AN ANALYSIS OF DOMESTIC IMPLEMENTATION OF THE KYOTO PROTOCOL ON CLIMATE CHANGE IN NIGERIA

BY

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DECLARATION

I declare that this project titled: **"An Analysis of Domestic Implementation of the Kyoto Protocol on Climate Change in Nigeria"** has been carried out by me. The information derived from other literatures have been duly acknowledged. No part of this project has been previously presented for another Masters Degree at this or any other institution.

_____ **_____**

BABAMALE M. Kudirat **Date**

CERTIFICATION

This Project Report titled: "**An Analysis of Domestic Implementation of the Kyoto Protocol on Climate Change in Nigeria**" by BABAMALE M. Kudirat meet the regulatory governing the award of the Master of Arts Law Degree in Public Law of the Ahmadu Bello University, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This work is dedicated to my husband, Adedokun Abdulakeem and my lovely children Fadheela Abdulakeem and Faiza Abdulakeem.

ACKNOWLEDGEMENT

I remain grateful to Almighty Allah (S.W.T) for the people He strategically positioned in my life in the course of this work.

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1. Environmental Impact Assessment Act 1992

2. Federal Environment Protection Agency Act 1988

3. Harmful Wastes (Special Criminal Provision) Act 1988

4. Kyoto Protocol to the United Nations Framework Convention on Climate Change 1998

5. United Nations Framework Convention on Climate Change 1992

TABLE OF ABBREVIATIONS

CN-CCCD: Canada-Nigeria Climate Change Capacity Development Project

COPS: Conference of the Parties

ECF: European Climate Forum

EGASPIN: Environment Guidelines and Standards for the Petroleum Industry in Nigeria

ERUs: Emission Reduction Units

EU: European Union

FCCC: Framework Convention on Climate Change

FME: Federal Ministry of Environment

GHGs: Greenhouse Gases

IAI: Inter-American Institute for Global Change Research

IET: International Emission Trading

IPCC: Intergovernmental Panel on Climate Change

IPPA: Institute for Public Policy Analysis

JIM: Joint Implementation Mechanism

NEST: Nigerian Environmental Study Action Team

SST: Sea Surface Temperature

UN: United Nations

UNFCCC: United Nations Framework Convention on Climate Change

WCRP: World Climate Research Programme

WMO: World Metrological Organization

WSSD: World Summit on Sustainable Development

ABSTRACT

The global nature of climate has become very well appreciated in the developing as well as developed world. For example, in its recent Summit in Gleneagles, Scotland, in the United Kingdom, the leaders of the G8 nations very significantly remarked that climate changed is happening now, that human activity is contributing to it, and that it could affect every part of the globe. In its resolutions, the G8 leaders noted thus "The Gleneagles plan of Action which we have agreed demonstrates our commitment. We will take measure to develop markets for clean energy technologies, to increase their availability in development countries, and to help vulnerable communities adapt to the impact of climate change.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Climate is the regular pattern of weather conditions of a particular place that is either mild, temperate, warm or wet. Is a general attitude or feeling an atmosphere or a situation which exists in a particular place.[1] Climate includes patterns of temperature, precipitation, humidity, wind and seasons. "Climate change" affects more than just a change in the weather; it refers to seasonal changes over a long period of time. These climate patterns play a fundamental role in shaping natural ecosystems, and the human economies and cultures that depend on them.

Climate can also be defined in a narrow as well as a wider sense. Climate in a narrow sense is usually defined as the average weather or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands of years. The classical period is three decades, as defined by the World Meteorological Organization (WMO). These quantities are most often surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system.[2]

Climate Change on the other hand, refers to a statistical significant variation in either the mean state of the climate or in its variability, persisting for an extended period typically for decade or longer. Climate Change may be due to natural processes or extended forcing, or to persistence

[1] Oxford Advance Learner's Dictionary. Oxford University Press,Oxford,7th Edition (1948) pg. 264
[2] Nwafor, J.C: Environmental Impact Assessment for Sustainable Development. El'Demak, Enugu, First Edition (2006) pg 360

anthropogenic changes in the composition of the atmosphere or in land use. The United Nations Framework Convention on Climate Change (UNFCCC) in its Article 1, defines climate change as: a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time period (UNFCCC 1993).[3]

