversity in the country will be outlined.

3.5 Nigeria and the Convention on Biological Diversity

Nigeria attended the United Nations Conference on Environment and Development (the earth summit) held in Rio de Janeiro, Brazil, in 1992, and also participated actively in the pre-summit negotiation process which preceded the conference. The country signed the CBD during the conference and thereafter ratified it on 29 August 1994.

In addition to the CBD, Nigerian has signed and ratified some other biodiversity-related frameworks and conventions. They include:

- The Convention on International Trade in Endangered Species of Fauna and Flora (CITES), 1973, ratified on 9 March 1974.
- The Convention on Wetlands of International Importance (RAMSAR) 1971, ratified on 2 February 2001 and domesticated into Nigerian law according to the Ratification and Enforcement Act, 2007.
- The Convention on the Prevention of Marine Pollution by Dump of Wastes and other Matters, 1972.
- The Convention on the Conservation of Migratory Species of Wild Animals, 1973
- African Convention on the Conservation of Nature and Natural Resources (Algiers), 1968.
- The Convention on Fishing and Conservation of the Living Resources of the High Seas, 1985.
- The Convention concerning the Protection of the World Culture and Natural Heritage, 1972.
- The Cartagena Protocol on Biosafety, 2000.

3.6 Nigeria's legal regime on biodiversity

Over the years, the Nigerian government has put in place a number of environmental regulations and policies which contain provisions that are significant and very useful for ensuring the conservation and sustainable use of its biodiversity. Incidentally, some of these legislations even pre-dated the Convention.¹⁴⁴ A brief description of these pieces of legislation is as follows.

3.6.1 The Endangered Species Act

The Endangered Species Act¹⁴⁵ was enacted to control and regulate international trade in respect certain species of wildlife which are categorised as endangered by the international community. This is in compliance with its obligations under the Convention on International Trade in Endangered Species of Fauna and Flora.

3.6.2 Environmental Impact Assessment Act

The Environmental Impact Assessment Act¹⁴⁶ provides for the conduct of an impact assessment for projects that are likely to affect the environment. This measure is to determine the extent of their impact on the environment. The Act strikes a balance between development and environmental considerations and implications,¹⁴⁷ by providing that environmental effects and implications must be considered before embarking on the implementation of these projects.

3.6.3 Exclusive Economic Zones Act

The Exclusive Economic Zones Act¹⁴⁸ gives the Nigerian government the authority to exercise certain sovereign rights (which include conservation and exploitation of the natural resources within it) over its exclusive economic zone.¹⁴⁹ Section 3(1) provides for the use, exploitation, exploration and conservation of the natural resources within the zone, subject to the permission of the appropriate co-ordinating agency, as well as its stipulated conditions.

¹⁴⁴ Examples of the pre-1992 conservation legislation in Nigeria are the Forest Ordinance of 1937, the Sea Fisheries Act and its regulation of 1972 and the Endangered Species Act.

¹⁴⁵ Endangered Species Act CAP E9, LFN 2004.

¹⁴⁶ Environmental Impact Assessment Act CAP E12, LFN 2004.

¹⁴⁷ N. Echefu & E. Akpofure 'Environmental Impact Assessment in Nigeria: regulatory background and procedural framework' at [http://www.unep.ch/etu/publications/14\)%2063%20to%2074.pdf](http://www.unep.ch/etu/publications/14)%2063%20to%2074.pdf) (accessed on 16/11/2012).

¹⁴⁸ Exclusive Economic Zones Act CAP E17 LFN 2004.

¹⁴⁹ According to the Act, the Exclusive Economic Zone of Nigeria is an area extending up to 200 nautical miles seaward from its coast.

3.6.4 Sea Fisheries Act CAP S4 L.F.N 2004

The Sea Fisheries Act¹⁵⁰ was enacted to protect the fishes found within the country's national waters. In its introductory chapter, it is described as “an act to provide for the control, regulation and protection of sea fisheries in the territorial waters of Nigeria.”

A more detailed analysis of some of these legislations will be provided in the course of discussing the implementation of the articles of the Convention by the Nigerian authorities in the following chapter.

¹⁵⁰ Sea Fisheries Act CAP S4 L.F.N 2004.

CHAPTER 4

4.1 Domestic Implementation of the CBD by Nigeria

The activities of the Nigerian authorities (such as policies, legislation and institutions), which align with the provisions of the articles of the CBD, will be analysed in this chapter. Similar activities taking place in other jurisdictions, for example, South Africa will be brought into focus, where it is revealed that there are inadequacies in Nigeria's implementation system. The purpose of this is to bridge the gap in Nigeria's implementation. A brief description of what is meant by implementation within the context of this research work will be the starting point here, with a subsequent exploration of the various activities which constitute substantial compliance to the articles of the Convention under examination.

4.2 The meaning of domestic implementation

In considering the domestic implementation of an international environmental agreement by a state party, an examination has to be made to the various legislative frameworks, the national and regional policies and programmes, and the institutional capacities built by the authorities of the country in order to achieve the goals and objectives of such conventions.¹⁵¹ This is because national environmental laws are like mirrors that reflect the intentions and objectives of the particular international environmental laws or conventions within whose scope they operate.¹⁵² For example, a national biological diversity conservation statute, made by a country which has ratified the CBD, will invariably be designed to conform to the aims and objectives of the CBD and its goals will be fashioned in such a way as to achieve these objectives within the national jurisdiction.

This alignment has been emphasized by several provisions included in various international conventions and agreements. Agenda 21, for instance, specified the importance of the

¹⁵¹ Training manual on international environmental law at 15 at http://www.unep.org/environmentalgovernance/Portals/8/documents/training_Manual.pdf (accessed on 5/03/2013).

¹⁵² Ibid.

implementation of international environmental agreements through the enactment and enforcement of laws at regional, national or municipal levels, as the case might be.¹⁵³

4.3 Status of international conventions in Nigeria

It is initially important to have a basic understanding of the structure of the legal system of Nigeria, in order to understand the nature and hierarchy of its laws and the status of international conventions in the country. Nigeria, due to its common law inclinations, is a dualist state¹⁵⁴ and, according to the provisions of its Constitution,¹⁵⁵ requires the domestication of any international treaty into its national laws before it can come into force within the country. According to Sec 12(1) of its Constitution:

“No treaty between the Federation and any other country shall have the force of law to the extent to which any such treaty has been enacted into law by the National Assembly.”

The CBD has not been directly domesticated into Nigeria’s laws. This means that the country does not have a national law by which it implements all the provisions of the CBD. However, there are different legislations, regulations, programmes and policies which have been put in place to conserve the country’s biodiversity. They align with the provisions of the articles of the CBD and therefore can be used to assess the level of domestic implementation in the country. The country has prepared its National Biodiversity Strategy and Action Plans (NBSAP) in compliance with its obligations under the Convention and recently submitted its fourth national biodiversity report to it.¹⁵⁶

Nigeria operates a three tier system of government, with each of the unit having the constitutional powers to make laws over matters within its legislative competence.¹⁵⁷ For example, the federal government has the exclusive powers to legislate on matters such as

¹⁵³ See Part 1.3 of the preamble of the United Nation’s Agenda 21.

¹⁵⁴ A dualist state requires that all international treaties should be domesticated into the national laws of the country before they can be implemented. Unlike a monist state, which considers international law as an integral part of domestic law, and therefore requires no further implementation.

¹⁵⁵ The Constitution of the Federal Republic of Nigeria 1999.

¹⁵⁶ See (n 89 & 93) above for both the Fourth National Biodiversity Report and the National Biodiversity Strategy and Action Plan NBSAP submitted by Nigeria to the CBD secretariat.

¹⁵⁷ Part 1 & 2 of the second schedule of the constitution of the Federal Republic of Nigeria 1999 contains the exclusive and concurrent legislative lists.

immigration, defence and currency, while it shares these powers with the states in respect of matters relating to the environment, wildlife, biodiversity, and forest management.

For the purpose of this dissertation, priority will be given to activities taking place at the national level. This includes legislative and policy programmes of the federal government towards implementing the provisions of the articles of the CBD. This is because the 36 states in the country have different departments for environmental protection and enforcement, and they all have different programmes and action plans, which are determined by the individual environmental challenges confronting them.¹⁵⁸ An analysis of the activities taking place in each of the states will be too complex for this research. Nevertheless, whenever it is required, the activities of one or more states will be included.

The various articles of the Convention and the implementation by Nigeria will be discussed in turn.

4.4. Article 6 – General measures for conservation and sustainable use

4.4.1 Biodiversity strategies, plans and programmes

Article 6 (a) provides that each contracting party shall, in accordance with its particular conditions and capabilities, develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the contracting party concerned.

According to the CBD secretariat,¹⁵⁹ implementation of this article would require the utilization of available information and resources, at the national level, to develop plans and programmes towards the conservation and sustainable use of biodiversity. In order to achieve this, each country can either decide to develop new biodiversity management and conservation plans, or review the ones which had already been in existence.¹⁶⁰

¹⁵⁸ For instance, soil erosion is more prominent in the southern part of the country, while deforestation is a major environmental challenge in the northern part.

¹⁵⁹ Convention for Biological Diversity Available at <http://www.cbd.int/gbo1/chap-02.shtml> (accessed on 30/11/2013).

¹⁶⁰ Ibid.

In compliance with Article 6 (a) of the CBD, Nigeria has initiated several policies, action plans and programmes, which consist of economic-specific policies¹⁶¹ and environmental protection policies. A list of some of these policies which show compliance with the objectives of Article 6 of the CBD include the National Policy on Environment, Nigeria's Agenda 21, the National Forest Policy, the Vision 2010 and the Vision 20 20 20 policy.

Furthermore, in compliance with article 6 (b) of the CBD,¹⁶² biodiversity conservation and sustainable use has also been included in the objectives and goals of some of the Federal ministries and agencies in the country. Examples include the Science, Technology and Innovation Policy of the Federal Ministry of Science and Technology and the New National Agricultural Policy of the Federal Ministry of Agriculture. All of these combine to show compliance with the provisions of Article 6 of the CBD.

Although these policies cover broad environmental issues affecting the country, this dissertation will focus on the biodiversity conservation strategies and plans included in them. Some of these policies are discussed below.

4.4.1.1 National policy on the environment

The National policy on the environment was the first environmental action plan to be developed by the Nigerian government to ensure the protection of its environment. It was launched in 1989,¹⁶³ and has subsequently been revised in 1999 to incorporate, and to reflect, newly emerging global and national environmental concerns and challenges. This measure is not legislation, but a policy framework, and, as such, does not carry the force of law.

The policy contains a comprehensive action plan, aimed at creating a synergy between environmental considerations and national development, by emphasising the need to incorporate

¹⁶¹ The goals of these policies are economic growth-driven, for instance they were designed to promote economic growth and development in the country. However, some of them contain provisions for the protection of the environment, as well as biodiversity conservation. Some of these policies include Vision 2010, and the Vision 20: 2020.

¹⁶² This article provides for the integration "as far as possible and as appropriate", of the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

¹⁶³ Federal Environmental Protection Agency (1989), our national environmental goals Special Publication No 3 Federal Environmental Protection Agency, Lagos.

environmental consideration and the principle of sustainability in certain key sectors of the country's national life.¹⁶⁴ These include: Human Population; Land Use and Soil Conservation; Water Resources Management; Forestry, Wildlife and Protected Natural Areas; Marine and Coastal Area Resources; Sanitation and Waste Management; Toxic and Hazardous Substances; Mining and Mineral Resources; Agricultural Chemicals; Energy Production; Air Pollution; Noise in the Working Environment; Settlements; Recreational Space, Green Belts, Monuments and Cultural Property.¹⁶⁵

It identifies the various environmental challenges facing the country, and which require immediate attention, and provides a detailed approach towards addressing them. The biodiversity goal of the policy is to:

“restore, maintain and enhance the ecosystems and ecological processes essential for the functioning of the biosphere to preserve biological diversity and the principle of optimum sustainable yield in the use of living natural resources and ecosystems.”¹⁶⁶

The policy recognises the fact that biodiversity has not been given the attention it deserves. For instance, its beneficial value and importance and the need to conserve it have not been adequately considered. This is evident in the non-inclusion of the full cost of biodiversity loss in the country's economic accounting.¹⁶⁷

Some of the strategies developed by the policy towards achieving its objectives in the area of biodiversity conservation, and their method of implementation, include:

- protection of the remaining natural ecosystem as well as the restoration and rehabilitation of the degraded ones,¹⁶⁸
- incorporation of environmental consideration in economic and national policies,¹⁶⁹
- ensuring the implementation of Nigeria's Biodiversity Strategy and Action Plan,¹⁷⁰

¹⁶⁴ (n 134 above) at 25.

¹⁶⁵ World Resources Institute – Nigeria: National Policy on Environment. Available at <http://projects.wri.org/sd-pams-database/nigeria/national-policy-environment> (accessed on 14/1/2013)

¹⁶⁶ See policies (b) & (c) of the National Policy on the Environment.

¹⁶⁷ See biological diversity management section in the Nigeria National Policy on the Environment

¹⁶⁸ Ibid see strategy (b).

¹⁶⁹ Ibid see strategy (h).

¹⁷⁰ Ibid see strategy (k).

- providing support for the various centres for the exchange of data and information of relevance to the conservation of biological diversity,¹⁷¹
- supporting the sharing of the benefits and knowledge, expertise and technologies in the use of biodiversity, in a fair and equitable manner,¹⁷² and
- facilitating access to genetic resources which are useful in agriculture and medicine.¹⁷³

Apart from designing programmes for the direct conservation of biodiversity as a whole, the policy makes specific provisions for the conservation of some of its components. These include a comprehensive programme for the conservation of natural resources such as land use and soil conservation, wildlife protection and forestry conservation, as well as marine and coastal area resources. It intends to ensure the promotion of sustainable agricultural practices and water usage.¹⁷⁴

Under its forestry and wildlife strategy, the policy sets out a list of goals and the mechanism for implementing them. They include encouraging acts and measures aimed at ensuring a moderate and rational exploitation of forest resources, for both local consumption and foreign exports,¹⁷⁵ strengthening and enforcement of policies and programmes aimed at protecting the forests¹⁷⁶ and the creation of forest reserves, as well as the protection of plants and animal species which are threatened.¹⁷⁷ In order to replenish the diminishing forest stock of the country, the policy seeks to promote and encourage afforestation, reforestation and tree-planting exercises. It gives consideration to the identification of endangered species and ecosystems and taking decisive action to salvage them.¹⁷⁸ A national inventory of forest resources is to be established, alongside germplasm conservation programmes.¹⁷⁹ The policy seeks to employ the combination of the most effective traditional conservation practices with modern methods of conservation.¹⁸⁰

¹⁷¹ Ibid see Strategy (m).

¹⁷² Ibid see strategy (g).

¹⁷³ Ibid see strategy (f).

¹⁷⁴ See generally part (4.6), (4.7), (4.8), (4.9) & (4.10) of the National Policy on Environment.

¹⁷⁵ See strategy (a) under the forestry wildlife and protected areas goal of the policy.

¹⁷⁶ Ibid see strategy (e).

¹⁷⁷ Ibid see strategy (g).

¹⁷⁸ Ibid see strategy (f).

¹⁷⁹ Ibid see strategy (m).

¹⁸⁰ Ibid see strategy (i).

4.4.1.2 National forestry policy

The New National Forest Policy of Nigeria¹⁸¹ was developed to promote the development and proper management of the country's available forest resources which have contributed significantly to the foreign exchange earnings of the country. This is important to align its national goals with the aims and objectives of the various international forestry agreements to which the country is a party.

The guiding principle of the policy revolves around addressing issues such as:

- factors responsible for forest decline
- mobilising local communities, civil societies into forest development, and
- promoting partnerships with the private sector, NGOs and CBOs¹⁸²

Its national objective is to manage the country's forest sector judiciously, to meet the needs of the present generation, without compromising the rights of future generations.¹⁸³ It intends to achieve this by reducing poverty and improving the means of livelihood of its citizens, ensuring food security, biodiversity conservation and other environmental services, and creating roles for the government at all levels, the public, private, NGOs and CBOs.¹⁸⁴

The document contains 31 policy objectives,¹⁸⁵ which focus on the country's national forest developmental plans and its international developmental commitments. It also contains strategies for their implementation and specific areas where priority attention would be given.¹⁸⁶

These objectives include

- forest management
- community participation in and outside forest reserves
- private sector involvement
- biodiversity conservation, national parks and game reserves of conservation interest
- water shed forest and wetland management
- forest research and development, and

¹⁸¹ (n 122 above).

¹⁸² Ibid at 18.

¹⁸³ Ibid. This aligns with the concept of sustainable use, which is one of the key objectives of the CBD

¹⁸⁴ Ibid at 190

¹⁸⁵ Ibid. See Chapter 3 for the policy objectives.

¹⁸⁶ Ibid

- poverty alleviation and food security

The community participation objective is to encourage collaboration with rural communities to ensure sustainable management of forest resources and to ensure adequate protection of forest resources in forest reserves and free areas.¹⁸⁷ Some of the strategies towards ensuring this include the Formation of community or stakeholders' forest committees to share management responsibilities, guarantee the rights of host communities to a fair and equitable share of the revenue and participation in resource control and management, to encourage forest concessionaires and provide rural infrastructure and facilities such as roads, schools and primary health institutions.¹⁸⁸ In the free areas, it intends to encourage sustainable forest management on private lands, to foster a positive impact of forest-dependent activities on the environment, to ensure strict adherence to and compliance with environmental protection and management principles, and to assist in the building and strengthening of the capacity of the local communities, by providing alternative sources of livelihood such as beekeeping and mushroom production.¹⁸⁹

Surprisingly, however, despite the fact that the policy was formulated to facilitate the development of the forestry sector, it makes specific provision for the conservation of the country's biological diversity. Its objectives include the improvement and management of species of fauna and flora within the country, the promotion of scientific studies in areas of research, conservation education, environmental protection and eco-tourism, the promotion of participation in local host communities in forest-related activities and engendering confidence and cordial relationship between host communities, governments and end users.¹⁹⁰ Some of the strategies to be used in achieving these objectives are to identify, delineate and inventorise species and sites of conservation interest, develop *in situ* conservation areas as national parks, game reserves, strict nature reserves, sanctuaries and cultural heritage centers, develop *ex situ* conservation areas such as zoological and botanical gardens, which are to serve as centres for genetic improvement of endangered species, promote herbarium/arboretum establishment,

¹⁸⁷ Ibid at 29.

¹⁸⁸ Ibid.

¹⁸⁹ Ibid.