The UNFCCC makes a distinction between climate change attributable to human activities altering the atmospheric composition, and climate variability attributable to natural causes. The human-induced changes in the global environment due to increase in emissions of greenhouse gases (GHG) are qualitatively different from those seen before, when climate varied naturally and slowly on many time scales Climate Change in intergovernmental panel on climate change (IPCC) usage refers to any change in climate over time, whether due to natural variability or as a result of human activity.[4]

The Earth's climate is affected by the interaction of radiation from the sun and the Earth's atmosphere .The atmosphere and the surface of the earth absorb part of the sun's radiation but the remainder is reflected back into space. The greenhouse gases have the important function of trapping this radiation in the lower layers of the earth's atmosphere. This process is called "greenhouse effect" without which the earth would be as cold as the moon. It is now understood that increase concentration of greenhouse gases in the atmosphere will increase the greenhouse effect and lead to changes in the earth's climate.[5]

[3] Ibid
[4] Ibid pg. 361
[5] Ladan, M.T: Material and Cases on Public International Law. Ahmadu Bello University Press, Zaria,(2007) pg 502

Natural events can also cause changes in the climate. For example volcanic eruptions or variations in ocean current can alter the distribution of heat and precipitation. The periodic warming of the central and eastern Pacific Ocean (better known as "El Nino" phenomenon) can affect weather patterns around the world, causing heavy rainfall in some places and drought in others.[6]

Human activities are now recognized as contributing to climate change. During recent years, scientist have been able to collect evidence of changes in temperature, rainfall and other variables. This data suggest that over the twentieth century the average world temperature increase by 0.6 Celsius. The data also demonstrates an increase in the quantity of greenhouse gases in the atmosphere of up to 30% especially carbon dioxide. Carbon dioxide is partly produced as a result of human activities such as burning coal, oil and natural gas as well as agricultural activities and deforestation.[7]

Such a significant increase in the average world temperatures will lead to serious impacts on the environment. Climate change expert predict that this global warming will cause increased rainfall in many areas, increase desertification in others, and the loss of ice cover in the Polar Regions. The average sea level is predicted to rise by up to eighty-eight centimeters by the end of the twenty-first century, posing a different threat to low lying delta system and small island states. The most serious consequence is likely to be the impact on agriculture and thus food safety, especially due to increase water shortages.[8]

[6] Ibid
[7] Ibid
[8] Ibid pg. 503

While there has been some debate over the degree to which human influenced emissions have contributed to climate change, there is now general consensus that concerted actions need to be taken to minimize and mitigate the problems which global warming is starting to cause.[9]

Because so many systems are tied to climate, a change in climate can affect many related aspects of where and how people, plants and animals live, such as food production, availability and use of water, and health risks.

For example, a change in the usual timing of rains or temperatures can affect when plants bloom and set fruit, when insects hatch or when streams are their fullest. This can affect historically synchronized pollination of crops, food for migrating birds, spawning of fish, water supplies for drinking and irrigation, forest health, and more.[10]

Some short-term climate variation is normal, but longer-term trends now indicate a changing climate. A year or two of an extreme change in temperature or other condition doesn't mean a climate change trend has been "erased."

Worldwide, people are paying serious attention to climate change. In Washington State, climate change is already disrupting our environment, economy and communities. We can help slow it down, but we must take action now.[11]

There is widespread consensus in the climate research community that human activity are changing the climate through the release of greenhouse gases particularly carbon dioxide (co2),

[9] Ibid
[10] www.ecy.wa.gov/climate change assessed on 22nd September 2014
[11] Ibid

into the atmosphere[12]. Most investigation and public attention have focused on the projected climate change in this century. A potentially far more serious problem is the global warming anticipated in subsequent centuries if greenhouse gas emissions continue to increase unabated[13]. In other to alleviate or reduce the negative impacts of climate change as well as mitigate the possible impacts, hence the establishment and demonstrations of global actions to tackle or probably to find the lasting solutions to the problems arising from the said global phenomenon. Since the United Nations framework convention on climate change (UNFCCC) of Rio in Brazil in 1992 which form the foundation for the global response to climate change, global attention has been focused on it. The Objective of the 1992 UNFCCC is to tackle the negative effect of climate change. The Convention's stated aim is to stabilize greenhouse gas concentration at the level that allows ecosystems to adopt naturally to climate change so that food production is not threatened, while enabling economic development to proceed in a sustainable manner.[14]

The Conference of Parties ("COP") to the UNFCCC is established as the supreme body of the convention and has the function inter alia to review the implementation of the convention, periodically examine the obligations of the parties and the institutional arrangements established, promote the exchange of information, facilitate at the request of two or more parties the coordination of measures taken to address climate change, promote and guide the development of comparable methodologies for the preparations of inventories, assess the implementation of the conventions by the parties, consider and adopt regular reports on implementation and make recommendations on any matters necessary for the implementation of the convention.[15] In

[12] Hasselmann, K.et. al. The Challenge of Long –Term Climate Change(Viewpoint vol. 302 12 Dec,2003).www.sciencemag.org 16th June, 2009
[13] Ibid
[14] Ladan, M.T., op.cit
[15] Shaw, M.N: International Law. Cambridge University Press, Cambridge; 5th Edition (2003) pg. 788

addition, the convention provides for a secretariat to be established together with a subsidiary body for scientific and technological advice and a subsidiary body for implementation.[16] The convention as a whole is a complex document and the range of commitment entered into, particularly by developed country parties, is not wholly clear.

The convention entered into force in 1994 and the following year the first session of the conference was held in Berlin. It was agreed that the pledge by the developed country parties to reduce emissions by 2000 to 1990 levels were not adequate and preparations were commenced to draft a further legal instrument by 1997.It was also agreed not to establish new commitments for developing country parties, but rather to assist the implementation of existing commitment. The parties decided to initiate a pilot phase for joint implementation project, providing for investment from one party in greenhouse gas emissions reduction opportunities in another party. In addition, it was decided to establish a permanent secretariat in Bonn and two subsidiary advisory bodies.

The 1997 Kyoto Protocol[17] commits developed country parties to individual, legally binding targets to limit and reduce their greenhouse gas emissions adding up to a total cut off at least 5 per cent from 1990 levels in the 'commitments period' of 2008 – 2012.Developing countries are obliged simply to meet existing commitments. Certain activities since 1990 which have the effect of removing greenhouse gases, such as forestry scheme, may be offset against emission targets. The Protocol also allows states to aggregate their emissions thus allowing, for example, European Union members if they wish to be counted together permitting less developed members to increase emissions on the account of other members. In addition, state may receive credit for supporting emission-reducing projects in other developed states ('joint

[16] Ibid
[17] Ibid pg.789

implementation') and in certain circumstances in developing state ('the clean development mechanism'), and the possibility has been provided for trading emission permits, so that some countries may purchase the unused emissions quotas of other countries ('emissions trading').[18]

To assess the success of member states in achieving the reduction in greenhouse gas emission, there was a follow up conference held at Doha, Qatar in December 2012, known as ''Doha 2012'', where the Doha Amendment to the Kyoto Protocol was adopted. The amendment includes the new commitment for Annex 1, parties to the Kyoto Protocol who agreed to reduce their greenhouse emission by 2012 took on a new period of 1st January 2013 to 31st December 2020.[19]

The Kyoto Protocol was established by the global community although with some set back[20]. The impact of the Kyoto Agreement is hardly discernable on the millennial time scale, suggesting that the Kyoto debate should focus on the long- term implications of the protocol rather than its short- term effectiveness[21].

The Government of Nigeria has over the years show a commendable understanding of the issues associated with climate change[22]. The country is a signatory to many international conventions and Protocols targets towards addressing the various issues associated with climate change such as the need to mitigate and or adapt to climate change[23].The country is for example a signatory to the United Nations Framework Convention on climate change (UNFCCC). The convention establishes "policy guidance" for the various countries of the world to access the implication of

[18] Ibid
[19] Kyoto Protocol, www.unfccc.int/kyotoprotocol/dohaamendment/items/7362.php assessed on 27th April,2013 at 1,15pm
[20] Troman, S: "Climate Change, Energy and Planning" (2007) Journal of Planning and Environmental Law page 357
[21] Ibid
[22] Yamin, F: "An analysis of the Kyoto Protocol" (1998)) 10 International Journal of Environmental Pollution pg. 428
[23] Ibid

the increasing greenhouse gases (GHGS) in the atmosphere and to take steps in stabilizing or reducing them to endanger environmentally sustainable economic development. Under the UNFCCC, the Kyoto Protocol was developed which Nigeria is a signatory to[24].