¹⁹⁰ Ibid at 33.

support the establishment and development as both national and state priority, develop transparent mechanisms for responsibility and benefit sharing among the three tiers of governments, local communities and other stakeholders, enforce forestry legislation, including laws on the export of flora and fauna, and initiate the development and dissemination of relevant awareness and education materials on biodiversity conservation.¹⁹¹

4.4.1.3 Nigeria's Agenda 21

Nigeria's Agenda 21 was drafted in response to global Agenda 21, which was one of the strategies designed to achieve sustainable development by the United Nations Conference on Environment and Development (Earth Summit) in Rio, Brazil, in 1992. The major objectives of Nigeria's Agenda 21 are:

“to integrate environmental consideration into development planning at all levels of government and the private sector, commence a transition to sustainable development, address sectorial priorities, plans, policies and strategies for the major sectors of the economy, and simultaneously foster regional and global partnership.”¹⁹²

Agenda 21, just like the national policy on the environment, discussed above, identifies the various environmental challenges confronting the country, these include biodiversity loss and set out strategies to address them. Some of these strategies are poverty alleviation, afforestation, erosion control, municipal solid waste management, combatting desertification and mitigating the effects of drought, rational use of oil and gas resources, protecting and managing water resources, industrial pollution management, human health and sanitation and disaster preparedness and management.¹⁹³

With regard to ensuring the conservation of biodiversity, the major objective of the Agenda 21 is “to prepare and implement a National Biodiversity Strategy and Action Plan Programme, in compliance with the provisions of the CBD.”¹⁹⁴ The activities set out towards achieving these goals include taking an inventory of all species of flora and fauna within the country's

¹⁹¹ Ibid at 34

¹⁹² See the objectives and strategies of Nigeria's Agenda 21 in the first part of the document.

¹⁹³ See generally the objectives of Agenda 21 of Nigeria.

¹⁹⁴ See the mission statement under the biodiversity management objective of Nigeria's agenda 21.

ecosystems,¹⁹⁵ promotion of both *in situ* and *ex situ* conservation activities by encouraging research activities in biodiversity studies, monitoring and evaluation and education and public enlightenment on the importance of biodiversity protection.¹⁹⁶

It guarantees the rights and protects the intellectual property rights and indigenous knowledge of the local people from prospective bio-prospectors.¹⁹⁷ Other activities included in Agenda 21 for the conservation and sustainable use of biological diversity includes the ratification of the RAMSAR convention,¹⁹⁸ encouragement of international and regional co-operation towards the implementation of its national and international obligations towards the CBD,¹⁹⁹ strengthening of the various national centres for the exchange of information on biological diversity and increasing its biological diversity management capabilities.²⁰⁰ In line with the forest objectives in the National Forest Policy of the country, Agenda 21 intends to ensure an increase in the forest reserves of the country from the present 10% to 25% by the year 2010. In order to achieve this target, a ban was proposed on the exportation of logwood until the desired 25% reserve target is attainable.²⁰¹

4.4.1.4 Nigeria's vision 2010

The major objective of the Vision 2010 committee set up by the Nigerian government in 1996 was to draw up a roadmap towards projecting the country into a “united, industrious, caring and God-fearing democratic society, committed to making the basic needs of life affordable for everyone and creating Africa’s leading economy.”²⁰² This it hoped to achieve by harnessing the potentials of the country resourcefully towards achieving “political stability, economic prosperity and social harmony.”²⁰³

¹⁹⁵ See activity (1) of the goals under biodiversity management.

¹⁹⁶ Ibid see activity (3)

¹⁹⁷ Ibid see activity (6)

¹⁹⁸ Nigeria has ratified the RAMSAR convention and some of the wetlands in the country have been designated as RAMSAR sites.

¹⁹⁹ See activity (7) of the goals under biodiversity management.

²⁰⁰ Ibid see activity (4)

²⁰¹ See the mission statement of the afforestation objective of Nigeria’s Agenda 21.

²⁰² World resource institute – Nigeria’s vision 2010 at <http://projects.wri.org/sd-pams-database/nigeria/vision-2010> (accessed on 23/5/2013).

²⁰³ Ibid.

The fundamental objective of the environmental agenda in the Vision 2010 report is “to have a safe and healthy environment that secures the economic and social well-being of the present and future generation.”²⁰⁴ The policy addresses various environmental issues affecting the country such as environmental planning, desertification and drought, pollution from oil and other industrial activities, and human settlement. It provides for the conservation and sustainable use of biodiversity.²⁰⁵ Its biodiversity objective is to ensure absolute protection of the country’s flora and fauna.²⁰⁶ It hopes to achieve this by taking an inventory of threatened species of flora and fauna and ecosystems which are threatened and making provisions for their conservation. It aims to promote both in situ and ex situ conservation approaches towards conservation, increase the number of protected areas and to embark upon educational and public awareness campaigns on the importance of biological diversity and the need to conserve it.

Water resources were a high priority in the Vision 2010. It intends to ensure optimal development of water resources on an environmentally sound and sustainable basis for food production, water supply, hydropower generation, transportation and recreational uses.²⁰⁷ In addition to this, it intends to enforce compliance with the water resources decree of 1993,²⁰⁸ which was promulgated to promote the optimum planning, development and use of water resources in the country.²⁰⁹ The problem of water hyacinth and other invasive alien species was addressed in the policy. It intends to take an inventory of affected areas and provide for means of controlling them, while encouraging sub regional co-operation with neighbouring countries towards controlling trans-boundary movement of these species.

²⁰⁴ Federal Republic of Nigeria (1997) Ecology and Environment, in: Report of the Vision 2010 at.100.

²⁰⁵ Ibid at 101 & 102.

²⁰⁶ Ibid.

²⁰⁷ Ibid.

²⁰⁸ See the Water Resources Management Decree No 101 1993 ACT CAP. W2 L.F.N.2004.

²⁰⁹ Section 1 (a), (b), (c) & (d) of the Water Resources Act 2004 vests the control of all surface and ground water, as well as any water course affecting more than two states in the federal government, who shall: (i) promote the optimum planning, development and use of Nigeria’s water resources; (ii) ensure co-ordination of such activities as are likely to influence the quality, quantity, distribution, use and management of water; (iii) ensure the application of appropriate standards and techniques for the investigation, use, control, protection, management and administration of water resources; and (iv) facilitate technical assistance and rehabilitation for water supplies.

To conserve the country's forest resources and ensure its attainment of the 25% target, the policy intends to strictly control and reduce the rate of foreign export and international trade in logwood and also encourage the involvement of indigenous people in forest management practices and conservation.

It is regrettable that Vision 2010, like every other national developmental plan before it, has not been adequately implemented and seems to have died along with the Nigerian president who initiated it.²¹⁰ A new national development plan (Vision 20, 20 20) have been drafted and is in its first medium term implementation phase.²¹¹

4.4.2 Integration of biodiversity conservation and sustainable use

Article 6 (b) requires parties to integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies. In addition to the provision of Article (a) above, countries are expected to include biodiversity conservation into relevant sectoral or cross-sectoral plans and decision-making. This would require assessing the impacts of these sectors on biodiversity conservation.

In compliance with this provision of the CBD, the federal government has integrated biodiversity conservation and sustainable use into the objectives and programmes of its agencies and institutions, spreading them across different sectors. Examples are the Science, Technology and Innovation Policy 2012 of the Federal Ministry of Science and Technology, the National Environmental Standards and Regulations Enforcement Agency Act 2007, the National Agriculture Policy 2010 and the objectives of the Federal Ministry of Environment and Urban Development. These will be discussed below.

4.4.2.1 National Environmental Standards and Regulations Enforcement Act 2007

The National Environmental Standards and Regulations Enforcement Agency bill was passed into law by the National Assembly in 2007, it succeeds the Federal Environmental Protections

²¹⁰ O.S. Ayodele, F.N Obafemi, F. S. Ebong 'Challenges facing the achievement of Nigeria Vision 20: 2020' (July 2013) *Global Advanced Research Journal of Social Science (GARJSS)* Vol 2(7) pp.143-157 at 146. See also I. O. Marcellus 'Development Planning in Nigeria: Reflections on the National Economic Empowerment and Development Strategy (NEEDS) 2003-2007' (2009) *J Soc Sci* 20(3): 197-210 at 202.

²¹¹ See Nigeria Vision 20: 2020 The 1st NV20:2020 Medium Term Implementation Plan (2010 – 2013).

Agency (FEPA) Act.²¹² It transfers its powers to the new agency created by it, as well as the status of being the country's leading environmental protection agency. This goes with the responsibility of overseeing all matters relating to environmental protection and the enforcement of all regulations, both national and international, within the country.

Section 2 of the Act provides that the Agency shall, subject to the provisions of this Act:

“have responsibility for the protection and development of the environment, biodiversity conservation and sustainable development of Nigeria's natural resources in general and environmental technology, including coordination and liaison with relevant stakeholders within and outside Nigeria on matters of enforcement of environmental standards, regulations, rules, laws, policies and guidelines.”

The duties of the Agency are contained in section 7 of the Act, and are centred on environmental protection and biological diversity conservation. In relation to its environmental protection commitments, it is expected to ensure compliance with laws, guidelines, policies and standards on environmental matters;²¹³ and to co-ordinate and liaise with stakeholders within and outside Nigeria on matters of environmental standards, regulations and enforcement.²¹⁴ In furtherance of its responsibility to conserve the country's biodiversity, the Act intends to ensure compliance with guidelines and legislation on sustainable management of the ecosystem, biodiversity conservation and the development of the country's natural resources,²¹⁵ among other responsibilities imposed upon the Agency by the Act.²¹⁶ The Agency is also saddled with the duty of implementing the various international conventions (such as the CBD), which the country has ratified.²¹⁷

²¹² Sec 36 NESREA Act 2007 which repeals the FEPA Act. The Federal Environmental Protection Agency was the flagship clearing house, as well as the regulatory authority for environmental protection in the country. It was set up after the discovery of toxic waste which was dumped in Koko, in the present-day Delta state in the Niger delta region of the country in 1988. Hitherto there has not been any specific agency saddled with the responsibility of environmental protection within the country.

²¹³ Sec 7 (a) NESREA Act 2007.

²¹⁴ Ibid Sec 7(b).

²¹⁵ Ibid Sec 7(e).

²¹⁶ The guidelines and regulations referred to in this provision include the biological diversity related legislations and policy guidelines in the country, such as the Sea Fisheries Act and the Regulations made pursuant to it, the Endangered Species (Control of International Trade and Traffic) Act, and the National Park Act among others. All these will be discussed in subsequent sections.

²¹⁷ Section 7 (c) of the NESREA Act provides that “it is the responsibility of the Agency to enforce compliance with the provisions of international agreements, protocols, conventions and treaties on the environment, including climate

4.4.2.2 The National Agricultural Policy of the Federal Ministry of Agriculture and Urban Development

Agriculture plays a significant role in the Nigerian economy, contributing approximately 42% of the gross domestic product (GDP) in 2008.²¹⁸ However, the industry is still largely subsistent and undeveloped,²¹⁹ leading to the continuation of activities which pose serious threats to its agro biodiversity. These activities, which include indiscriminate expansion of farm lands into forest areas, illegal logging and trade in bush meat, have drastically reduced biodiversity in and around the various farmlands within the country.²²⁰

The country has a long history of agricultural policies, dating back to the colonial era.²²¹ The most recent, which is the agricultural policy contained in the National Economic and Empowerment Development Strategy (NEEDS) programme, formulated in 2003, will be the focus of the following discussion:

Going by the wording of the policy, it is evident that the government intends to step up its activities in the agricultural industry in order to ensure food security for its growing population. It gives consideration to ensuring sustainable use of agricultural resources. One of the major objectives of this policy is to:

“Promote rational use of agricultural resources, improved protection of agricultural land resources from drought, desert encroachment, soil erosion and flood, and the general preservation of the environment for the sustainability of agricultural production.”²²²

change, biodiversity, conservation, desertification, forestry, oil and gas, chemicals, hazardous wastes, ozone depletion, marine and wild life, pollution, sanitation and such other environmental agreements as may from time to time, come into force”.

²¹⁸ See Nigeria’s National Bureau of Statistics official website at <http://www.nigerianstat.gov.ng/> (accessed on 16/04/2013).

²¹⁹ B. T. Omonona & B. A. Adefisayo ‘Institutional and Technical Factors Influencing Sustainable Agricultural Practices in Nigeria’ (November 2012) *International Journal of Science and Technology* Volume 1 No. 11.

²²⁰ United States agency for international development ‘sustainable practices in agriculture for critical environments (SPACE) conservation and livelihood in cross rivers state, Nigeria’. Final report may 2007

²²¹ J. C. Iwuchukwu & E. M. Igbokwe ‘Lessons from Agricultural Policies and Programmes in Nigeria’ (2012) *Journal of Law, Policy and Globalization* Vol 5 at 12

²²² See the objectives of the New Agricultural policy of Nigeria. See also P. Sanyal & S.Babu ‘Policy Benchmarking and Tracking the Agricultural Policy Environment in Nigeria’.(February 2010) Nigeria Strategy Support Programme (NSSP) Report No NSSP 005 at 7

In order to reduce wastage of agricultural resources, which is associated with subsistence farming practices, the policy intends to promote an increased application of modern technology in the process of agricultural production. It provides for rural infrastructural development for rural dwellers, to improve their quality of life. This will, in turn, relieve the biodiversity around their environments from the pressure of over-exploitation. It will be recalled that the impact of poverty on biodiversity has been discussed in Chapter 2 of this research work. An improvement in the livelihood of the rural dwellers would invariably relieve the biological resources around them from the pressure of over-exploitation.²²³

4.4.2.3 The Science, Technology and Innovation policy of the Federal Ministry of Science and Technology

The policy, which was initiated in 2012, is meant to serve as a national guide to the Federal Ministry of Science and Technology (FMST) and its subsidiary agencies. The scope of the policy cuts across different areas of the country's national life, such as human capital development, agriculture, industrial growth, communication technology and the environment.²²⁴ Under its research and development priority, water and its resources is listed as one of its specific sectoral objectives. It intends to promote the use of safe, clean, efficient and sustainable water technology for national development and the promotion of research and development into water conservation and utilisation techniques, both for domestic and other usage.²²⁵

Under its environmental science and technology objective, the policy intends to promote the integration of environmental concerns into all development policies and to ensure that the public are aware of the scientific implications of their actions on the environment.²²⁶ In addition to this, it intends to pursue generally environmentally sustainable forest management practices.²²⁷

²²³ 2011 to 2020 United Nation Decade of Biodiversity 3(living in harmony with nature) Biodiversity for Development and Eradication of Poverty at <https://www.cbd.int/undb/media/factsheets/undb-factsheet-development-en.pdf> (accessed on 14/10/2013).

²²⁴ See page 3 of the Science, Technology and Innovation Policy of the Federal Ministry of Science and Technology 2012 for a comprehensive list of all the areas covered by the policy.

²²⁵ Ibid at 38.

²²⁶ Ibid at 40.

²²⁷ Ibid at 55.

4.4.2.4 The Federal Ministry of the Environment and Urban Development

The Federal Ministry of the Environment and Urban Development was established in 1999 and given the responsibility of overseeing every matter relating to securing the country's environment. The mission of the Ministry is to protect the country's environment, conserve its natural resources and ensure their sustainable use.²²⁸ It also gives considerable attention to biodiversity conservation and prudent use of the country's resources. Some of its strategies towards achieving these are to:

- prepare a comprehensive national policy for the protection of the environment and conservation of natural resources, including procedure for environmental impact assessment of all developing projects,
- advise the federal government on national environmental policies and priorities, the conservation of natural resources and sustainable development and scientific and technological activities affecting the environment and natural resources,
- promote co-operation in environmental science and conservation technology with similar bodies in other countries and with international bodies connected with the protection of the environment and the conservation of natural resources, and
- cooperate with federal and state ministries, local government, statutory bodies and research agencies on matters and facilities relating to the protection of the environment and the conservation of natural resources, among other functions.”²²⁹

Going by the discussion of the implementation of Article 6 of the CBD by Nigeria, it would be right to state that ‘on paper,’ Nigeria has complied with the provisions of article 6 of the CBD by drawing up policies and programmes towards ensuring the conservation of biodiversity. However, all of the policies discussed above are ordinary frameworks and lack the necessary legal backing to ensure their implementation. None has been transmitted into biodiversity conservation legislation, thus making them unenforcable and not binding. This robs them of the requisite legal foundation upon which they can be properly implemented.

²²⁸ See the official website of the Federal Ministry of Environment and Urban Development at <http://environment.gov.ng/about-moe/profile/> (accessed on 14/03/2013).

²²⁹ Ibid.

Lack of adequate implementation of policies has been the bane of the Nigerian government over the years. Despite the existence of these policies, which include strategies for biodiversity conservation, the rate of biodiversity loss has continued to rise, unabated. For instance, Nigeria is reported to have lost 21% of its forest between 1990 and 2005, when compared with a total of 3.3% lost worldwide.²³⁰ The rate of deforestation in the country is estimated to be around 3.5% a year, translating to about 350 000 to 400 000ha of forest being lost in a year.²³¹ Two deductions can be made from this situation: it is either the strategies contained in the forest, or biodiversity related policies are ineffective, or have not been adequately implemented.²³²

In South Africa, for example, the national policies on biodiversity conservation are all backed up by corresponding legislation.²³³ For instance, the National Environmental Management Act²³⁴ directs all national departments listed in its Schedule One and Two²³⁵ to prepare an environmental management plans at least every four years. In order to provide guidance on what is expected of these government departments, the Act spells out the minimum requirement as to the content of these plans, as well as modes of monitoring and ensuring compliance with their implementation.²³⁶ Failure by these agencies to comply with the provisions of NEMA, which is South Africa's environmental constitution, will amount to breach of a very fundamental law of the country, which would likely attract severe penalties.

²³⁰ D. Ladipo 'The state of Nigeria's forest'. International Institute for Tropical Agriculture issue 4.

²³¹ Ibid.

²³² The National Policy on Environment, Vision 2010, Nigeria's Agenda 21, and the National Forest Policy (which all contains strategies for forest conservation) has been in existence before this report in 2005. Therefore, if the ratio of forest loss as at 2005 is 3.5%, it shows that either the policies are not effective to conserve the country's biodiversity, or they are not being properly implemented.

²³³ South Africa's policies and action plans on environmental protection and biodiversity conservation derive their effectiveness from either NEMA or the Biodiversity Act.

²³⁴ See chapter 3, section 50 of the National Environmental Management Act of South Africa 1998.

²³⁵ The activities of the following national departments listed in the first schedule of NEMA are considered to affect the environment. They are the Department of Environmental Affairs and Tourism, the Department of Land Affairs, the Department of Agriculture, the Department of Housing, the Department of Trade and Industry, the Department of Water Affairs and Forestry, the Department of Transport and the Department of Defence. The second schedule contains a list of national departments which exercises functions that involve the management of the environment, they are the Department of Environmental Affairs and Tourism, the Department of Water Affairs and Forestry, the Department of Minerals and Energy, the Department of Land Affairs, the Department of Health, and the Department of Labour. See also M. Kidd 'Environmental law' second edition Juta 2011 at 40

²³⁶ Section 16 of NEMA 1998.

This approach can also be adopted by Nigeria in order to align all the various biodiversity conservation strategies contained in the policies discussed above and ensure a uniform system of monitoring compliance and implementation.