Human activities has, in the last 100 years ,contributed to an increase in the concentration of 'greenhouse gases' in the atmosphere leading to the 'enhanced' greenhouse effect which in turn is expected to result in climate change, arguably the most important and dangerous, and certainly the most complex, global environmental issue to date.[25]

Climate change is already beginning to transform life on Earth. Around the globe, seasons are shifting, temperatures are climbing and sea levels are rising. And meanwhile, our planet must still supply us – and all living things – with air, water, food and safe places to live. If we don't act now, climate change will rapidly alter the lands and waters we all depend upon for survival, leaving our children and grandchildren with a very different world.

1.2 Statement of the Problem

Climate change phenomenon has become a subject of international discussion, because of the devastating effect it poses to the survival of humanity. This has made it imperative to have an international frame work through treaties and other international instrument to bring to bear the impact it possess.

Therefore, this research shall examine the following

i. What is the effect of climate change globally?

[24] Ibid
[25] Ibid

ii. What are the various organizations which saddle with the responsibility in finding solutions to climate change?

iii. What are the rationalities that brought about Kyoto protocol?

iv. How far has the mechanism under Kyoto protocol help Nigeria in reducing the impact of climate change?

v. What are the effects of climate change on Nigeria's economy, social, and environment?

1.3 Justification

The study of this type is significant because of the nature of climate change which affects every facet of natural life of existence. It is said that the climatological dynamics are mind-numbingly complex while the scope of the policy issues encompassing economic, ethical, social and even political aspect, seem limitless. However, climate change policy framework should be realistic and should form an integral part of the national development planning process in every country.

1.4 Aims and Objectives of the Study

The aim of this research work is

i. To examine the cause and effect of climate change

ii. To examine the solutions in order to mitigate and find a lasting solution to the effect of climate change

iii. To examine Kyoto protocol and the ratification by Nigeria.

iv. To look into the implication of adoption of Kyoto Protocol in Nigeria.

1.5 Scope and Limitation of the Research

This research shall focus on the implementation of Kyoto Protocol in Nigeria as well as National response in terms of adaptation and mitigation on Climate Change. It shall also focus generally on Kyoto Protocol, the Nigerian participation or membership of the Protocol and its implication.

The research shall be limited to the implication of Climate Change and the solutions preferred by adopting the mechanisms under the Kyoto Protocol as well as the way forward.

1.6 Research Methodology

In order to achieve the objective of this research, doctrinal method of research shall be used. These include statutory books and case law, for example international treaties, conventions and protocol. The research shall also source materials from books, article by prominent scholars, internet and other useful materials necessary to facilitate the study.

1.7 Literature Review

Many authors have written on international environmental law, few have written on Kyoto protocol particularly Nigeria's participation in Kyoto protocol. A review of the relevant authorities is important to enhance the credibility of the study .Some human right activist have written on the need to protect the environment we live because it is integral part of right to life encaptured in almost all National law.

According to a commentator[26], while commenting on the future of Nigeria's economy because of the effect of global warming said:

[26]Ikeme, J: Assessing the Future of Nigeria's Economy Ignored Threats From The Global Climate Change Debacle(Africa Journal on Economy Analysis 2001) pg 61

Policies adopted globally to mitigate climate change (global warming) have negative implications for specific sectors such as the coal, oil, and gas industries. Nations relying exclusively on any of those change abatement process. Few countries stand more threatened by this development than the oil producing Nigeria . . . Nigeria's economy today remains monoculture and heavily dependent on the oil sector, which account for around 8% of Government revenues, 90-95% of export revenue and over 90% of foreign exchange earnings. Currently the Nigerian government is in the process of lessening this unhealthy dependence on crude oil through it development of the natural gas industry.

Yamin, F[27] says thus there is also the believe that Nigeria is yet to destroy her own environment to such a level that should warrant serious attention to issues like ecosystem, farmland degradation and droughts as being canvasses in climate change studies.

According to another writer James C Nwafor[28] Response measures against the effect of climate change: Implications for the energy sectors made a clear remark on the response of Nigeria to climate change. In his words, he said thus "Although, Nigeria has made significant progress on the move towards a low carbon world, finding from the multilateral Agencies are needed to assist the nation to implement the various mitigation programmes that will lead to an even cleaner and safer path of development.

We shall also examine various writers on Nigerian Laws and Regulations that were passed in recent times which seek to overhaul the Nigerian Environmental Laws as it relates to the climate change which includes amongst others:

[27] Yamin, F. Op.cit pg. 8
[28] Nwafor ,J C Op. Cit pg 2

- National Environmental Standards and Regulations Enforcement Agency Act
- National Environmental (Control of Vehicle Emission from Petrol and Diesel Engine) Regulations 2011.

1.8 Organisational Layout

The research work is divided into five chapters. Chapter one shall focus on introduction to the study. Chapter two will focus Kyoto Protocol and its constituent mechanism. Chapter three will deal with the effect of climate in Nigeria and the challenges of implementation of Kyoto Protocol. Chapter four will focus National measures adopted for the control of climate change and also give an overview of the challenges and constraint of Adaptation and Mitigation of Climate Change.

While the last chapter offer some finding, recommendation/suggestion, summary and conclusion.

CHAPTER TWO

THE KYOTO PROTOCOL

2.1 Negotiations

The first Conference of Parties; "COP" (COP-1) held in Berlin in 1995,the parties to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) recognized that in light of further scientific evidence (most prominently the Second Assessment Report released by the IPCC),the commitments in the IN THE Convention were "not adequate" to achieve its goal. The outcome of this COP provided a strong political mandate ("the Berlin Mandate" for strengthening the commitments in the convention, which led to the adoption of the text of the first Protocol to the Convention at the third COP (""COP-3) in Kyoto, December 1997.[29]

Although agreement was reached on the specific terms of the Kyoto Protocol to the UNFCCC, many crucial technical and political issues were left unresolved .Most countries felt they could not ratify the 1997 Kyoto Protocol until these issues are resolved. After further negotiations, the Buenos Aires Plan of Action was adopted at COP-4 in 1998.This plan set out a programme of work on the 1997 Kyoto Protocol operational rules and the implementation of the 1992 UNFCCC, which was scheduled for finalization in 2000.[30]

The outstanding issues continue to prove highly controversial, and negotiations eventually broke down at COP-6 in the Hague. In 2001, the President Bush officially announced that the United States, the world's largest emitter of CO_2, would not ratify the 1997 Protocol on the basis that it would be detrimental to the country's economy and did not include binding emission reduction

[29] Ladan, M.T. Op.cit pg.508
[30] Ibid

for developing countries. Despite this, the negotiation process was reassumed and culminated in 2001, with the achievement of political agreement in the Bonn Agreements, which allowed completion of the Marrakesh Accord later that year.[31]

The Marrakesh Accord contain extensive and complex provisions to guide the practical implementation in the 1997 Kyoto Protocol. This provisions cover the flexible mechanisms, the establishment of a compliance mechanism and the elaboration of rules on permissible land use, land-use change and forestry ("LULUCF").The Marrakesh Accord also consolidate matter under the convention relating to funding arrangements and capacity building for developing countries. The following description of the main aspect of the 1997 Kyoto Protocol therefore include reference to the provisions of the Marrakesh Accord where appropriate.[32]

2.2 Commitments

As intended by the Berlin Mandate, the 1997 Kyoto Protocol covers the period beyond the year 2000 and require stronger commitments from Annex 1 parties to achieve quantified emission reductions with a specific time frame. This commitments cover the six greenhouse gases listed in Annex A of the 1997 Kyoto Protocol (carbon dioxide, methane, nitrous oxide, hydroflourocarbons, preflourocarbons and sulphur hexafluoride),and each Annex 1 party's particular 'quantified emission reduction target 'is listed in Annex B. These targets are designed to ensure that combine emission from this 'Annex B parties' are reduced to at least 5% below 1990 levels between 2008 and 2012.However, since emission levels have risen substantially since 1990, this measure is still unlikely to stabilize human global induced global warming.[33]