4.5 Article 8 - In situ conservation of biological diversity

4.5.1 Establishment of protected areas

Article 8 (a) requires parties to the CBD to establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity. This article of the CBD provides a comprehensive approach which can be adopted in order to ensure the conservation of biodiversity within their natural ecosystems. This is referred to as *in situ* conservation.²³⁷ One of the fundamental strategies for achieving this is through the establishment of protected areas in sites which are rich in biodiversity, but are vulnerable, and/or likely to be threatened as a result of human exploitation.²³⁸

The International Union for the Conservation of Nature (IUCN) and the World Commission on Protected Areas (WCPA) defined protected areas as:

“A clearly defined geographical space recognized, dedicated and managed, through legal and other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.”²³⁹

Protected areas have been discovered to play a long-term positive role in achieving the *ex situ* conservation objectives of the CBD.²⁴⁰ Similarly, its importance is reflected in the environmental goal of the United Nations Millennium Development Goals. In order to determine the level of progress made towards achieving its environmental sustainability objective,²⁴¹ the ratio of

²³⁷ See Article 2 (use of terms) of the Convention for Biological Diversity.

²³⁸ See Article 8 (a) of the CBD.

²³⁹ N. Dudley Guidelines for applying protected area management categories. Gland, Switzerland IUCN.

²⁴⁰ (n 92 above) at 5. See also Task Force on Economic Benefits of Protected Areas of the World Commission on Protected Areas (WCPA) of IUCN, in collaboration with the Economics Service Unit of IUCN (1998). *Economic Values of Protected Areas: Guidelines for Protected Area Managers*. IUCN, Gland, Switzerland, and Cambridge, UK. Xii+52pp at 3 at <https://portals.iucn.org/library/efiles/edocs/PAG-002.pdf> (accessed on 12/12/2013).

²⁴¹ See goal NO 7 of the United Nations Millennium Development Goals 2000.

protected areas set up to conserve biodiversity is considered to be a key factor.²⁴² As at January 2009, the total number of the world's protected areas, made up of terrestrial and marine areas, rose to 122 512 which amounts to 12.1% of the earth's total surface area.²⁴³ This is quite commendable, when compared to a meagre 1.5% in the 1960s.²⁴⁴

The Nigerian authorities have taken steps towards ensuring the conservation of its biodiversity within their natural ecosystem. This is reflected in the establishment of national parks and other protected areas in different parts of the country. Protected areas in Nigeria are the national parks, forest reserves, biosphere reserves, strict nature reserves, games reserves and wildlife sanctuaries, as well as community forests.²⁴⁵ Most of the national parks and games reserves were originally established as forest reserves during the colonial era, before being partitioned and transformed into game reserves in order to conserve the wildlife population for posterity, as well as provide a viable source of protein supplement for the people.²⁴⁶

There are currently seven national parks in Nigeria with a total land area of 22 206 24 sq.km square.²⁴⁷ The Yankari National Park, which has hitherto been under the control of the National Park Service has been handed over to the Bauchi state government as a game reserve.²⁴⁸ National parks currently under the management of the national parks service are the Chad Basin which covers a total land area of 2 258 km square the Cross River with a total land coverage area of 4 000km square, Gashaka-Gumti with 6 731km square, Kanji Lake with 5 382km square, Okumu at 202.24km square, Kamuku with 1 121km square and the Old Oyo Park with a land coverage of 2 512km square.²⁴⁹ The country also has 28 games reserves which are divided into wildlife

²⁴² B. Lausche, 'Guidelines for Protected Areas Legislation' (2011). IUCN, Gland, Switzerland. Xxvi + 370 pp. IUCN Environmental Policy and Law Paper No. 81 at 3.

²⁴³ Ibid at 2.

²⁴⁴ Ibid.

²⁴⁵ (n 93 above).

²⁴⁶ Ibid at 17.

²⁴⁷ See the official website of the National Park Service of Nigeria at <http://www.nigeriaparkservice.org/index.php> (accessed on 19/03/2013). This falls short of the stipulations of the Agenda 21 which advocates for the grant of protective cover to at least 25 percent of the total land area of every country.

²⁴⁸ (n 93 above) at 18.

²⁴⁹ Ibid.

sanctuaries and parks, 445 forest reserves and 12 strict nature reserves.²⁵⁰ The strict nature reserves are preserved solely for the conduct of scientific research and other educational purposes. Generally, activities such as felling of trees and hunting are prohibited within these designated areas.

Some very important species of plants and animals can be found in the national parks. For example, the Cross Rivers National Park has been categorised among the 25 United Nations acclaimed biodiversity hotbeds in the world.²⁵¹ It is also home to unique plants species which include the *Prunus africana*, as well as the *Anceistociadus korupensis*, which is claimed to be potent in finding a cure for HIV/AIDS and prostate cancer.²⁵² Among the animal community within this park is the most endangered species of gorilla on earth (*Gorilla gorilla diehli*), as well as the bare headed rock fowl.²⁵³

Some of these protected areas are poorly managed²⁵⁴ and offer very little to protect the biodiversity within them. For example, the rural communities living within the Cross Rivers National Park is reported to have extended considerably.²⁵⁵ The Afi mountain wildlife sanctuary has been encroached by the 16 communities around it and has set up over 600 illegal farms within it.²⁵⁶

4.5.2 Development of guidelines for the establishment and management of protected areas

Article 8 (b) provides that parties are to develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity. In addition to the creation of protected areas, the

²⁵⁰ See the Federal Ministry of Environment 'National Forest Programme Nigeria', December, 2004, available at <http://foris.fao.org/static/pdf/nfp-and-forest-policy-documents/nigeria-nfp-2004.pdf> accessed on 26/03/2013

²⁵¹ See the official website of the Cross Rivers National Park at <http://crnp.nigeriaparkservice.org/> (accessed on 25/03/2013).

²⁵² Ibid.

²⁵³ Ibid.

²⁵⁴ B. A. Usman & L. L. Adefalu 'Nigerian forestry, wildlife and protected areas: Status report' (2010) *Tropical conservancy biodiversity* 11 (3 & 4) at 45.

²⁵⁵ World Conservation Society: Nigeria at <http://www.wcs.org/where-we-work/africa/nigeria.aspx> (accessed on 20/11/2013)

²⁵⁶ Ibid.

Convention advocates for the setting up of the necessary guidelines and procedures towards the selection of areas requiring protection. It also provides for the establishment of a management structure for them.

In Nigeria, the provisions of the National Park Act and the Forestry Act, as well as the forestry laws of the various states, all provide structure for the establishment and management of protected areas set up by it. The National Park Service Act²⁵⁷ sets up the National Park Service of Nigeria which is charged with the responsibility of preserving and ensuring the conservation of the wild animals and plants within the territories of the national parks. Some of the objectives of the service are:

- The conservation of selected and representative examples of wildlife community in Nigeria²⁵⁸ and the establishment of an ecologically and geographically balanced network of protected areas under the control of the federal government,²⁵⁹
- protection of endangered species of flora and fauna within their natural habitat,²⁶⁰
- conservation of wildlife throughout the country to sustain the diversity of species at a commensurate proportion with their use,²⁶¹
- preservation of the scenic, natural, scientific and recreational values of the parks,²⁶²
- protection and sustainability of the wetlands and other water catchment areas,²⁶³
- control the influx of dangerous vertebrate species,²⁶⁴
- implementation of relevant international treaties and agreements related to the protected areas and wildlife management and conservation to which the country is a signatory,²⁶⁵
- education of the public on the culture of wildlife and nature conservation,²⁶⁶ and
- the conservation of biological diversity in the country.²⁶⁷

²⁵⁷ The National Park Service Act of Nigeria CAP N65 L.F.N 2004.

²⁵⁸ Sec 6 (a) National parks service Act.

²⁵⁹ Ibid Sec 6 (b).

²⁶⁰ Ibid Sec 6 (c).

²⁶¹ Ibid Sec 6 (d).

²⁶² Ibid Sec 6 (e).

²⁶³ Ibid Sec 6 (f).

²⁶⁴ Ibid Sec 6 (g).

²⁶⁵ Ibid Sec 6 (h).

²⁶⁶ Ibid Sec 6 (i).

²⁶⁷ Ibid Sec 6 (j).

According to Article 8 (b) of the CBD, the Act provides guidelines for the selection, establishment and management of protected areas. It gives the President of Nigeria the power to declare any area in the Federation he may deem fit, as a National Park.²⁶⁸ It also provides for the setting up of a management committee which would have the responsibility of ensuring that the national parks are focused on achieving the objective of protecting and managing the flora and fauna within them.²⁶⁹ It has a management plan which contains prescribed management principles, to which the management committees of the various national parks must conform.²⁷⁰

Nigeria has large areas of forest and woody vegetation, comprising the high forests, woodlands and bush lands, as well as trees which are found within the various farmlands and forested areas.²⁷¹ They are either situated in forest reserves, free areas or conservation areas.²⁷² A free forest area comprises forest areas which are not under the strict management and control of the forestry department and permission must be sought before the forest resources within these areas can be exploited.²⁷³

The old Forestry Act,²⁷⁴ which was the national legislation for the management and conservation of the country's forest resources, empowers the president, upon the advice of the minister, to declare any land a forest reserve for its conservation and preservation, whenever it is discovered that there is a need to protect the growth of forest on such particular piece of land.²⁷⁵ It provides for the establishment of local authority forest reserves and local authority protected areas, which

²⁶⁸ Section 18 (1) (a) of the National Park Service Act.

²⁶⁹ Ibid Sec 21 & 22 (a). This is in line with Article 8(b) of the CBD, which provides for the establishment of a management committee for the purpose of administering the protected areas.

²⁷⁰ Ibid Section 25.

²⁷¹ P. I. Oni (n 105 above) at 11 These functions includes the production of woods and its component, food production, protection of the environment from the effects of climate change by acting as carbon sinks, maintenance of soil stability.

²⁷² A. Olatunbosun 'Exploring forest reserve resources and the impact of environmental challenges: the role of penal policy in Nigeria' (2008-209). *The Calabar law journal* volume xii & xiii at 45.

²⁷³ Olatunbosun (n 97 above) at 2.

²⁷⁴ Forestry Act CAPS 507 Vol. xxvi Laws of the Federation of Nigeria 1990. This Act came into existence in 1938. A new National Forestry Act was drafted in 2006, but has not been passed into law by the Nigerian National Assembly. The lack of a national forest law has been identified as one of the major factors working against sustainable forest management in the country. See the national forest policy (n 122 above) at 20.

²⁷⁵ Section 4 of the Forest Act CAP 507 Vol. xxvi Laws of the Federation of Nigeria 1990.

would be administered by the local authority, subject to the overall supervision of the federal minister.²⁷⁶ Similarly, where it is discovered that a piece of land within a local community is endowed with forest vegetation, the people within such community may request that it be declared a communal forest reserve by their local authority.²⁷⁷

Certain activities within the forest reserves are prohibited by the Act and contravention attracts various sanctions, ranging from payment of fines to terms of imprisonment. These acts include trespass, taking forest produce, pasture grazing, hunting or fishing within the reserves, cultivating the soil within the reserves, setting fire to grass or kindling a fire without taking precautions to prevent its spread among other actions.²⁷⁸

At the state level, each of the states within the country has its own forestry laws, for the purpose of declaring, administering, regulating, and protecting the forests resources within its jurisdiction.²⁷⁹ These laws are generally similar, though with slight differences (which reflects the challenges of their respective states). However, they all have the overall objectives of conserving the forest reserves within their territories. The Forest Law of Lagos state²⁸⁰ for example, empowers the commissioner in charge of forestry affairs to constitute any land as a government protected forest whenever it appears necessary to protect the forest growth on such land.²⁸¹

In common with the Forest Act, the law grants local governments within the state the power to declare a local government protected forest for the purpose of preserving forest growth on a particular land. A native community can request that their local government authorities declare any land occupied by them as a communal forest area. The responsibility for the management and control of the communal forest area rests upon the native community, while the local

²⁷⁶ (n 272 above) at 62.

²⁷⁷ Ibid.

²⁷⁸ See section 47 of the Forest Act for a comprehensive list of all the prohibited activities within the forest reserve.

²⁷⁹ (n 272 above) at 61.

²⁸⁰ Forest Law (W. R. L. 1959, Cap. 38. W.N. 17 of 1960. L.S.L.N. 16 of 1972).

²⁸¹ Section 4 of the Forest Law of Lagos state.

government authorities reserve the powers to make rules and regulations in relation to the management and protection of such areas.²⁸²

4.5.3 Management of biological resources within and outside the protected areas

Article 8 (c) enjoins parties to regulate or manage biological resources important for the conservation of biological diversity, whether within or outside protected areas, with a view to ensuring their conservation and sustainable use. Here the Convention advocates for the protection of biological resources both within and outside the protected areas. This is expected to enhance the goal of conservation, which necessitated the creation of these protected areas in the first place. This would be achieved by the enactment of suitable laws and regulations to regulate activities around these areas.

To achieve this in Nigeria, The National Park Service Act, in addition to making provisions for the management of biological resources within the protected areas also empowers the National Park Service authorities, acting in consonance with the surrounding indigenous community, to declare a buffer zone over areas surrounding a national park²⁸³ in order to protect biodiversity deposits available within these areas. Generally, the creation of a buffer zone around a protected area does not necessarily prevent the neighbouring communities from using the resources within these areas. However, certain restrictions may be put in place in relation to their usage. These restrictions will allow for their use, but in a sustainable and environmental friendly manner.²⁸⁴ Similarly, the creation of a buffer zone cannot, in itself, be effective without the understanding, support and co-operation of the neighbouring community. Therefore, by giving them an opportunity to participate in matters necessitating its creation, as well as other decision making processes, the purpose for which the buffer zones was created may be achieved.²⁸⁵

By this provision, the Act complies with Article 8 (c) of the Convention, which provides for the regulation and management of important biological resources, both within and outside protected

²⁸² Section 27 of the Forest Law of Lagos state

²⁸³ Sec 46 (1) National Park Service Act

²⁸⁴ A-Z areas of biodiversity importance available online at <http://www.biodiversitya-z.org/areas/10/> (accessed on 10/07/2013).

²⁸⁵ E. E. Ezebilo 'Community Forestry as Perceived by Local People around Cross Rivers National Park, Nigeria' (2012) (*Springer Journal on Environmental Management*) at 207.

areas, and ensures the promotion of environmentally sound and sustainable development activities in those areas.²⁸⁶

It is rather unfortunate, however, that these provisions have not been backed up by proper implementation and enforcement. There have been reported cases of encroachment of some of these protected areas by neighbouring communities.²⁸⁷ This contravenes the objective of the CBD and defeats the purpose of the creation of buffer zones.

The low level of participation, due to ignorance by the neighbouring communities about the long-term benefits of biodiversity conservation, constitutes a major obstacle to achieving the objectives of these buffer zones.²⁸⁸ This has resulted in the exploitation of such protected areas by these communities, most of whom regard the establishment of protected areas as a deliberate attempt to deprive them of the forest resources, from which they have traditionally derived their livelihoods. A continuous programme aimed at enlightening the public on the advantages of conservation (most especially the communities around these protected areas) will go a long way to strengthening the *in situ* conservation efforts of the government. There are various incentives which can be extended to such rural communities in order to support the *ex situ* conservation programmes. This will be discussed under the implementation of Article 11 of the CBD by Nigeria.

4.5.4 Protection of ecosystems and natural habitats

Article 8 (d) requires that parties should promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in their natural surroundings. This provision of the CBD restates the essence of protected areas which is the conservation of biodiversity in their natural environment. While discussing the implementation of Article 8 (a) of the CBD by Nigeria, the best medium of conserving biodiversity is carried out within their natural ecosystems. Destruction of these ecosystems would defeat the essence of *in situ* conservation.

²⁸⁶ See Article 8 (c) & (e) of the Convention for Biological diversity 1992.

²⁸⁷ See (n 251) generally for incidences of communal encroachment into protected areas in Nigeria.

²⁸⁸ Ibid see also V. C. O. Eneji, Qi Gubo, F. I. Okpiliya, E. J. Aniah, D. D. Eni and D. Afangide 'Problems of public participation in biodiversity conservation: the Nigerian scenario(December 2009) *Impact Assessment and Project Appraisal* volume 27 number 4 27:4, 301-307 at 303.

The Nigerian government, in compliance with this provision has developed some programmes and projects aimed at ensuring the protection of endangered ecosystems. These are the National Biodiversity Strategy and Action Plan (NBSAP) and the Shelter Belt and Ecological Disaster Relief Programme, which provide help to certain areas that are vulnerable to disaster, to confront issues such as flooding, erosion, oil spills, pollution and desertification.²⁸⁹ Other programmes are the Tropical Forestry Action Programme, the National Forestry Action Plan, the Environmental Management Projects (EMP), which was established to protect all endangered and threatened ecosystems and is funded by the World Bank,²⁹⁰ as well as linkage programmes with some academic institutions. For example, the defunct Federal Environmental Protection Agency (FEPA)²⁹¹ had a linkage programme with the University of Maiduguri to provide training in environmental and resource management, vegetation and land use, as well as soil and water management.²⁹²

In addition to these, the federal government established the Ecological Funds in 1981 to combat the various ecological problems in the country. These funds have often been misappropriated and sometimes diverted to other activities which have of no relevance to their statutory purpose.²⁹³

4.5.5 Promote environmentally sound and sustainable development around protected areas

Article 5 (e) requires that parties are to promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas. This provision is quite similar to Article 8 (c) discussed above. They both aim to achieve the protection of biodiversity, within and outside the protected areas.²⁹⁴ As stated earlier while discussing the implementation of Article 8 (c) by Nigeria, the National Park Service Act provides for the creation of buffer zones wherever necessary, to promote environmentally sound

²⁸⁹ (n 96 above) at 50.

²⁹⁰ Natural resources aspects of sustainable development in Nigeria at <http://www.un.org/esa/agenda21/natinfo/countr/nigeria/natur.htm> (accessed on 12/12/2013).

²⁹¹ The Federal Environmental Protection Agency FEPA has now been transformed to the National Environmental Standards and Regulation Agency (NESREA).

²⁹² This training is fundamental to the implementation of this article, since land and water are the major habitats for biological resources.

²⁹³ See Better uses for ecological fund reported in the vanguard newspaper of 26th July 2011 at <http://www.vanguardngr.com/2011/07/better-uses-for-ecological-fund/> (accessed on 11/12/2013).

²⁹⁴ See article 8 (c) of the CBD discussed earlier.

practices and ensure sustainable culture around the protected areas. This is a result of the need to protect these areas from excessive exploitation by surrounding communities. The management plans of some of these national parks, for example the Oban national park, include strategies for sustainable development in areas around the park.²⁹⁵

4.5.6 Restoration of degraded ecosystems and recovery of threatened species

Article 8 (f) requires parties to the CBD to rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, *inter alia*, through the development and implementation of plans or other management strategies. Restoration and rehabilitation of degraded ecosystems is fundamental to achieving the *in situ* objective of biodiversity conservation. It has been described as the “process of assisting the recovery of an ecosystem that has been degraded or destroyed.”²⁹⁶

Oil spills have earlier been identified as a major contributing factor to ecosystem degradation in the oil rich Niger delta region of Nigeria.²⁹⁷ The region has been described as one of the world’s most severely impacted ecosystems,²⁹⁸ with its restoration likely to be the world’s biggest long-term oil clean-up exercise ever undertaken.²⁹⁹

In order to ensure ecosystem restoration in the oil-producing region, the Department of Petroleum Resources (DPR) introduced the Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGSPIN) in 1992, these were reviewed in 2002. The guidelines contain various regulations, which specifically provide for the restoration of sites and ecosystems that are adversely impacted by oil. However, its provisions are not explicit and precise, and have

²⁹⁵ J.A. McNelly, J. Harrison, P. Dingwall ‘Protecting nature regional reviews of protected areas’. IUCN. Gland, Switzerland and Cambridge, UK. Viii+402pp at 63.