[31] Ibid
[32] Ibid
[33] Ibid

2.3 The Three Flexible Mechanism under Kyoto Protocol

In order to facilitate implementation of the commitments described above, the 1997 Kyoto protocol provide for the use of an innovative set of tool, called the "flexible mechanisms," designed to help the Annex 1 parties maximize the cost-efficiency of meeting their emission reduction targets. These flexible mechanisms allow state parties (and authorized private or public sector organizations or businesses) to reduce emissions by undertaking projects in other countries or by trading in emission reduction credits, and then counting these reductions towards their own emission reduction targets. The use of the flexible mechanisms is subject to the condition that the emission reductions achieved are supplemental to the national action to reduce emission. The 1997 Kyoto protocol establishes three flexible mechanisms: Joint implementation ("JI"), the Clean Development Mechanisms ("CDM") and the Emissions Trading ("ET").

2.4 The Joint Implementation

Joint Implementation as outlined in Article 6, provides that one Annex I party can receive credits for financially supporting (and therefore jointly implementing) appropriate projects to reduce emissions in another Annex I party. Such projects result in the generation of "Emission Reduction Units", which can be used by the Annex I party to meet its own 1997 Kyoto Protocol target. This flexible mechanism is designed to encourage the transfer of technology and to promote energy efficiency of forest conservations schemes. However, the reductions must be 'additional' to any that would have otherwise occurred and it must also be supplemental to domestic action.[34]

[34]Ibid pg.510

2.5 Clean Development Mechanism

The Clean Development Mechanism (CDM) is designed to encourage emission-reduction projects that assist in achieving sustainable development in developing countries. Using this mechanism, an Annex I party can invest in appropriate in non-Annex I parties, leading to the generation of certified emission reductions ("CERs"). The CDM, established under Articles 12 of the 1997 Kyoto Protocol is the only flexible mechanism open to participation by the developing states.[35]

Under the CDM Annex I parties receive credit for achieving greenhouse gas emission reduction in non-Annex I countries through financial investment or technology transfer. In other to encourage a 'prompt start' to the CDM, CERs obtained during the period from the year 2000 up to the end of the first commitment period in 2008 can be used in achieving compliance for the first commitment period.[36]

In other to participate in CDM, a host country must have ratified the 1997 Kyoto Protocol and set up a designated national authority to oversee the approval of the projects. This national authority must decide whether a CDM project activity contribute to sustainable development in the host country and whether the participants have voluntarily agreed to be involved in the project

For the certified Emission Reductions to be valid, the project's funding must be in addition to existing development aid provided by the Annex I party, and the CERs achieved by the CDM project must be in Addition to those that would have occurred without the project. For this

[35] Ibid
[36] Ibid

purpose, project baselines have to be developed, which describes the most likely course of development and the situation that would have prevail in the absence of the CDM project.[37]

2.6 Emission Trading

Emissions trading, as set out in Article 17 of the Kyoto Protocol, provides for Annex I parties to acquire units from other Annex I parties and use them towards meeting their emissions targets under the Kyoto Protocol. It will be the world's first multinational emissions allowance trading scheme for major CO2 emitters, and may serve as template for emissions trading scheme covering companies and individuals in other regions. This enables parties to make use of lower cost opportunities exist, in order to lower overall cost of reducing emissions. Only Annex 1 to the Kyoto protocol with emissions limitation and reduction commitments inscribed in Annex B to the protocol may participate in such trading. Such parties may therefore be prepared to transfer units when they do not require them for compliance with their own emission targets.