²⁹⁶ The SER International Primer on Ecological Restoration Version 2 (2004) Society for Ecological Restoration International Science and Policy Working Group. Available online at www.ser.org/pdf/primer3.pdf (accessed on 22/7/2012)

²⁹⁷ See the causes of biodiversity loss in Nigerian in Chapter 3

²⁹⁸ T. O.T. Imoobe & T. Iroro ‘Ecological restoration of oil spill sites in the Niger Delta, Nigeria’ (2009) *Journal of Sustainable Development in Africa* Volume 11, No.2 at 55.

²⁹⁹ UNEP Ogoniland oil assessment reveals extent of environmental contamination and threats to human health. Available online at <http://www.unep.org/newscentre/default.aspx?ArticleID=8827&DocumentID=2649> (accessed on 01/12/2013).

been described by Imoobe *et al*³⁰⁰ as ill-defined, ambiguous and vague. They do not contain specification as to the nature, approach and extent to which restoration is to be carried out.³⁰¹

The practical aspect of ecological restoration is being carried out by the government and some NGOs within the country, which are at the forefront of ecosystem restoration activities. On the part of the government, for instance, the Forest Research Institute of Nigeria has carried out a number of restoration activities across the country. These include the afforestation programmes in some regions in the north, and the reclaiming of ecosystems lost to natural disasters in the eastern part of the country.³⁰²

Some of the NGOs include the Nigerian Conservation Foundation and the Centre for Environment, Human Rights and Development (CEHRD).³⁰³ The Niger Delta Conservation and Sustainable Development Project, an initiative of the John D and Catherine T. MacArthur Foundation, started a project aimed at ensuring biodiversity conservation and sustainable development in the Niger delta region. The focus of their project in Delta state³⁰⁴ is on the regeneration of a degraded forest.³⁰⁵ In addition to these, there are reports from some of the multinational oil companies operating within this region, which suggest that some form of restoration activities are being carried out.³⁰⁶

³⁰⁰ See Imoobe *et al* (n 298 above) at 58 The guideline only contains provisions like “it shall be restored to its original state

³⁰¹ Ibid. According to them, “Inasmuch as restoration is to the previous state of the ecosystem, the return of ecosystem processes and function is often the intention of restoration. A statement that does not define the likely process of return, and whether a reference model is to be used or not, as well as the determination of prior states is too vague to achieve what restoration attempts to achieve.” For further inadequacies in the provisions of the EGSPIN Regulations, see A. I. Ofuani Environmental Regulation of Offshore (E&P) Waste Management in Nigeria: How Effective?’ (2011) Volume 7/2 (Law, *Environment and Development Journal* p. 79-97 at 83, 84, 85, and 86.

³⁰² J. A. Ogunjobi, S.O. Badejo, A. J. Meduma & S. K. Halidu ‘Experiences of a research institute in forest restoration practices in Nigeria’. Delivered at the 18th commonwealth forestry conference at 7. Available online at <http://www.cfc2010.org/papers/session14/johnson-s14.pdf> (accessed on 02/12/2013).

³⁰³ Ibid.

³⁰⁴ Delta state is one of the oil-producing states in the Niger delta region of Nigeria.

³⁰⁵ Nigerian Conservation Foundation ‘The Renewable Natural Resources of the Niger Delta: options for its sustainable development’. On behalf of the Niger Delta – Conservation and Sustainable Development Project. Lagos, Nigeria 2006 at 87

³⁰⁶ See SPDC ‘Action on matters addressed in the UNEP report. Remediation of impacted sites’. Available online at <http://s05.static-shell.com/content/dam/shellnew/local/country/nga/downloads/pdf/unep/remediation.pdf> accessed on 02/12/2013

Despite the above analysis, the greatest doubt about the sincerity of the Nigerian government towards ensuring ecological restoration in degraded areas is evident in its foot-dragging attitude towards implementing the UNEP report on the impact of oil on the environment of the Ogoni region. It is unfortunate to know that, two years into the submission of the report, which also recommended the rehabilitation of degraded ecosystems, the Nigerian government has yet to commence implementation.³⁰⁷

4.5.7 Regulation of the release and use of living modified organisms

Article 8 (g) requires parties to establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking into account the risks to human health.

This article enjoins countries to develop and maintain a national biosafety regime.³⁰⁸ This can be in form of laws or regulations which are aimed at protecting the people and the environment from the risk associated with the use and release of genetically modified organisms.

Genetically modified organisms are the product of biotechnology, and biotechnology, from a broad perspective, can be defined as the application of scientific engineering principles to the processing of materials by biological agents to provide goods and services.”³⁰⁹ A simple description of biotechnology which would be appropriate for the purpose of this legal research is as follows: a method of using living organisms or their components to modify another living organism in order to create an improved, heterogeneous or hybrid product for specific purposes

³⁰⁷ A. Okpi “Jonathan has disappointed Ogoni people,” reported in the Punch newspaper of 18 August 2013 at <http://www.punchng.com/news/unep-report-jonathan-disappointed-ogoni-people/> (accessed on 02/12/2013). See also “Ogoni residents flay FG over delay in UNEP report implementation” reported in the vanguard newspaper, Nigeria of 18 June 2012 at <http://www.vanguardngr.com/2012/06/ogoni-residents-flay-fg-over-delay-in-unep-report-implementation-3/> (accessed on 02/12/2013).

³⁰⁸ Biosafety Information Network and Advisory Service available online at <http://binas.unido.org/intregs/multi.php> (accessed on 12/12/2013).

³⁰⁹ M. A. Mark ‘Biotechnology: advances and prospects for sustainability in Nigeria’. *The Journal of food technology in Africa*. Vol.5 No.2 at 40.

and to achieve a particular output,³¹⁰ or the application of scientific techniques to modify and improve plants, animals, and microorganisms to enhance their value.³¹¹

Biotechnology cuts across various aspects of human endeavour such as the pharmaceutical, engineering, agriculture, environmental and medical field, with record breakthroughs, such as the DNA sequencing of the human genome.³¹² The impacts of biotechnology have also been felt in the agricultural sector. For instance, there has been an increased quantity and improved quality of food products. Several diseases-resistant and drought-tolerant cultivars of plants have been introduced.³¹³

Biotechnology can be used to conserve biodiversity's genetic resources through procedures such as artificial insemination, intracytoplasmic sperm injection, embryo culture and transfer, which are applicable to animal bio-resources, and micro-propagation, which are used for plant resources as well as cryo preservations and *in vitro* production, which is applicable to both animal and plant resources.³¹⁴

Notwithstanding the benefits and advantages of biotechnology, its safety with regard to human and environmental health is surrounded in controversy and certain reservations have been expressed in some quarters.³¹⁵ The reservations and fear expressed may be categorised into health, environmental and social concerns.³¹⁶ Some environmentalists believe that there is the likelihood of transgenic crops cross-pollinating with weeds, which can result in a new kind of

³¹⁰ E. A. Uyoh, A. E. Nkang A. E. & E. E. Eneobong 'Biotechnology, genetic conservation and sustainable use of bioresources' (December 2003) *African Journal of Biotechnology* Vol. 2 (12), pp. 704-709, at 705.

³¹¹ A. Wiczeorek 'Use of Biotechnology in Agriculture—Benefits and Risks'. College of Tropical Agriculture and Human Resources (CTAHR) May 2003 (revised) BIO-3 at 1 at <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/BIO-3.pdf> (accessed on 17/7/2013).

³¹² J. Hamedi and A. Azimi 'Identification and Prioritization of Interorganizational Success Factors in Microbial Biotechnology Firms' (2013) *Journal of Virology & Microbiology*, Vol. 2013 at 1. See also M. Gavrilescu, 'Environmental biotechnology: achievements opportunities and challenges'. *Dynamic biochemistry, process biotechnology and molecular biology* 4 (1), 1-36 at 2.

³¹³ (n 311 above).

³¹⁴ (n 310 above) at 706 & 707.

³¹⁵ (n 311 above) at 4.

³¹⁶ *Ibid.*

weed which might be very difficult to control.³¹⁷ It has been argued that transgenic crops can be a threat to the ecological balance of the earth if they find their way into the wild.³¹⁸ The use of transgenic crops has been associated with biological diversity loss. It is believed that at the rate at which the world has embraced the use of genetically engineered crops and seeds, the future of naturally occurring crops might be under threat.³¹⁹

In recognition of these fears and resentments, the Convention for Biological Diversity in Article 8 (g), provides that parties should establish means of regulating and controlling the use and release of living modified organisms.

Biotechnology is not a new phenomenon in Nigeria.³²⁰ Genetically modified products have not officially been introduced into the Nigerian environment. At present there is no specific legislation enacted towards the regulation of biotechnology or ensuring biosafety in the country.³²¹ There is nevertheless, a National Guideline on Biosafety, and a number of national policies and regulations which, due to their objectives, expand their scope of application to cover aspects of biosafety. They include the National Biotechnology Policy, National Food Drugs Administration and Control Act (1993), the Food and Drugs Act and the Environmental Impact Assessment Act (1992).

The National Biosafety Guidelines were introduced to implement the provisions of Article 8 (g), as well as the Cartagena Protocol, to the CBD. Its overall objective is:

“to provide a regulatory regime for the development of biotechnology in a sustainable manner and the application and safe use of its products without prejudice to public health, environmental health, natural sovereignty, human dignity and fundamental human rights.”³²²

The policy has a wide scope of application, covering all categories of genetically modified organisms and their derived products.³²³ In order for both to achieve the objectives of the CBD,

³¹⁷ Ibid.

³¹⁸ Ibid.

³¹⁹ Ibid at 5.

³²⁰ O. G. Amokaye ‘Regulation of agricultural biotechnology and food security in Nigeria’. *Environment, Ecology & Management*, 2 (2013), No. 1, 17-43 at 18. According to him, ‘Nigerian foray into agricultural biotechnology began in 1993 when the Sheda Complex was established and charged with the responsibility to carry out research and developmental activities in the field of biotechnology and genetic engineering’.

³²¹ Ibid at 27.

³²² See the objectives of the National Biosafety Guidelines of Nigeria

³²³ According to the scope of the National Biosafety Guidelines, it covers Laboratory and field applications of modern biotechnology, currently known to science as well as those that may be developed in future in such areas as

and also in compliance with its protocol,³²⁴ the guideline provided for the establishment of a National Biosafety Agency which shall be the national focal point, as well as the link between the Nigerian government and the secretariat of the CBD. It provided for the setting up of the National Biosafety Committee, which will be the national authority, charged with the following responsibilities:

“risk assessment and risk management, as well as the establishment and review (when necessary) of all legal regulations and guidelines for both physical and biological containment and control procedures appropriate to the level of assessed risk involved in relevant research, development and application activities, among other functions.”³²⁵

It provides for the establishment of various sub-committees with a wide range of duties and responsibilities to achieve its objective of biosafety in the country. The guidelines also contain some recommendations, which include the enactment of the requisite legal and regulatory regime on biosafety without prejudice to its potential benefits and advantages, and in conformity to the country’s obligation to international law.³²⁶ It also proposed that the government should endeavour to provide adequate financial assistance to support the activities of the National Biosafety Agency and National Competent Authority with regard to the implementation of the biosafety policy and enforcement of the ensuing legislation.³²⁷

It should be noted that the guideline is a mere framework, which lacks the requisite legal footing for ensuring biosafety within the country. It is important to know that the National Biosafety Bill has not yet been passed by the National Assembly. The implication of this is that, the country does not have any law specifically enacted to protect the people and the environment from the anticipated effects of genetically modified organisms.

Another legislation which was enacted to protect the public from the importation and use of dangerous foods and drugs and, by implication, will indirectly regulate the movement and use of genetically modified organisms, is the National Agency for Food, Drugs Administration and

agriculture, human and veterinary medicine, food/feed and beverage production, industry, environmental management, bioremediation, industrial and domestic waste management etc.

³²⁴ The Cartagena protocol on biosafety.

³²⁵ See the functions of the National Biosafety Agency (a) & (b) as contained in the National Biosafety Guidelines of Nigeria.

³²⁶ Chapter 11 of the National Biosafety guidelines of Nigeria.

³²⁷ Ibid see Chapter 13.

Controls Act.³²⁸ Its objective is to safeguard public health by ensuring that only the right quality drugs, food and other regulated products are manufactured, imported, exported, advertised, distributed, sold and used within the country.³²⁹ The Act sets up an agency which is empowered to set specific standards with which all food and drug products must comply and, in order to ensure compliance, can conduct physical inspection of the products or investigate the raw materials used in the production of the food and drugs.³³⁰ The agency is also charged with the duty of preventing the importation of unwholesomely processed food and drugs into the country, and ensuring that the local manufacturers of food and drug products comply with international standards. It monitors food and drugs adverts, and prevents the production and circulation of adulterated or counterfeit products.³³¹

The requirement of an environmental assessment report for any proposed activity which is likely to adversely affect the environment, in the Environmental Impact Assessment Act (to be discussed under the implementation of Article 11), will serve as a legislative measure towards ensuring the protection of human beings and the environment from the use and release of GMOs. Though the legislation does not make specific reference to GMOs, it can be assumed that all proposed biotechnological activities (which include the release of GMOs) are expected to comply with its provision, which requires an analysis of their impacts on human and environmental health.³³²

It should be noted that the provision of the Environmental Impact Assessment Act, as well as the National Agency for Food, Drugs Administration and Control Act does not expressly refer to genetically modified organisms. It can be assumed that, according to the scope of their operation, issues concerning GMOs would automatically be under their purview and be addressed by them. Nonetheless, this is not sufficient to satisfy the requirements of the CBD. The prompt passage of the biosafety bill is therefore required in order to achieve substantial compliance with this provision of the CBD.

³²⁸ See the National Agency for Food and Drug Administration and Control Act NO 15 1993.

³²⁹ See the official website of the agency at <http://www.nafdac.gov.ng/index.php/about/mission-a-vision> accessed on 18/07/2013.

³³⁰ Section 5 & 6 of the National Agency for Food and Drug Administration and Control Act.

³³¹ Ibid.

³³² (n 320 above) at 41.

The situation in South Africa, which is a leading biotechnological powerhouse in Africa, can serve as a useful example in relation to the implementation of this article.³³³ In order to achieve biosafety and in compliance with the provisions of Article 8 (g) of the CBD, the South African government has created a legal regime which includes the Genetically Modified Organisms Act 1997, the National Environmental Management Act 107 of 1998, the National Biodiversity Act and the Foodstuffs, Cosmetics and Disinfectant Act 54 of 1972. (Sir, in respect of your comments on this page, I have already included the years of enactment of these laws in the preceding paragraph, but I can still include them if you want it)

Unlike Nigeria, where the laws only indirectly address biosafety, South Africa has laws which both directly and indirectly address the matter. For example, the Genetically Modified Organisms Act, the Environmental Impact Assessment Regulations and the National Environmental Management Act specifically contain provisions addressing the issues of GMOs, while the Foodstuffs, Cosmetics and Disinfectant Act can be indirectly applied to it.

The Genetically Modified Organisms Act is the principal legislation governing the development, production, use and application of genetically modified products in South Africa, in order to ensure their compliance with safety guidelines and regulations, and to reduce the possible harmful consequences which might result from their usage.³³⁴ Its objective is to ensure that any activity or process in which genetically modified organisms are involved give adequate consideration to environmental, human and animal health.³³⁵ In order to regulate these activities, the Act provides for the use of permits for different categories of activities involving genetically modified organisms. These include permits for imports, commodity clearance, general release, field trials and contained use.³³⁶ An application for the permit is also expected to include an assessment of the risk and, if required, an environmental impact assessment in order to determine its effects on the environment.³³⁷ The registrar of the executive council of genetically modified

³³³ P. Andanda 'Status of biotechnology policies in South Africa' (2009) *Asian biotechnology and development review* vol 11 no 3 pp. 35-47.

³³⁴ See the Genetically Modified Organisms Act (No. 15 of 1997) of South Africa at www.info.gov.za/acts/1997/act15.htm (accessed on 18/7/2013).

³³⁵ Biosafety South Africa – overview of the South African regulatory framework for GMOs at [www.bisafety.org.za/resources/download.php?file=documents/The%20%20\(fin\).pdf](http://www.bisafety.org.za/resources/download.php?file=documents/The%20%20(fin).pdf) accessed on 18/07/2013

³³⁶ Section 5 (a) of the Genetically Modified Organism Act no 15 of 1997.

³³⁷ Ibid.

organisms which was established by the Act, can allow for the conduct of physical inspection by an inspector into the facilities where these activities are taking place.³³⁸

The Act creates two bodies, the Executive Council on Genetically Modified Organisms and the Advisory Committee.³³⁹ While the Executive Council is made up a number of representatives from government institutions and departments, the Advisory Committee consists of independent scientists, knowledgeable in the field of ecology and genetically modified organisms.³⁴⁰ As the name suggests, the Advisory Committee will advise the Executive Council on the likely risks involved or associated with certain activities, in respect of the genetically modified organisms as well as whether a permit should be issued for it or not.³⁴¹ The powers to issues a permit for carrying out any activity relating to the subject matter rests with the Executive Committee and it has to take the submissions and recommendations of the Advisory Committee into consideration when arriving at its decision.³⁴²

The National Biodiversity Act established the South African National Biodiversity Institute (SANBI).³⁴³ Among its assigned functions is the duty to monitor, and report regularly to the minister, the impacts of any genetically modified organism that has been released into the environment, including the impact on non-target organisms, ecological processes, indigenous biological resources and the biological diversity of species used for agriculture.³⁴⁴ If the minister has reason to believe that the release of a genetically modified organism under a permit applied for in terms of the Genetically Modified Organisms Act may pose a threat to any indigenous species or the environment, an environmental assessment has to be conducted in line with the objectives of Chapter 5 of the National Environmental Management Act.³⁴⁵ The implication of this provision is to bring the proposed release of the genetically modified organism within the

³³⁸ Section 5 (e) of the Genetically Modified Organism Act no 15 of 1997.

³³⁹ Ibid see section 3

³⁴⁰ Ibid see section 10 (1).

³⁴¹ Ibid

³⁴² Ibid

³⁴³ See Chapter 2 of the National Environmental Management: Biodiversity Act.

³⁴⁴ Ibid see Section 11 (b).

³⁴⁵ Ibid see section 78.

scope of the activities, which will require an environmental assessment under Chapter 5 of NEMA, without which a permit will not be issued.

Moreover, the South African environmental impact assessment regulations³⁴⁶ contains a general guideline for the conduct of an environmental assessment and environmental assessment requirements for activities in respect of a genetically modified organism are listed under schedule 21 of its notice as a Schedule One activity for which a basic assessment report (BAR) will be required.³⁴⁷

Other states which have the potential to indirectly boost the biosafety regime of South Africa include the Foodstuffs, Cosmetics and Disinfectant Act 54 of 1972, as well as the Promotion of Access to Information Act no 2 of 2000.

A look at the implementation of Article 8 (g) of the CBD shows that South Africa has a well-articulated regime of laws and guidelines towards ensuring the safety of the public from the associated risks of biotechnology and genetically modified organisms. This is confirmed by the existence of the Genetically Modified Organisms Act, specifically enacted in order to ensure public safety. Most of the other legislation discussed above contains specific provisions on biosafety. For instance, the responsibility of the SANBI to monitor and report the impacts of genetically modified organisms to the minister,³⁴⁸ as well as the power of the Minister to demand an environmental assessment where he reasonably believes that the release of GMOs under the Genetically Modified Organisms Act will adversely affect the environment,³⁴⁹ gives credence to this.

There is a well-defined synergy among these various items of legislation, for instance, where the executive council on genetically modified organism has authorized the release of certain genetically modified organisms in accordance with its powers under the Genetically Modified

³⁴⁶ South Africa's Environmental Impact Assessment regulation 2010 published by government notice No R. 543 in gazette No 33306 on June 2010 and amended by government notice No. R.660 in gazette No 33411 on 30 July 2010

³⁴⁷ See the listed activities of NEMA 2010

³⁴⁸ Section 11 (b) NEMA 1998.

³⁴⁹ Ibid see Section 78.

Organisms Act, the minister can demand an environmental assessment under the National Environmental Management Act if he believes that such release will have an adverse effect on the environment.

4.5.8 Prevention of the introduction of invasive alien species into natural habitats

Article 8 (h) enjoins parties to prevent the introduction of, and to control or eradicate those alien species which threaten ecosystems, habitats or species. Invasive alien species are considered to be one of the direct causes of biodiversity loss in the world.³⁵⁰ They have the capacity to grow quickly and as a result disrupt the ecology of natural ecosystems by displacing native plants and animal species.³⁵¹ In recognition of this fact, the CBD advocates that measures should be put in place to prevent the introduction of these species into the protected areas and other natural ecosystems.

The National Park Service Act, discussed earlier under the implementation of Article 8 (b) of the CBD by Nigeria, contains provisions which forbid the introduction of domestic and wild species of animals and plants into the national parks, and provides an appropriate sanction for anyone who contravenes this provision.³⁵² The effect of this provision is to prevent the introduction of invasive alien species into these parks. The application of the Act is, however, limited because it is only applicable to the national parks

4.5.9 Legislation and regulations for the protection of endangered species

Article 8 (i) requires that parties should develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations. The Convention recognises the role of the law concerning the conservation of biodiversity and advocates the introduction of a legislative framework for the protection of endangered species.

³⁵⁰ Invasive alien specie available online at <http://www.cbd.int/invasive/> (accessed on 13/12/2013).

³⁵¹ Biodiversity of British Columbia at <http://www.geog.ubc.ca/biodiversity/BiodiversityandInvasiveSpecies.html> (accessed on 13/12/2013).

³⁵² See chapters 32, 33 and 34 of the National Park Service Act of Nigeria.

In order to protect endangered species of wildlife within the country, the Nigerian government enacted the Endangered Species Control of International Trade and Traffic Act,³⁵³ which controls and regulates international trade in endangered species of wildlife. The Act was enacted in compliance with the discharge of the country's obligations under the CITES convention. However, its application was widened to include hunting and capture of animals and not simply the regulation of international trade, which is the objective of CITES.³⁵⁴ The wording of its commencement reveals that the legislation is enacted to protect endangered species of wildlife from extinction as a result of over-exploitation.³⁵⁵

The first schedule of the legislation contains a list of animals which are in danger of extinction and places an absolute ban on their hunting, capture or trade.³⁵⁶ Contravention of this provision attracts a fine of 1,000 naira (about 62.5 ZAR) upon conviction for a first offender and, on a second and subsequent offence, imprisonment for one year without the option of a fine. The second schedule contains a list of animals which, though not yet endangered, are likely to be threatened if international trade or domestic usage of them is not regulated.³⁵⁷ Hunting of these animals is strictly controlled and regulated by the use of an official permit. Contravention of this section attracts a fine of 500 naira (about 31.25 ZAR) upon conviction and imprisonment of six months without the option of fine for a second and subsequent offence. The Act does not provide for any exceptional circumstances under which the animals listed in its first schedule can be hunted, captured, or traded, for example, other purposes such as the conduct of a scientific, educational or academic research on these species of wildlife.³⁵⁸

The legislation fails to address the key issues raised by the CBD in relation to the protection of endangered species. This is without prejudice to the fact that it was modelled to implement the

³⁵³ Endangered Species (control of international trade and trafficking) Act CAP 108 L.F.N 1990 ACT CAP E9 L.F.N 2004.

³⁵⁴ Chapter 1 (1) & (2) of the Endangered Species Act.

³⁵⁵ According to the commencement, the Act was introduced "to provide for the conservation and management of Nigeria's wildlife and the protection of some of her endangered species in danger of extinction as a result of over-exploitation". It will be right to assume that the consequences of over exploitation being contemplated in this instance can be as a result of unregulated trade, uncontrolled hunting and indiscriminate taking of this wildlife.

³⁵⁶ Chapter 1 (1) of the Endangered Species Act.

³⁵⁷ Ibid see chapter 1(2).

³⁵⁸ African wildlife laws - IUCN environmental policy and law occasional papers No 3 at 197.

CITES convention. The following are the inadequacies in the Endangered Species Act, which brings it short of the CBD's provision:

- The legislation only protects wildlife biodiversity. The CBD advocates for the protection of threatened species encompassing wildlife, agro-biodiversity and ecosystems.
- The application of the legislation is limited to wildlife within the national parks or federal jurisdictions. According to Nigeria's legal structure, the power to legislate over wildlife is vested in each state. Therefore the federal government can only exercise jurisdiction over the national parks.³⁵⁹

These shortcomings make it impossible for the Endangered Species Act to meet the requirements of the CBD in relation to protection of endangered species and biodiversity.

In South Africa, for example, the Biodiversity Act contains provisions which are aimed at protecting threatened or endangered species. There are four categories of species protected by the legislation; they are the critically endangered species, the endangered species, the vulnerable species and lastly the protected species.³⁶⁰ The responsibility of publishing these lists in South Africa falls on the minister, and he or she must review this list at least every five years.³⁶¹ In order to ensure sustainability in the use of wildlife, certain restricted activities in relation to threatened or protected species are prohibited without a permit such as hunting, killing of restricted activities as defined in section 1 of the Act.³⁶²

The minister is empowered by the Act to restrict certain activities in respect of any of these species protected by the legislation; and where such powers have been exercised, such activity can only be carried out with the use of permits.³⁶³

³⁵⁹ (n 125) at 215.

³⁶⁰ Section 56 (1) (a) (b) (c) & (d) of the Biodiversity Act 2004. The Act defines the four categories as (1) the critically endangered, which includes any indigenous species facing an extremely high risk of extinction in the wild in the immediate future, (2) the endangered species, which includes indigenous species facing a high risk of extinction in the wild in the near future, although they are not a critically endangered species, (3) the vulnerable species which includes indigenous species facing an extremely high risk of extinction in the wild in the medium-term future, although they are not critically endangered species or an endangered species, and lastly, the protected species which includes any species which are of such high conservation value or national importance that they require national protection.

³⁶¹ Ibid see section 56 (1) & (2).

³⁶² Ibid see section 1.

³⁶³ Ibid see section 57 (1) & (2).

From this discussion it is clear that South African has a better mechanism for the protection of endangered species, according to the provisions of the CBD. This is because the Convention has already been domesticated into South African laws. The Biodiversity Act gives consideration to all the categories of endangered species. It would be in the interest of biodiversity in Nigeria if the convention were to be domesticated into its laws. However, as an alternative, an amendment of the endangered species law to include other categories of biodiversity listed in the CBD will help to fill the gaps and inadequacies which seem to limit the legislation.

4.6 Article 9 – *Ex situ* conservation of biological diversity

4.6.1 Measures for ex situ conservation of biodiversity components

Article 9 (a) and (b) requires that parties should adopt measures for the *ex situ* conservation of biodiversity components in the country of origin and establish, as well as maintain, facilities for *ex situ* conservation and promotion of research into plants, animals and micro-organisms. A summary of the provisions of this Article 9 (a) & (b) reveals that, while emphasising the significance of biodiversity, and the need to conserve species within their natural habitat, the CBD also acknowledges the importance of *ex situ* conservation which entails their conservation outside their natural habitat. The purpose of this is to serve as a complementary measure to the *in situ* conservation programmes.³⁶⁴ This is due to the fact that, although, the best and most effective means of preventing species from extinction is the preservation of their natural habitat through an *in situ* approach, there are instances where habitats are seriously being threatened or have been completely destroyed.³⁶⁵ In such instances, *ex suit* procedures will be effective in preserving species from such habitats. In a bid to achieve this, the Convention provides for the establishment of facilities and resources for the purpose of *ex situ* conservation and the conducting of research on plants, animals and micro-organisms, especially within the country of origin.³⁶⁶

³⁶⁴ See Article 9 of the CBD.

³⁶⁵ J. Xia, J. Zheng, & D Wang 'Ex situ conservation status of an endangered Yangtze finless porpoise population (*Neophocaena phocaenoides asiaeorientalis*) as measured from microsatellites and mtDNA diversity' (2005) *ICES Journal of Marine Science*, 62: 1711-1716 at 1711.

³⁶⁶ Article 9 (b) of the CBD.

There are two major approaches that can be adopted towards achieving *ex situ* conservation of biodiversity. These are the infield strategy, which can take place in facilities such as a botanical garden, arboretum, field gene bank, orchard, palmetum and greenhouse, and the in-laboratory approach, which can be carried out with the aid of a seed bank, herbarium, *in vitro* respiratory, cryogene bank or a DNA bank.³⁶⁷

In Nigeria, the National Centre for Genetic Resources & Biotechnology (NACGRAB) was established to serve as a focal point for the conservation of the genetic components of biological resources within the country. This was a result of the need to ensure uniformity in the activities of other institutions which are also involved in *ex situ* activities through the maintenance of germplasms and to create a centralised system for the long-term storage of germplasm within the country.³⁶⁸ It was set up with the support of international bodies such as the Food and Agriculture Organization (FAO), international plant generic resources institute (IPGRI) and the United Nations development programme (UNDP) and given the mandate to conserve the genetic resources of the nation's biological resources, through *in vivo*, *in situ*, and *in vitro* procedures, and also to ensure the maintenance of its gene banks for *ex situ* conservation.³⁶⁹ It also serves as the medium for assembling and dispatching research data in matters relating to plant genetic resources, genetic engineering and biotechnology. Some of its *ex situ* activities are to:

- collect, characterise, evaluate and maintain plant germplasm and foster its utilisation,
- organise and co-ordinate local germplasm explorations,
- co-ordinate the maintenance and utilization of the existing plant germplasm in the research institutes,
- co-ordinate and facilitate the exchange of plant genetic resources materials,
- serve as the national authority for the validation, registration and release of new crop varieties and maintain a national register of all crop varieties in the country,

³⁶⁷ J. U. Ogbu, B. A. Essien, J. B. Essien and M. U. Anaele 'Conservation and management of genetic resources of horticultural crops in Nigeria: Issues and biotechnological strategies' (2010) *Journal of Horticulture and Forestry* Vol. 2(9) pp. 214-222, November.

³⁶⁸ M. B. Sarumi 'plant genetic resources and food security in west and central Africa' at 304 at www.biodiversityinternational.org/publications/1277/PDF/Nigeria.pdf (accessed on 28/06/2013).

³⁶⁹ See the official website of National Biotechnology Development Agency (NABDA) at <http://nabda.gov.ng/zonal-centres/nacgrab> (accessed on 05/04/2013).

- promote training opportunities to personnel connected with germplasm collection, maintenance and multiplication and others in the area of vegetation conservation,
- operate as the central organ of the country for liaison with international bodies such as the International Plant Genetic Resources Institute (IPGRI), FAO, UNDP, ICRAF, IITA, concerning plant genetic resources and
- advise government on matters concerning plant genetic resources and vegetation conservation.³⁷⁰

The institute is believed to have acquired a total collection of approximately 2 500 accessions, which include indigenous and exotic germplasm, mainly of food crops, vegetables, tuber, fodder, industrial, medicinal and forest plants, since inception.³⁷¹

Apart from NACGRAB, *ex situ* conservation activities are carried out in Nigeria by a chain of research institutes, most of which fall under the umbrella of the Agricultural Research Institute (ARI), which are supervised by the Federal Ministry of Agriculture and Rural Development.³⁷² These institutes are given specific mandates in terms of the type of crop species that is to be their priority and focus in the area of research and conservation. One of these institutes is the Cocoa Research Institute of Nigeria (CRIN), which carries out both *in situ* and *ex situ* conservation activities for the cocoa species.³⁷³ The institute also maintains several species of cocoa genes of the *Theobroma* genus which include the *T. bicolor*, *T. grandiflora*, *T. speciosum* and *T. subincana* in its live gene banks for *ex situ* conservation.³⁷⁴ Similarly, the Nigerian Institute of Palm Oil is involved in both *in situ* and *ex situ* conservation of palm oil and its components, which are stored in its gene banks.³⁷⁵ For the *ex situ* conservation of its root crops, to boost food production within the country, the government established the National Root Crops Research Institute to conserve components of food crops such as cassava, potato, sweet potato, ginger and

³⁷⁰ M.B. Sarumi, D.O. Ladipo, L. Denton, E.O. Olapade, K. Badaru, C. Ughasoro 'Nigeria: country report to the (FAO) international technical conference on plant genetic resources' Leipzig, 1996.

³⁷¹ Ibid at 24.

³⁷² For a list of all the Agricultural Research Institutes under the Federal Ministry of Agriculture and Rural Development see the official website of the ministry at <http://www.fmard.org/index.php/parastatals/agricultural-research-institutes> (accessed on 05/04/2013).

³⁷³ (n 93 above).

³⁷⁴ (n 370 above).

³⁷⁵ (n 93 above) at 30.

cocoa yam in its gene banks.³⁷⁶ The Institute of Agricultural Research and Training has gene banks for the *ex situ* conservation of various food crops and other agricultural products.³⁷⁷

The National Horticultural Research Institute is charged with the conservation of the horticultural subset of the agro-biodiversity resources of the country. It carries out research into the genetic improvement, production, processing and marketing of vegetables, fruit, citrus and ornamental plants. Its objectives include collection, characterisation and conservation of the germplasm of fruit, vegetables and ornamental plants as well as the improvement of tropical fruit and vegetables.³⁷⁸ A list of other institutes includes the National Cereals Research Institute, Lake Chad Research Institute, the National Agricultural Extension and Research Liaison Services and the National Institute for Fresh Fisheries Research.

In the area of *ex situ* conservation of genetic resources of food animal species such as cattle, swine, goats, poultry and rabbits, the National Animal Production Research Institute (NAPRI) was established and charged with the responsibility of conducting applied research to achieve genetic and reproduction improvement of these species.³⁷⁹ In order to achieve these objectives, it maintains gene banks, where biological and genetic resources of these animals are conserved.

In addition to the efforts of the Nigerian authorities to achieve its *ex situ* conservation objectives, international research institutes such as the International Institute of Tropical Agriculture (IITA), which has its headquarters in the country, have played an active part towards *ex situ* conservation of species of biological diversity within the country. Although the major factor behind its establishment is the enhancement of food production and the promotion of research activities into agricultural practices, its programmes include the *ex situ* conservation of agricultural

³⁷⁶ Ibid.

³⁷⁷ Ibid.

³⁷⁸ O. A Denton, D Alasiri, M.A Adejoro (Eds.). (2000) 'NIHORT: 25 Years of research into horticultural crops development in Nigeria (1975-2000)'. National Horticultural research Institute (NIHORT), Ibadan, pp. 1-4, 8-9.

³⁷⁹ See the official website of the National Animal Production Research Institute at www.napring.org/mandate.php (accessed on 29/06/2013).

resources through its seed gene bank and field gene bank.³⁸⁰ There are some private initiatives aimed towards *ex situ* conservation of biodiversity within the country. For example, some universities, tertiary institutions, and NGOs have established botanical and zoological gardens, where species of plants and wildlife are kept and looked after.³⁸¹ The Lekki Conservation Centre, owned by the Nigerian Conservation Foundation is an example of an NGO's initiative towards promoting *ex situ* conservation.³⁸²

However, despite the existence of these facilities, the capacity of some of them to sustain *in situ* conservation of biodiversity has been questionable. Some studies have shown that some of these research institutes have not been adequately maintained and have accommodated invasive species which constitute a serious threat to the biological resources they are meant to conserve.³⁸³ Research conducted to identify the presence of invasive species and their level of invasiveness at the field gene bank of the National Centre for Genetic Resources and Biotechnology (NACGRB), identified 35 invasive species spread across 16 plants families.³⁸⁴ The invasive species were estimated to cover over 18% of the total field gene bank. According to this research, the alien species tend to grow faster and to produce more fruit and seeds in order to take more land space than the indigenous species being conserved. The study identified human disturbance as being largely responsible for the spread of these alien species in the gene banks and recommended stricter screening measures before the introduction of new plants into the gene bank, emphasising the need for training and capacity building in the areas of early detection and management of these species by the staff.³⁸⁵

³⁸⁰ E. A. Ajayi 'International institute of tropical agriculture and the eco-regional programme for the humid and sub-humid tropics of sub-Saharan Africa'. Available at www.fao.org/docrep/005/y2807e/y2807e0k.htm (accessed on 29/06/2013).

³⁸¹ (n 370 above) at 23. Examples are the zoological gardens at the Obafemi Awolowo University, University of Ibadan and some other institutions in the country

³⁸² See Nigerian Conservation Foundation website at <http://www.ncfnigeria.org/projects/lekki-conservation-centre> (accessed on 18/12/2013). See also O. Areola 'Environmental issues and policies in Nigeria' (in) ecological policy and politics in developing countries – economic growth, democracy and environment (ED) U. Desai. State university of New York press, Albany 1988 at 251.

³⁸³ T. I. Borokini 'Invasive Alien Plant Species and their effects on Biodiversity Conservation in Nigeria'. National Centre for Genetic Resources and Biotechnology Moor Plantation, Ibadan at http://www.ewrs.org/doc/EWRS_Invasive_Ascona_Abstracts_2011.pdf (accessed on 24/04/2013).

³⁸⁴ Ibid at 3.

³⁸⁵ Ibid.

Most of these institutions lack the modern infrastructures and facilities to ensure compliance with the present trends in *ex situ* conservation. For example, the NACGRAB, which was established in 1987, still makes use of the seed gene banks donated to it by the FAO and the UNDP, despite the advancement of technology between that period and today.³⁸⁶ The lack of stable power supply in the country has affected the ability of these facilities to perform optimally, as most of these seeds are kept under a low temperature, leading to destruction and loss. It is reported that the country has lost more than 50% of its germplasm due to power failures at the NACGRAB within the past six years.³⁸⁷

Finally, these facilities are underfunded; as most of them have identified lack of sufficient funding as a major challenge facing them.³⁸⁸

4.6.3 Measures for the recovery and rehabilitation of threatened species

Article 9 (c) requires parties to adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate conditions. The provision of this article of the CBD draws the connections between *in situ* and *ex situ* conservation approaches to biodiversity conservation. It requires that threatened species be rehabilitated and re-introduced back into their natural habitats. This simply means that the species are initially salvaged and rehabilitated using the *ex situ* conservation approach³⁸⁹ and later re-introduced into their natural environment.

There are a number of activities aimed at rehabilitating and re-introducing endangered species of biodiversity into their natural environments in Nigeria. Some of these initiatives are spearheaded by international conservation agencies, working in concert with conservation organisations and NGOs in the country in order to achieve this objective. One of these international agencies is CERCOPAN, whose objective is the protection of rainforests for the conservation of primates. It

³⁸⁶T. I. Borokini 'The state of *ex situ* conservation in Nigeria' (April- June 2013) *International Journal of Conservation Science* Volume 4, issue 2: 197-212 at 207.

³⁸⁷ Ibid.

³⁸⁸ Ibid.

³⁸⁹ They are conserved, using the *ex situ* approach in order to save them from the threats of the extinction they are facing, and would later be re-introduced to their natural ecosystems (*in situ* approach).

has entered into a partnership with the Iko Esai community in Cross Rivers state to conserve the community forests and re-introduce rehabilitated primates into them.³⁹⁰

4.7 Article 10 - Sustainable use of components of biological diversity

4.7.1 Biodiversity conservation in national decision-making

Article 10 (a) requires parties to the CBD to integrate biodiversity conservation and sustainable use into their national decision-making mechanism. Inasmuch as there is a need to conserve the various species of biodiversity, the CBD realizes the important role biodiversity play in our survival. As a result of this, it provides for the use of these resources. However, it emphasises that such usage must be sustainable in order not to drive them into early extinction. According to sub section 10(a) of the CBD, conservation and sustainable use of biological diversity should be integrated into national decision-making programmes of the governments of the member states.

Many aspects of the provisions of this article of the convention have already been discussed in the analysis of the implementation of Article 6 above. The goals and objectives of the various national policy blueprints, programmes and legislations, as well as the institutional authorities of the government, have all incorporated conservation and sustainable use of biodiversity. This is because the provision of Article 6 is very similar to that of Article 10(a) of the Convention. Both provide for the incorporation of biodiversity conservation and sustainable use into the national programmes of party countries. These policy documents and this legislation contain detailed programmes for ensuring the conservation of biological diversity and sustainable use of its components.³⁹¹

However, it will be the legislation and policy regulating the use of biodiversity for sustainability, as it relates to the Nigeria's situation, which will be the focus of the analysis of Article 10. This is because the activities which have necessitated the enactment of these policies and the legislation are likely to have adversely affected the sustainability of biodiversity, had they not been put in place. Such activities include game hunting, fishing and farming. All these activities,

³⁹⁰ CERCOPAN conserving Nigeria's primates and rainforests available online at <http://cercopan.wildlifedirect.org/tag/rehabilitation/> (accessed on 18/12/2013). See also CERCOPAN primate rehabilitation available online at <http://cercopan.org/primate-rehabilitation/> (accessed on 18/12/2013).

³⁹¹ See the implementation of article 6 of the CBD.

if not properly regulated will seriously deplete the population of biodiversity within the territory in which they are being carried out. Therefore the laws and policies which will be considered here include fishing legislations, agricultural legislation and policies, wildlife laws, forest laws, wetland regulations and other policies made in furtherance of the sustainable use of biological diversity. These laws implement the provisions of Article 10 (b) of the Convention.

4.7.2 Measures for sustainable use of biodiversity

Article 10 (b) enjoins parties to adopt measures relating to the use of biological resources to avoid or minimise adverse impacts on biological diversity. An explanation of what is meant by the ‘sustainable use of biodiversity’ has been given in Chapter 2 of this work. This is one of the major objectives of the CBD towards achieving this goal of conservation. These resources must be used sustainably. The following Nigerian legislation which seeks to control the use of the country’s biological resources will be our focus

4.7.2.1 The Sea Fisheries Act

The Sea Fisheries Act, which is the sole federal legislation governing and regulating the marine resources within the country, was enacted to protect fish and other aquatic resources in the country and to ensure their sustainable use. In its commencement note, it is described as an Act to control, regulate and protect the sea fisheries within the territorial waters of the country.³⁹² It contains two regulations, the Sea Fisheries Licensing Regulation stipulating the conditions for granting fishing licences for shrimping and fishing, and the sea Fisheries (fishing) regulations, which provide a general guideline which must be complied with by all commercial fishing activities within the country’s waters.

In order to protect the fishes within the country, and also to ensure their sustainable use, the Act prohibits the operation of any motorised fishing boat used for the purpose of fishing or a reefer for the purpose of discharging frozen fish within the territorial waters or exclusive economic zone of the country, unless it is registered and licenced by the appropriate authorities within the country.³⁹³ Contravention of this provision is backed by sanctions which include imprisonment for a period of five years or a fine of \$250,000 about (2.5 million ZAR) ,or both. In addition to

³⁹² See the introduction to the Sea Fisheries Act.

³⁹³ Section 1 (1) of the Sea Fisheries Act.

the fine or imprisonment, the motor fishing boat and the fish or shrimps found in it would automatically be forfeited.³⁹⁴ There are also certain conditions to be complied with before a licence can be issued to a motor fishing owner who intends to fish within the national waters of the country. The application must contain, among other things, the details of the method to be employed in catching the fishes,³⁹⁵ as well as arrangement made towards the preservation and marketing of the fishes caught within the country.³⁹⁶ These conditions are included to prevent unnecessary wastage and ensure sustainable fishing practices. Similarly, to prevent harm to the fishes, the Act forbids the use of explosives or any noxious or poisonous substances. The breach of this provision carries a prison term of two years or a fine of 50 000 Naira (about 3 500 ZAR).³⁹⁷

Fishing within five nautical mile of the continental shelf of the country is prohibited by the legislation, except with canoes. This is intended to protect the fish population within these regions, although, the exception was included in favour of local fishermen whose fishing nets were damaged by industrial fishing trawlers.³⁹⁸ The regulation forbids the use of a motor boat, registered originally for fishing for other purposes such as the catching of shrimps. The Act grants the minister powers to make additional regulations on issues ranging from areas to be excluded from fishing, sizes of nets or mesh sizes to be employed in fishing, the sizes of fish to be caught and any other regulation relating to the conservation and protection of the fish stock in the country's waters.

In addition to the Sea Fisheries Act, the Inland Fisheries Decree³⁹⁹ is another national legal instrument enacted for the promotion of the conservation of the fish resources and the sustainable use of their components. The Decree contains similar provisions as the Sea Fisheries Act. Thus the provisions on licencing of fishing crafts, restriction of fishing gear and the prohibition of certain fishing methods are very similar. An important inclusion in the legislation is the powers

³⁹⁴Ibid see section 1 (2).

³⁹⁵ Ibid see section 3 (2) (b) (1).

³⁹⁶ Ibid see section 3 (2) (b) (111).

³⁹⁷ Ibid see section 10 (1) (a) & (b).

³⁹⁸ F.M. Nwosu, E.O Ita & U.I Enin 'Fisheries management in Nigeria: A case study of the marine fisheries policy' (may 2011) *International Research Journal of Agricultural Science and Soil Science* Vol.1(3) pp.070-076, at 71

³⁹⁹ Inland Fisheries Decree No 108 1992 CAP I10 LFN 2004

granted to the commissioner⁴⁰⁰ to declare certain periods of the year and areas as opened and closed to fishing. This bears some semblance to the pre-colonial traditional African conservation strategies, whereby certain periods of the year are declared as fishing periods while some days are exclusively forbidden for fishing. It also complies with the provisions of Article 10 (c).⁴⁰¹

The Decree, like traditional practice, provides for sanctions for noncompliance. According to it, any person who fishes during the closed season or in a closed area shall be guilty of an offence and convicted to a fine of 3 000 naira (about 200 ZAR) or an imprisonment for a term of two years or both. This provision seems to comply with Article 10 (c) of the Convention which provides for the protection of biological diversity resources, in accordance with traditional cultural practices which are compliant with conservation and sustainable use requirements.⁴⁰²

4.7.2.2 Sustainable use of wildlife resources

The responsibility of protecting the wildlife resources in the country falls into the hands of the various states within which they are found. This is because there are no national laws enacted for the protection and sustainable use of wildlife.⁴⁰³ The states are responsible for the creation and administration of the various game reserves and other necessary measures to conserve and promote the sustainable use of the wildlife within their territories. The federal government will only exercise its control where the wildlife or flora fall within a national jurisdiction, such as within the national parks, or are related to international wildlife trade, most especially the ones listed in the Endangered Species (Control of International Trade) Act.⁴⁰⁴ This has been discussed above under the implementation of Article 8(k) by Nigeria.

While discussing the medium for protecting endangered species under Article 8 (k), the animals listed in the second appendix of the Endangered Species Act⁴⁰⁵ can be hunted or captured,⁴⁰⁶

⁴⁰⁰ Commissioner here means the commissioner in charge of fishery in any of the 36 states that make up the country.

⁴⁰¹ Article 10 (c) provides that parties should Protect and encourage the customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

⁴⁰² Article 10 (c) CBD.

⁴⁰³ (n 125 above) at 211.

⁴⁰⁴ (n 358 above).

⁴⁰⁵ Endangered Species (Control of International Trade and Traffic) Act CAP 108 LFN 1990 Act CAP E9 LFN 2004.

with permits. This is because they are not critically endangered presently; however, it is very likely that if hunting is left unregulated, they face the risk of being endangered. This necessitated the use of permits as a means of regulating the hunting or capture of wildlife.

At the state level, the various states have different laws which were enacted towards the preservation and sustainable use of the wildlife within their territories. These laws are mostly similar, since they are adapted from the Wild Animal Preservation Act (Cap 140) of 1916, which was promulgated during British rule. The slight differences are minor amendments to suit the realities and circumstances of each state.⁴⁰⁷ Due to the number of states, with each having its own wildlife laws, it would be difficult to discuss each one of them individually, in detail, in this dissertation. Therefore, the wildlife Preservation Laws of Lagos state,⁴⁰⁸ which is also applicable in other states in the south-western part of the country, will be used as a yardstick in order to determine the extent of national compliance with the ‘sustainable use’ objectives of the Convention.

4.7.2.3 Wildlife Preservation Law (W.L.R. 1959, Cap.132. L.S.L.N. 16 of 1972)

The wildlife preservation law serves the dual purpose of protection and ensuring the sustainable usage of the state’s wildlife, avian and fishery resources, through different media such as controlling hunting and traffic in trophies and the use of permit licences for hunting, as well as the designation of protected areas for wildlife. It places an absolute ban on the killing or capture of the animals contained in its first schedule.⁴⁰⁹ The animals listed in its second schedule can be hunted or captured where the required permit has been obtained. In order to protect certain categories of vulnerable animals listed in the second schedule, the law further prohibits the hunting or capture in an instance where the animal is immature, a female accompanied by her young ones or any female antelope.⁴¹⁰

⁴⁰⁶ Section 1(2) of the Endangered Species Act.

⁴⁰⁷ (n 358 above) at 198.

⁴⁰⁸ Wildlife Preservation Law (W.R.L. 1959, CAP. 32. L.S.L.N.16) of 1972.

⁴⁰⁹ See section 4 (1) (a) of the Wildlife Preservation Law. The first schedule contains a list of endangered species of wildlife in relation to which international trade is absolutely prohibited.

⁴¹⁰ Section 4 (1) (b) & (c) of the Wildlife Preservation Law.

To ensure sustainable hunting of this wildlife and protecting them from unregulated exploitation all year round, the commissioner is authorised to declare certain period of the year as closed for hunting. For example, based on his discretion and available statistics, the commissioner may declare that hunting should not be carried out during certain periods of the year. Noncompliance with this declaration will be visited by sanctions.⁴¹¹ He also reserves the powers to shuffle the list of animals and birds listed in the schedules. For example he can include or move any animal and bird from the first schedule into the second and *vice versa*.⁴¹² Therefore, where it is discovered that the population of certain species listed in the second schedule is threatened due to over exploitation, the commissioner can include this animal in the first schedule, thereby placing an absolute ban on their further exploitation. In addition to this, he can alter the number of wildlife in the second schedule which may be hunted, killed or captured with a licence.⁴¹³ In order to secure the population of wildlife within a specified location, the commissioner may alter the areas in which the animals listed in the schedules may not be hunted, captured or killed except if it is authorised by the law.⁴¹⁴

Nigeria has coastal and inland wetlands which cover about 28 000 km, amounting to about 3% of the country's total land surface area.⁴¹⁵ There are also 11 wetlands in the country, which are presently on the RAMSAR list. However, these resources are being seriously threatened by factors such as population growth, increase in domestic use, urbanisation and industrialization, oil mining activities, uncontrolled tilling for crop production, over-grazing, logging and unprecedented land reclamation.⁴¹⁶ In an attempt to conserve these wetlands and ensure their sustainable use, the Minister of the Environment enacted the National Environmental (wetlands, riverbanks and lake shores protection) Regulation, 2009. Before now, there had not been any policy or legislation which specifically addressed the issue of conservation of wetland in the country. Over the years, the closest legislative instrument which has been associated with

⁴¹¹ Ibid see section 16 (1) & (2).

⁴¹² Ibid see section 5 (a) & (b).

⁴¹³ Ibid see section 5 (d).

⁴¹⁴ Ibid see section 5 (d).

⁴¹⁵ N.O. Uluocha & I.C. Okeke 'Implications of wetlands degradation for water resources management: Lessons from Nigeria' (2004) *GeoJournal* 61: 151–154 at 151.

⁴¹⁶ Ibid. see also M. Okorodudu-Fubara 'Land use planning and water laws: discordant regulatory process on wetland conservation in Nigeria' at www.iucnael.org/en/component/.../936-okorodudu-fubara-margaret.htm... Accessed on 12/06/2013.

wetland management and regulation is the forest laws, which are grossly inadequate to address the issue of wetlands.

4.7.2.4 National environmental (wetlands, riverbanks and lake shores) regulations 2009

The regulations provide for the conservation and sustainable use of the country's wetland and its resources, as well as their protection as habitats for species of fauna and flora.⁴¹⁷ It provides for the conduct of an environmental impact assessment (EIA) on activities which are likely to have an adverse effect on wetlands.⁴¹⁸ The regulation assigns various roles to the various tiers of government⁴¹⁹ with regards to achieving its objectives. Local government, due to its closeness to the rural people, is given certain responsibilities including regulation activities such as the domestic use of water, fishing activities, grazing, wood collection and hunting.⁴²⁰ It is also expected to sensitise the people on the need to use wetlands wisely.⁴²¹ Some traditional water uses are excluded from observing compliance with this regulation, provided they are carried out in a sustainable manner.⁴²²

In order to ensure sustainable use, the regulations introduced the use of permits to regulate certain activities which are related to wetland use within the country. Such activities, for which a permit will be required as contained in the second schedule of the regulations, include brick-making, cultivation, drainage construction, recreational activities such as sport fishing, road and communication facilities construction, commercial exploitation of wetlands and fishing using fish gear and weirs.⁴²³ Whenever it is discovered that the terms included in the permit have not been complied with, or that the continued use of the wetlands might cause harm to a neighbouring community, the agency reserves the right to revoke the permit.⁴²⁴

⁴¹⁷ Regulation 2 (a) (b) (c) & (d) of the Regulation.

⁴¹⁸ Ibid see regulation 3 (b).

⁴¹⁹ Ibid see regulation 4 & 5.

⁴²⁰ Ibid see regulation 6 (b).

⁴²¹ Ibid see regulation 6 (d).

⁴²² Ibid see regulation 8 (2)(a)(b)(c) (d)(e).

⁴²³ Ibid see regulations 8 and 9 (1) & (2). See also the second schedule for the complete list of the activities which will require a permit in relation to wetlands.

⁴²⁴ Ibid see regulation 11.

4.7.2.5 National Environmental (coastal and marine area protection) Regulation 2011

The Regulation is applicable to all users of the coastal and marine areas of the country. Some of its objectives include the provision of a regulatory framework for preserving the natural ecological conditions of the estuarine system, the barrier island system and the beaches in order to conserve and perpetuate their natural productivity, as well as their biological, economic and aesthetic values⁴²⁵ and to ensure the sustainable use of its coastal resources on behalf of its people.⁴²⁶ It provides that a mandatory EIA must be carried out in relation to any development activity in coastal and marine areas, as well as the conduct of an environmental audit every three years on all existing facilities.⁴²⁷

Regulation 6 contains a list of activities which are prohibited from being carried out within the coastal and marine areas of the country.⁴²⁸ Any other activities not listed in Regulation 6 are allowed to be carried out in the country's coastal and marine areas. However in order to ensure sustainability, such acts are to be regulated with permits.⁴²⁹

4.7.3 Biodiversity conservation through cultural and traditional practices

Article 10 (c) encourages parties to encourage and adopt customary use of biological resources, in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements. The Convention recognizes the role played by the cultural practices and traditional religious beliefs of the rural people towards achieving the conservation of biodiversity and requests parties to encourage the use of these practices to ensure their conservation. Some of these cultural practices and religious beliefs were discussed in chapter 3 of this research.⁴³⁰

In Nigeria, some of these traditional beliefs and practices are still in existence, and are being observed in rural areas. Some of the sacred groves are very rich in biodiversity and its

⁴²⁵ Regulation 2 (a) of the National Environmental (Coastal and Marine area protection) Regulation 2011.

⁴²⁶ Ibid see regulation 2 (f) .

⁴²⁷ Ibid see regulation 3 (b) (1) & (2).

⁴²⁸ Ibid see regulation 6 for the full list of prohibited activities within the coastal and marine areas of the country.

⁴²⁹ Ibid see regulation 7.

⁴³⁰ See 'Traditional methods of biological diversity conservation in pre-colonial Nigeria' in chapter three. See also C.V.O Eneji, G. U. Ntamu, C. C. Unwanade, A. B Godwin, J. E. BasseY, J. J. Willaims & I. Joseph 'Traditional African Religion in Natural Resources Conservation and Management in Cross River State, Nigeria' (2012) *Environment and Natural Resources Research* Vol. 2, No. 4 at 45, 46, 47 &48.

components, and relatively undisturbed.⁴³¹ However, these traditional beliefs and practices, which tend to conserve biodiversity, have themselves been under severe threat of extinction in recent times.⁴³² There are no legal structures upon which they can be implemented. Some of the factors identified to be working against them include the non-recognition of these beliefs in a court of law and the increased introduction of foreign religious beliefs which differ from the traditional cultural beliefs upon which these practices are based.⁴³³

4.8 Article - 11 Incentive Measures

4.8.1 *Economic incentives for biodiversity conservation*

Article 11 requires that parties should, as far as possible and as appropriate, adopt economically and socially sound measures that would act as incentives for the conservation and sustainable use of components of biodiversity. By so doing, the CBD is clamouring for the adoption of additional measures and procedures that would promote and encourage biodiversity conservation.⁴³⁴ This is because the application of economic incentives has been discovered to be an effective means of ensuring biodiversity conservation, most especially in bioregions.⁴³⁵ The major objective of this is to influence people's attitude by making them more desirous of conserving rather than destroying biodiversity.⁴³⁶ The application of incentives to biodiversity conservation has been described as:

“A specific inducement designed and implemented to influence government bodies, business, non-governmental organizations, or local people to conserve biological diversity or to use its components in a sustainable manner. It usually takes the form of a new policy, law or economic or social programme.”⁴³⁷

⁴³¹ G. J. Osemeobo ‘Back to tradition taboos in bio conservation in Nigeria’ (January 2013) *International Journal of Agricultural Sciences* Vol. 3 (1), pp. 351-356, at 351. See also G. J. Osemeobo ‘Is traditional ecological knowledge relevant in environmental conservation in Nigeria’ (2001) *International Journal of sustainable development and world ecology* 8:3 203-210 at 209.

⁴³² Ibid at 352.

⁴³³ Ibid.

⁴³⁴ (n 159 above).

⁴³⁵ E. Muchapondwa, H. Biggs, A. driver, F. Matose, K. Moore, E. Mungatana & K. Scheepers ‘Using economic incentives to encourage conservation of bioregions in south Africa’. Working paper number 120 at 1. A bioregion is an area which constitutes a natural ecological community for flora and fauna.

⁴³⁶ L. Emerton ‘Using economic incentives for biodiversity conservation’. IUCN economics and biodiversity programme.6 at 2 at <http://data.iucn.org/dbtw-edocs/PDF-2000002.pdf> (accessed on 29/9/2013).

⁴³⁷ Ibid.

These economic incentives can take different forms or come in different ways; however, their major objective is to make biodiversity conservation enticing and attractive to the people. These could be in form of conservation levies, tax concessions for conservation activities on private lands, payment for ecosystem services and other such measures.⁴³⁸

The radical shift away from the command and control system of enforcing environmental protection and biodiversity conservation to the use of economic incentives is more evident in developed countries. For instance, most of the environmental regulations enacted in the United States of America after the Earth Day in 1970 adopted the command and approach style of enforcement.⁴³⁹ Recent amendments into some of these laws have introduced the use of economic incentive to address environmental matters. The Clean Air Act of the United States of America⁴⁴⁰ provides some forms of economic incentives aimed at reducing emissions. The trend is gradually moving to Africa, as some countries on the continent have introduced economic incentive in respect of conservation of biodiversity. For instance, South Africa has introduced the use of property rights, which allows for the creation and allocation of certain property rights to individuals or groups. This, in turn, creates a market for biodiversity and allows the owners to benefit from the conservation, or bear the consequences of degradation. This system is operational in the national parks systems of the country as well.⁴⁴¹ A good example is the lease system at the Richtersveld National Park, whereby the local community leases the area to the government, who pays the lease fees into a trust appointed by the community to manage the funds.⁴⁴² Similarly, the Malawian government granted the local community around the Kasungu National Park the right to harvest tree caterpillars and create bee hives in order to dissuade them from other activities which are against the goals of the park.⁴⁴³

⁴³⁸ (n 435 above) at 8.

⁴³⁹ G. I. McGregor 'Environmental law and enforcement' at 1

⁴⁴⁰ Section 112 (3), (4), (5), (6) & (7) of the Clean Air Act of the USA. Major amendments to the law, requiring regulatory controls of air pollution were passed in 1970, 1999 and 1990.

⁴⁴¹ (n 436 above) at 8.

⁴⁴² Ibid at 13.

⁴⁴³ Ibid.

Examination of the Nigerian legislation discussed above reveals that they still apply the command and control system, to environmental conservation with punitive measures. For example, the Sea Fisheries Act, the National Environmental (Wetlands, River Banks and Lake Shores Protection) Regulations 2009, the National Environmental (Protection of Watershed, Mountainous, Hilly and Catchment Areas) Regulations 2009, all provides for strict punitive measures for non-compliance. Some of the policies discussed earlier contain strategies which include the use of economic incentives for biodiversity conservation. For example, the National Forest Policy⁴⁴⁴ in its strategy for achieving community participation, intends to grant tax reliefs and liberal financial agreements as incentives for commercial tree growing.⁴⁴⁵ The policy has not been transmitted into a legal document. Some of the socially sound measures adopted by both of the developing countries discussed above can be adapted and applied by the Nigeria authorities to make biodiversity conservation attractive to the local communities and to get the public more involved in the conservation process.

4.9 Article 14 - Impact assessment and minimizing adverse impacts

4.9.1 Measures for environmental impact assessment

A summary of all the provisions of Article 11 (a), (b), (c), (d) and (e) reveals the importance of environmental impact assessment and the significant role it plays towards environmental protection and biodiversity conservation.⁴⁴⁶ It is designed to foresee and give rise to precautionary or mitigatory action (as the case may be) against any imminent danger to the environment by any proposed project or activity. In a situation where the adverse effect of the proposed activity might lead to irreparable damage to the environment, such a project might be cancelled outright. The possibility of foreseeing the likely effects of a proposed project or exercise on the environment is born out of the experience acquired over the years of addressing pollution through several pollution control measures.⁴⁴⁷ EIA is an effective medium for facilitating sound decision-making, whereby the impacts of projects on the environment are

⁴⁴⁴Nigeria: National Forest Policy 2006 (n 122 above).

⁴⁴⁵ Ibid at 29.

⁴⁴⁶ M. Kidd 'EIA and the four Ps: some observations from South Africa' (in) land use law for sustainable development (ed) N. J. Chalifour, P. Kameri-Mbote, L. H. Lye, J. R. Nolon & C. O. Okidi. Cambridge University Press 2007 at 181.

⁴⁴⁷ J. D. Lesson 'Environmental law', First edition Pitman Publishing 1995 at 62.

given priority attention and consideration.⁴⁴⁸ Furthermore, it has been described as a significant tool in the world's quest for achieving sustainable development.⁴⁴⁹

EIA has been made obligatory in the provisions of different international conventions. A number of them, the CBD inclusive, request the establishment of an appropriate mechanism for determining the effect of certain activities on the environment. Other international conventions with EIA obligations include the United Nations Law of the Sea Convention,⁴⁵⁰ and the Convention on Environmental Impact Assessment in a trans-boundary context⁴⁵¹ (Espoo Convention 1991). Agenda 21 of the United Nations Conference on Environment and Development (UNCED) 1992,⁴⁵² which is a non-binding implementation action plan of the United Nations for the purpose of achieving sustainable development also provides for the conduct of an EIA. Similarly, the importance of the conduct of a diligent EIA have been emphasised and backed by the judiciary. For example, the importance of exercising a high degree of expertise and diligence in the conduct of an EIA report came to the fore in *S vs. Frylinck*,⁴⁵³ where an environmental consultant was fined for a shoddy environmental impact report which was not a result of his own incompetence, but misinformation by the scientists he employed. The court convicted him on the grounds of negligence. All these instances clearly show the importance of EIA in the process of environmental management and biodiversity conservation.

The CBD in Article 14 requested that parties develop an appropriate mechanism for determining the likelihood of any of their proposed activities having an adverse effect on biodiversity.⁴⁵⁴ Also, because public participation and consultation is integral to the success of any EIA process,

⁴⁴⁸ L. Roux & W. Du Plessis 'EIA Legislation and importance of transboundary application' (in) Land use Law for sustainable development(ed) N. J Chalifour, P. Kameri-Mbote, L. H Lye, J. R. Nolon & C. O Okidi. Cambridge University Press 2007 at 89.

⁴⁴⁹ C. O. Nwoko 'Evaluation of Environmental Impact Assessment System in Nigeria' (January 2013) *Greener Journal of Environmental Management and Public Safety* Vol. 2 (1), pp. 022-031, at 22.

⁴⁵⁰ See Article 206 of the United Nations Laws of the Sea Convention 1982.

⁴⁵¹ The Convention on Environmental Impact Assessment in a Transboundary Context(ESPOO Convention 1991).

⁴⁵² Principle 17 of the UN's Agenda 21 provides that environmental impact assessment as a national instrument shall be undertaken for proposed activities which are likely to have a significant adverse impact on the environment.

⁴⁵³ North Gauteng Regional Magistrates' Court Case No14/1740/2010 Cited in M. Kidd 'Country report: South Africa: Recent Judicial, Legislative and Policy Developments'. *IUCN Academy of Environmental Law e-Journal* Issue 2012 (1) at 194.

⁴⁵⁴ Article 14 (a) of the CBD.

the public is enjoined to be allowed to participate in the assessment process.⁴⁵⁵ The consequences of their policies and programmes on the environment and biodiversity are expected to be taken into consideration.⁴⁵⁶ There are instances where the environmental effects of a proposed activity might go beyond national boundaries. In order to address such possibilities, the CBD encourages countries to promote the exchange of information on activities under their national jurisdiction which are likely to have a transboundary effects on the biodiversity of a neighbouring state⁴⁵⁷ and, where there is an imminent danger to the diversity of a neighbouring country as a result of an activity being carried out within its national borders, to immediately notify such neighbouring country of the imminent danger.⁴⁵⁸

The implementation of Article 14 (a), (b), (c), & (d) of the CBD by Nigeria will be discussed together for two reasons. Firstly, they all basically require the establishment of a mechanism for the determination of the likely consequences of a proposed activity or programme on biodiversity and the establishment of a collaborative structure to deal with the transboundary consequences of such actions. Secondly, the provisions of the EIA Act of Nigeria, which would form the basis for the analysis of these sub-articles, encapsulate all their requirements.

In compliance with the provisions of the Convention and all other international agreements, the government of Nigeria enacted the Environmental Impact Assessment Act. Before the introduction of the legislation, the assessment of the impacts and effects of projects on the environment had been carried on a peripheral basis, as considerations prior to embarking on any project were subjected only to feasibility studies and economic value importance, without adequate consideration for environmental effects or public opinion and participation.⁴⁵⁹ However, the coming into force of the Act marked a watershed in the process for determining the impacts of a proposed project on the environment.

⁴⁵⁵ Ibid. see Kidd (n 447 above) at 188.

⁴⁵⁶ Article 14 (b) of the CBD.

⁴⁵⁷ Ibid article 14 (C).

⁴⁵⁸ Ibid article 14 (d).

⁴⁵⁹ (n 449 above) at 23.

Some of the objectives of the Act,⁴⁶⁰ which conform with the objectives of Article 14 of the CBD, include the establishment of the environmental effects of any activity or project before decisions are taken on it⁴⁶¹ and the development of procedures for information exchange, notification and consultation between organs and persons, when proposed activities are likely to have significant environmental effects on boundary or trans-state areas, or on the environment of neighbouring areas.⁴⁶²

According to the Act, environmental impacts and effects must be considered at a very early stage before the commencement of the proposed project.⁴⁶³ All the procedures to be followed in achieving this must comply with the provisions of the Act.⁴⁶⁴ The Act has the final say in determining whether or not a proposed project is likely to adversely affect the environment and should therefore require an EIA.⁴⁶⁵

The Act contains three listings, with each consisting of activities which are listed according to the magnitude of their likely effects on the environment. The first category contains a list of projects which are considered to have a likely adverse effect on the environment and therefore require a compulsory EIA before they can be carried out.⁴⁶⁶ The second category contains projects which are not likely to adversely affect the environment and therefore do not require a full EIA, except when they are to be situated in an environmentally sensitive area,⁴⁶⁷ while the third list contains projects which are considered to be beneficial to the environment. Any person willing to start a project will be required to submit a detailed EIA report, which will contain certain information that is fundamental to assessing its consequences and the implications on the environment. These will include an analysis and estimation of the extent of the activity, the technological procedure to be employed, natural resources that are available within the location and other important information about the proposed project.⁴⁶⁸

⁴⁶⁰ See the Objectives of the Environment Impact Assessment Act.

⁴⁶¹ See part 1 (a) of the EIA Act.

⁴⁶² Ibid part 1 (b).

⁴⁶³ Ibid section 2 (1).

⁴⁶⁴ Ibid section 2(2).

⁴⁶⁵ Ibid section 2(3).

⁴⁶⁶ See the list of projects listed in category one of the Act

⁴⁶⁷ See the second category of the EIA Act for the projects which are not considered to adversely affect the environment.

⁴⁶⁸ See Section 4 of the Environmental Impact Assessment Act for the content of the EIA report.

The legislation allows for public participation in the assessment process by giving various sections of the community, which includes government agencies, members of the public, experts in any relevant discipline and interested groups, the opportunity to forward their comments over the EIA report to the Agency⁴⁶⁹ before it can make its decision either in favour of or against the proposed project.⁴⁷⁰ The public would also be informed of the receipt of an EIA report by the agency through a notice to be published by it. Contents of the notice shall include the date at which the EIA will be made available to the public, locations from which it can be obtained and time limits within which comments can be filed.⁴⁷¹ In addition, its final report is made available to any interested member of the public.⁴⁷² If no person or group requests for the report, the agency is duty bound to publish its decision in a manner in which members of the public or persons interested in the activity will be duly notified.⁴⁷³

Flowing from the above remarks, it is clear that the EIA Act opens up the environmental assessment procedure to the general public and interested parties, as well as people who might be affected by the proposed project or activity, by granting them the opportunity to have a say in the assessment process through their comments, endorsement or objections. This conforms to Article 14 (a) of the CBD, which provides that the public should be granted the opportunity to participate wherever it is appropriate in the environmental impact assessment process.

In furtherance of its consistency with Article 14 (c) & (d) which provides for co-operation and communication where the environmental effects of the proposed project is likely to extend beyond the borders of one state to another or beyond national territories, the Act provides for the setting up of a review panel to assess interstate environmental impacts of a project, where the president of the country is of the opinion that the environmental impact will extend beyond the

⁴⁶⁹ See Section 63 (1) of the EIA Act. The agency here refers to the National Environmental Standards Regulatory Agency NESREA.

⁴⁷⁰ Ibid section 7.

⁴⁷¹ Ibid section 25 (1) (a) (b) (c).

⁴⁷² Ibid section 9 (2).

⁴⁷³ Ibid section 9 (3).

state to another.⁴⁷⁴ The president and the governor of the concerned states can agree on the setting up of a panel to assess the interstate effect.⁴⁷⁵

Where the effects of a project to be situated in the country is, in the president's opinion, likely to have an adverse environmental implication outside the country, or extend beyond its national jurisdiction, the Agency, working in concert with the Foreign Affairs Minister, may set up a review panel to assess the international environmental effects of the project.⁴⁷⁶ The minister is then expected to give notice of his intention to set up the panel, to the government of the neighbouring country to be so affected at least 10 days prior to setting it up.⁴⁷⁷

4.9.6 National response and international collaboration to protect biodiversity

Article 14 (e) enjoins parties to promote national arrangements for emergency responses to activities or events, whether caused naturally or otherwise, which present a grave and imminent danger to biological diversity and encourages international co-operation to supplement such national efforts.

The Shelter Belt and Ecological Disaster Relief Programme of the Nigerian government discussed under the implementation of Article 8 (d) above, was one of the national initiatives of aimed at dealing with threats to biodiversity. The objective of the programme is to render assistance to areas which are vulnerable to natural disasters within the country.

The Nigerian government entered into an agreement with its Cameroonian counterpart to set up a transboundary protected area to protect the Cross Rivers gorilla, whose survival is threatened by poaching and habitat loss.⁴⁷⁸

⁴⁷⁴ Ibid section 49 (1).

⁴⁷⁵ Ibid section 49 (2).

⁴⁷⁶ Ibid section 50 (1).

⁴⁷⁷ Ibid section 50 (2) (a).

⁴⁷⁸ United Nations Environmental Programme 'The environment in the news' September 19 2003.

4.1.0 Article 15 - Access to genetic resources

4.1.0.1 Fair and equitable mechanism for accessing genetic resources

Article 15, which reflects one of the three major objectives of the CBD, advocates that gene-rich parties should provide a flexible and accessible structure by which other parties to the Convention can access the genetic resources of their biodiversity.⁴⁷⁹ It recognises the sovereign rights of ownership of these resources by their countries of origin and reserves the authority to determine the medium of accessing them with their national government through their appropriate legislative mechanisms.⁴⁸⁰ In other words, the CBD only addressed the issue of sovereignty of states over these resources, leaving matters relating to their ownership to the national laws and practices of each country.⁴⁸¹

The inclusion of the provisions for accessing genetic resources in the CBD is significant. Prior to the introduction of restrictions, and the use of regulations for accessing biological resources, the method of gaining access to them was relatively easy, because international law had always encouraged a regime of open access to genetic resources, which come with few or no restrictions.⁴⁸² However with the discovery of the economic and financial value of these resources, this seemingly open access was gradually phased out and replaced with certain restrictions and barriers which are put in the way of a bio-prospector.⁴⁸³

A general analysis of Nigeria's implementation of Article 15 of the CBD will be given below. This is because the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation of Nigeria addresses most of the issues raised in the provisions of Article 16 of the CBD.

The procedure for obtaining access to genetic resources from Nigeria has been carried out on both sides of the paradigm, growing from the era of open/free access where bio-prospecting

⁴⁷⁹ Article 15 (a) of the CBD.

⁴⁸⁰ Ibid article 15 (1) & (2).

⁴⁸¹ (n 159 above).

⁴⁸² N. P. Stoianoff 'Accessing biological resources, complying with the convention on biological diversity' at xiii.

⁴⁸³ Ibid.

regulation was done on an *ad hoc* basis due to the absence of substantive legislation,⁴⁸⁴ to the modern period of regulated access through the provision of a formal regime.⁴⁸⁵ Most of the laws available during the former period do not contain any direct formal procedure for accessing these resources; they only contain provisions which touch indirectly on the issue. For instance, the National Crop Varieties and Livestock Breed Decree of 1987 sets up a committee which works in collaboration with the genetic resources unit of the Federal Ministry of Science to receive and process applications for the registration, naming and release of old and new crop varieties and livestock breed within the country. It however does not contain any provision regarding the procedure for accessing genetic resources by a bio-pro prospector.⁴⁸⁶

Similarly, the introduction of the National Agricultural Seed Decree⁴⁸⁷ marked no significant difference. The Act established the national agricultural seed council, the functions of which include the responsibility to analyse and propose programmes, policies and actions regarding seed development. Its function include the development of legislation and the conduct of research into issues relating to seed testing, regulation, release, production, marketing, distribution, certification, quality control, supply and use of seeds in the country.⁴⁸⁸ It provided a procedure for an application to export or import certain seeds within or outside the country. It does not contain provisions for accessing genetic resources within the country.

According to Ajai,⁴⁸⁹ these two laws were made before the coming into force of the CBD. They therefore fall short of its procedure for accessing genetic resources. Even though they have some form of compliance with the provisions of the FAO standards on plant genetic resources, they are

⁴⁸⁴ K. Nnadozie 'Access to genetic resources in Nigeria' (in) African perspective on genetic resources A handbook on Law, policies and institutions governing access and benefit sharing (ED) K. Nnadozie, R. Lettington, C. Bruch, S. Bass & S. king. Environmental Law Institute 2003 at 182.

⁴⁸⁵ The National Park Service Act as well as the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation both signalled the era of regulated access to genetic resources in the country, in compliance with the Convention for Biological Diversity.

⁴⁸⁶ Section 5 (1) of the National Crop Varieties and Livestock Breed (regulations etc.) ACT CAP.249 L.F.N 1990 Act CAP. N27 L.F.N 2004. See also O. Ajai 'Access to genetic resources and biotechnology in Nigeria' (1997) *RECIEL* Volume 6 Issue 1 at 42.

⁴⁸⁷ National Agricultural Seed Decree 72 1992 Act CAP .N5 L.F.N 2004.

⁴⁸⁸ Section 3 (a) of the Act

⁴⁸⁹ O. Ajai (n 486 above) at 42

inadequate for the purpose of the CBD, because there are no provisions for prior informed consent and mutually agreed terms, as well as benefit-sharing, in these legislations.

In compliance with the provisions of Article 15 of the CBD, the National Park Service Act⁴⁹⁰ was enacted and contains provisions for the facilitation of access to the genetic resources of the country by a bio-pro prospector. It states that the consent of the Minister must be obtained before any prospecting activity can be carried out within the national parks.⁴⁹¹ The prior informed consent provision in this Act brings it in line with the stipulations of Article 15 (5) of the CBD.⁴⁹² It protects indigenous people's intellectual property rights while also creating an avenue for them to benefit from the use of these rights.⁴⁹³ A prospector for genetic materials must comply with certain conditions stipulated by the legislation before consent to prospect can be granted to him. These conditions include securing research collaboration with Nigerian scientists, making periodic reports concerning the subsequent use of these genetic resources and sharing the benefit from these resources with the government and people of Nigeria.⁴⁹⁴ These provisions of the National Park Service Act tally with the ones contained in Article 15 of the Convention. Therefore, it is fair to say that the provision for accessing genetic resources as contained in this national legislation, complies with the CBD.

In spite of the above submission, the Act still seems inadequate, because it addresses the issue of accessing genetic resources within the national parks and federal reserves, only.⁴⁹⁵ In an attempt to bridge this gap and strengthen the structure for assessing genetic resources, as well as ensuring further compliance with the provisions of this article of the CBD within the country, the Nigerian authorities enacted the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation, which is aimed at providing an easy access to the country's genetic

⁴⁹⁰ The National Park Service Act discussed earlier under the implementation of article 8 (b) above.

⁴⁹¹ Section 35 (1) of the National Park Service Act.

⁴⁹² See article 15 (4) CBD.

⁴⁹³ Sec 3(2) of the Act provides that "no transfer of a genetic material or indigenous knowledge relating to a genetic material owned or in possession or custody of a Nigerian citizen, group or association shall be made except with the written consent of that citizen, group or association, which may be given subject to arrangement being made to share research opportunities and benefits derived from the genetic materials or indigenous knowledge relating to the genetic material.

⁴⁹⁴ Section 4 (a) (b) & (c) of the National Park Service Act.

⁴⁹⁵ (n 484 above) at 188.

resources by a bio-pro prospector and ensuring fair and equitable distribution of the benefits of its genetic resources to the indigenous people.⁴⁹⁶

In terms of the regulation, an application for a permit to prospect for genetic materials must be made to the Agency in a prescribed form and must be accompanied by evidence that the potential prospector has sought and obtained the prior informed consent⁴⁹⁷ of any interested party, the local communities and other stake-holders or relevant agencies. Amokaye⁴⁹⁸ has highlighted two advantages of the prior informed consent requirement in this regulation. Firstly, with the system of plural land ownership system being practised in Nigeria, physical land control does not suffice as legal ownership. This provision thus seeks to protect the individual and local communities who only have physical control over such land and to ensure that they are consulted before an access permit is granted. Secondly, it reduces the possibility of conflict between the bio-pro prospector and the local communities, after permission to prospect has been granted by the federal government. In addition, in compliance with Article 14 of the CBD, the regulation requires that an EIA should be carried out and its report submitted to the Agency.⁴⁹⁹

The procedure for the EIA has to be in compliance with the provisions of the Environmental Impact Assessment Act, discussed above. Although the regulation fails to specify a time at which the EIA report is to be submitted, it is reasonable to believe that it should be submitted with other documents during the initial application for the access permit.⁵⁰⁰

The application must include a material transfer agreement (MTA)⁵⁰¹ between the interested parties, i.e. the local gene providers, which may be a public institution or local communities, and foreign gene-users or prospectors. Despite the fact that the MTA is a private agreement between the parties, the Regulation provides that certain information must be disclosed by the MTA. This

⁴⁹⁶ O. G. Amokaye 'Access to and Sharing of Benefit of Genetic Resources under the Nigeria Law' (2012) *British Journal of Arts and Social Sciences* ISSN: 2046-9578, Vol.8 No.II at 242.

⁴⁹⁷ See regulation 6 which is in compliance with Article 15(5) of the Convention on Biological Diversity, Article 24 of Bonn Guidelines on Access and Article 6(1) of the Nagoya Protocol.

⁴⁹⁸ (n 496 above) at 243.

⁴⁹⁹ Regulation 1 of the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation.

⁵⁰⁰ (n 496 above) at 245.

⁵⁰¹ Regulation 7 of the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation.

includes information on the identity of the parties to the agreement, compliance and reference to the Convention for Biological Diversity, the legal status of the parties, their general objectives and details of the genetic resources covered by the agreement.⁵⁰²

In order to ease the problems which might be encountered during the negotiation of the benefit-sharing agreement between the prospector and the gene owner, the Regulation imputed certain terms which can be employed by the parties to the bio-prospecting, and can be incorporated into their agreement. This is not detrimental to them and does not diminish their rights to make a private agreement.⁵⁰³ There are certain conclusions which can be drawn from the insertion of these terms in the agreement by the Regulation. Firstly, it gives citizens of the country an opportunity to be involved in the execution of the access conditions in the permit granted. In other words, Nigerian citizens and institutions will be engaged in both the technical and non-technical aspects of the execution of the permit, as well as providing an opportunity to earn a living.⁵⁰⁴

There are also certain monetary and non-monetary advantages that accompany the permit, for example the monetary benefits could include the payment of fees which include access fees, royalties, licence fees (in case of commercialisation), special fees payable to conservation and biodiversity trust funds, advance payments, milestone payments, research funding, salaries and preferential terms, joint ventures, joint ownership of intellectual property rights and proceeds from access to traditional knowledge.⁵⁰⁵ Other considerations, apart from monetary benefits, could include the collaboration and exchange of scientific data on the genetic resources, “transfer of knowledge and technology to the genetic provider under fair and most favourable terms, including concessional and preferential terms”, among other benefits.⁵⁰⁶

⁵⁰² Schedule 3 of the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation.

⁵⁰³ (n 496 above) 246.

⁵⁰⁴ Schedule 3 of the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation. See also (n 496 above) at 247.

⁵⁰⁵ Ibid.

⁵⁰⁶ Ibid.

A request for a permit to prospect must be published in at least two national newspapers.⁵⁰⁷ The advert must contain specific information such as the names and particulars of the applicant, the activity for which the permit is required, location of the genetic materials, the country of destination of the resources and the time frame within which an objection can be brought against the granting of the permit by any interested party.⁵⁰⁸ The imputation of this provision into the regulation affords the stakeholders the opportunity to comment on such requests and raise objective complaints and opposition to the grant if there is a reasonably cogent and fundamental reason to do so. If for instance, grant will be harmful to the environment, it could threaten the biodiversity and be harmful to the ecosystem, or displace or reduce the wildlife population within the area.⁵⁰⁹

The lifespan of an access permit is one year and it can be granted with conditions or unconditionally.⁵¹⁰ Various reasons, ranging from environmental to social and economic, could be responsible for the conditions attached to the permit by the Agency.⁵¹¹ The Agency also reserves the authority to revoke, amend, alter or vary the permit upon request of the holder.⁵¹² The Agency has a duty to keep and update a register of access permits which contain details about the permit applicant, the nature of the permit granted, its duration and other vital information in the public register. It must be available for anyone who requires information about bio-prospecting and genetic resources in the country.⁵¹³ In order to respect the confidence of the bio-prospector, the regulation requires that, where an applicant has requested that certain information presented to the agency in relation to it accessing the country's genetic resources should be held in confidence,⁵¹⁴ such information shall not be made available to any person who applies to inspect the access register.⁵¹⁵

⁵⁰⁷ Regulation 8 of the National Environmental (Access to Genetic Resources and Benefit Sharing) Regulation.

⁵⁰⁸ Ibid.

⁵⁰⁹ (n 496 above) at 244.

⁵¹⁰ Regulations 13 & 14(1) (Access to Genetic Resources and Benefit Sharing) Regulation.

⁵¹¹ Ibid.

⁵¹² Ibid see regulation 14 (3).

⁵¹³ Ibid see regulation 16.

⁵¹⁴ Ibid see regulation 20.

⁵¹⁵ Ibid see regulation 20(2).

No one is allowed to prospect for genetic resources within the country without the issuance of an access permit from the agency.⁵¹⁶ Anyone who breaches this provision shall, upon conviction, be liable to a fine which varies according to the categories of the offence or offender.

⁵¹⁶ Ibid see regulation 5 (1) & 23 (1) (Access to Genetic Resources and Benefit Sharing) Regulation

CHAPTER 5

5.0 Conclusions and recommendation

The Convention for Biological Diversity plays a very important role in the world's quest to conserve its biodiversity and ensure its sustainable use. However, the effectiveness of this role would not be feasible if its provisions were not adequately implemented by parties to it.

This dissertation has been able to critically analyse the implementation of some selected articles of the CBD by Nigeria. It has pointed out the weaknesses and strengths in the country's implementation and has made reference to activities in other jurisdictions, most especially South Africa, to identify ways of improving Nigeria's implementation. A summary of the issues raised in relation to each of the articles will be presented below.

Article 6 – In accordance with the provisions of this article, countries are expected to implement policies and programmes towards the conservation of biodiversity. They are expected to incorporate biodiversity conservation into their national and sectoral plans. As seen in the earlier part of Chapter 4, these provisions have been substantially complied with by Nigeria. It is, however, important to note that despite all these policies, a comprehensive biodiversity conservation law or legislation has failed to evolve from them.⁵¹⁷ Environmental policies can only be effectively implemented if they are backed up by an enabling legislation.⁵¹⁸

Article 8 – The CBD advocates for the adoption of the *in situ* conservation approaches to biodiversity conservation, which is achievable through the creation of protected areas. Other activities, such as the encouragement of environmentally sound practices around the protected areas, the restoration of degraded ecosystems, prevention of the introduction of alien species, regulation of the movement and use of genetically modified organisms to protect human beings

⁵¹⁷ See the analysis of Article 6 in chapter 4 above.

⁵¹⁸ M. Kidd & M. Mayet 'Access to genetic resources in South Africa' (IN) African perspective on genetic resources/ a handbook on law, policy and institutions (ed) K. Nnadozie, R. Lettington, C. Bruch, S. Bass & S. King. Environmental law institute 2003 at 231.

and the environment, and the protection of endangered species, are other programmes which are encouraged in Article 8 of the CBD.

In terms of the establishment of protected areas, the Nigerian authorities have made some progress. There are biodiversity-rich spots which have been designated as protected areas in the country, although some of them have been poorly managed. The National Park Service Act and Forest Act, as well as the forest laws discussed above, have means for establishing and managing these protected areas, thereby complying with Article 8 (b) of the CBD. The National Park Service Act grants the National Park Service Agency the powers to create buffer zones around the protected areas whenever it is necessary to promote sound environmental practices around these areas.

In compliance with Article 8 (g), however, the country's biosafety regime is yet to evolve, as its biosafety guidelines have not been transmitted into full-fledged biosafety legislation, in spite the fact that it was drafted over seven years ago. In addition to this, the law relating to the protection of endangered species in Nigeria is grossly inadequate in terms of complying with the provisions of the CBD. It only protects wildlife biodiversity, leaving out the agro and ecosystems, which are all included in the CBD. This research is not oblivious to the fact that the legislation was enacted to implement the CITES convention. In relation to ecosystem restoration, there are not enough academic records of restoration of degraded ecosystems being undertaken by the government within the country. Most of the activities are being carried out by local NGOs and international biodiversity organisations in Nigeria. The provisions of the EGASPIN regulation have also been inadequate to guarantee ecosystem restoration within the oil-degraded areas of the country.

Articles 9 *ex situ* conservation – The call for the establishment of facilities to ensure *ex situ* conservation of biodiversity have been heeded by the Nigerian authorities. There are various research institutes with facilities for ensuring *ex situ* conservation of biodiversity in the country. However, as in the case of protected areas, some of these facilities are not properly maintained and are inadequately funded.

Article 10 – Generally, this article request parties to ensure sustainable use of biodiversity and its resources. An analysis of Article 10 shows that Nigeria has a number of laws and regulations aimed at ensuring the sustainable use of its biological resources. They consist of both federal and state laws. However, despite the existence of these laws, the rate of biodiversity loss has not decreased. This confirms the poor level of enforcement of these laws.

Article 11 – The Convention enjoins parties to employ the use of economic and social incentives in their quest to ensure the conservation of biodiversity. Judging from the analysis of the Nigerian legislation discussed above, it is clear that they largely still adopt the command and control approach towards environmental matters. This falls short of the requirements of article 11 of the CBD

Article 14 – This article provides for the introduction of an environmental assessment structure in order to determine the likely impact of certain projects on biodiversity and to take precautionary or mitigatory measures to minimise such impacts, or to cancel the proposed project completely. Party members are enjoined to inform neighbouring countries of any activity which is likely to affect the biodiversity of such neighbouring country. The Environmental Impact Assessment Act of Nigeria complies with the provisions of Article 14 of the CBD. The legislation provides for the compulsory conduct of an EIA in connection with certain projects which are considered to be detrimental to the environment. It provides for a medium of exchange of information, where the effects of any proposed project are likely to extend beyond state and national jurisdiction. Furthermore, it creates room for the public to participate actively in the assessment process, which is a core mandate of Article 14 (a) of the CBD.

Article 15 – This article encourages bio-rich countries to establish a fair mechanism through which other party countries can access their genetic resources. It contains certain requirements which are expected to ensure fairness in bioprospecting agreements. For example, it provides that the agreement must be based on mutually agreed terms and must be subject to prior informed consent of the contracting parties. The Parties are to develop and carry out scientific research based on genetic resources provided by other Parties and with their full participation. The National Environmental (access and sharing of benefits) Regulation incorporates all the

requirements of Article 15 of the CBD, such as obtaining the prior informed consent of both parties to the bio-prospecting agreement and the requirement that the contract should be based on mutually agreed terms.

A summary of all these articles reveals that Nigeria has complied with the CBD in some respects, by implementing its provisions, while it has failed to meet up with them in others. This research has shown that, in example where Nigeria has complied, for instance through the enactment of laws and regulation, their enforcement has been weak.⁵¹⁹ This accounts for the high rate of biodiversity loss which is still being experienced within the country. The problem of illegal fishing has persisted, despite the enactment of the Sea Fisheries Act by the federal government. State legislation on biodiversity protection has also been ineffective, due to problem of poor implementation. For example, an impact assessment conducted into fishing activities in Niger state reveals that fisheries laws are not in operation in some of the areas where the assessment was conducted, because most of the prohibited fishing gear is still being freely used.⁵²⁰

Similarly, despite the existence of forest reserves, the Forest Act and the various forest laws of the states, Nigeria has been rated as having the world's highest deforestation rate of its primary forest.⁵²¹ Most of the land remaining under forest is likely to be absorbed into arable land if drastic measures are not taken to prevent this. These occur, in spite the fact that there are forest conservation policies and law in the country. This is just to support the position that what is lacking in the country is the sincere will to enforce these laws. It is evident that these problems are not a result of lack of appropriate regulatory and legislative framework, but are purely due to lack of appropriate enforcement. Enforcement is the bedrock of effective implementation and is very important in achieving the objectives of any legislative framework, including the CBD in

⁵¹⁹ S. A. Abere 'Evaluation of Forest Resources Conservation Laws In Nigeria' (October 2011) *Mediterranean Journal of Social Sciences* Vol. 2 (5) at 51.

⁵²⁰ A. Raji, A. N. Okaeme, W. Omorinkoba & R. L. Bwala 'Illegal fishing of inland water bodies of Nigeria: kanji experience' (2012) *Continental J. Fisheries and Aquatic Science* 6 (1): 47 - 58, 2012 ISSN: 2141 – 4246 *Wilolud Journal*, at 48.

⁵²¹ See the illegal logging portal at www.illegal-logging.info/content/nigeria-has-worst-deforestation-rate-fao-revises-figures (accessed on 12/ 11/2013).

Nigeria.⁵²² According to Senator Joseph Lieberman, “without enforcement, most of the rest of environmental protection lacks meaning, lacks truth, lacks reality.”⁵²³ The enactment of laws is a pathway to ensuring biodiversity conservation, which is to be complemented with effective enforcement.

Lack of enforcement is traceable to the absence of political will and sincerity on the part of the government.⁵²⁴

Based on the above analysis, the following recommendations are addressed to the Nigerian government to further enhance its available structures towards achieving proper compliance with the provisions of the Convention

- The domestication of the Convention into its national laws.
- The review and amendment of the available biodiversity laws and policies in order to inculcate the strategies required by the Convention into them, thereby bringing them into alignment with it. For example, the scope of the Endangered Species Act should be widened to incorporate the biodiversity species listed in the CBD.
- The government should ensure adequate and proper enforcement of the provisions of its biodiversity conservation laws and regulations.
- Taking a cue from South Africa, the Nigerian parliament should promptly pass the biosafety bill, to usher in the biosafety regime of the country.
- Having identified poverty as a major source of biodiversity loss, the Nigerian authorities should endeavour to put in place formidable structures and measures to deal with the scourge of poverty in their respective territories.

⁵²² J. A. Mintz, C. Rechtschaffen, R. Kuehn ‘Environmental enforcement: cases and materials’ Carolina academic press 2007 at 3.

⁵²³ Ibid.

⁵²⁴ E. P. Amechi ‘Litigating right to healthy environment in Nigeria: an examination of the impacts of the fundamental rights (enforcement procedure) rule 2009, in ensuring access to justice for victims of environmental degradation’. (*Law, Environment and Development Journal*) vol 63 at 322. See also S. Alabi ‘Country report: Nigeria Recent Developments in the Niger Delta of Nigeria’. *IUCN academy of environmental law e journal* issue 2010(1) at 162, and also O. Adekola, S. Whanda & F. Ogwu ‘Assessment of Policies and Legislation that Affect Management of Wetlands in Nigeria’. *Springer journals*. Wetlands DOI 10.1007/s13157-012-0299-3 at 11.

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