Developing countries are not eligible for Emission trading since it applies only to the countries that have voluntarily agreed to emissions reduction 'cap'.[38]

2.7 The Potential Legal Challenges and Uncertainty under Kyoto Protocol

The controversy over the issues of carbon sinks and emissions trading nearly aborted the Kyoto protocol. The debate over the roles that each are to play under the protocol and the consequent political compromises has resulted in a complex set of provisions. The distinction drawn between the use of carbon sinks in developed countries under joint implementation and their use in developing countries under the Clean Development Mechanism (CDM) is a particular source of

[37] Ibid
[38] Troman, S Op. Cit pg 8

intricacy.[39] It is at least arguable that key elements of the compromise reached at COP-6 and COP-7 in this regard, are inconsistent with the terms of the protocol and are ultra vires the Convention on Climate Change. This is a source of both uncertainty and potential legal challenge.[40]

Not only do the recent decisions create needless complexity, they also clearly discriminate against developing nations.[41] Among the recent political compromises is the management, third type of non-bankable but trade able unit with respect to forest management, which is only available to Annex 1 countries. The result is an anomalous one in which a variety of otherwise equivalent carbon credits can be generated under three different regimes including one, the CDM that is subject to an elaborate regulatory overlay that discriminates against carbon sequestration by developing countries.[42] For example, complying developed countries can essentially self-certify sequestration projects. In contrast, projects in developing countries must obtain prior approval from a subsidiary body, the CDM Executive Board, mandated to require detailed information and impose substantive and procedural hurdles not required or imposed by its companion body[43], the Article 6 supervisory committee on joint Implementation projects. The parallel and related debate over the third 'flexibility' mechanism, emission trading, compounded the complexity of an already asymmetric and bifurcated system.[44]

The requirements devoted to 'environmental integrity' not only have raised the costs of compliance of developing country projects but also virtually ignore the fundamental principle of

[39] Bettleheim, E.C. and D'origny, G: Carbon sink and Emission under Kyoto Protocol; A legal Analysis 28th June 2002
[40] Ibid
[41] Ibid
[42] Ibid
[43] Ibid
[44] Ibid

sustainable economic growth and development embodied in the convention and related international agreements .[45]

The regulations for carbon sinks being formulated at conferences of the parties will have a significant impact on their use worldwide,[46] of key importance, in addition to their successful integration of carbon sinks and emissions trading into other international treaties, is the development of practically achievable and objective standards and an efficient and transparent approval process consistent with the terms of the convention and the protocol. Most important of all is a rebalancing that restores the primacy of addressing climate change in the context of sustainable economic growth and development.[47]

2.8 The Essence of the Kyoto Protocol

The main essence of the Kyoto protocol include the following

1. Placement of a cap as a binding agreement by industrialized countries to reduce greenhouse gas emissions to equivalent levels;

2. Establishment of Joint Implementation(JI), Clean Development Mechanism (CDM) and Emissions Trading (ET) For exchange of inventory and project based emission reductions among parties;

3. Controlled use of forests and agricultural sinks to meet commitments;

4. Establishment of strict measures for inventory, reporting and registry of offsets;

[45] Ibid
[46] Ibid
[47] Troman, S. Op. Cit pg 8

5. Enacting a compliance regime with distinct branches for facilitation and enforcement as well as punitive measures for non – compliance, and

6. Enhancing flows of finance and technology transfer to developing countries for capacity building on climate change mitigation and adaptation.

The Kyoto protocol thus offers benefits to the parties involved in it. For instance, if faithfully implemented, the benefits that participation in CDM will bring to Nigeria and other developing countries include:[48]

1. Acquisition of environmentally – benign technologies

2. Access to additional funds for climate – change projects

3. Capacity building of national institutions, and

4. Sustainable development.

[48] Ibid

CHAPTER THREE

EFFECT OF CLIMATE CHANGE AND CHALLENGES OF THE IMPLIMENTATION OF KYOTO PROTOCOL IN NIGERIA

3.1 Introduction

Nigeria today faces many development challenges. The security of lives and property, and national stability, continue to be recurring concerns. Despite major efforts in recent times, progress against poverty remains slow, and any gains in key development indicators remains unconsolidated. Climate Change could compound the environmental, economic and strategic challenges we face today, and will certainly undermine our capacity to manage them if not addressed. Climate Change, therefore raises a concern on the security of our shared future, by heightening the challenges we face virtually all sectors of development.[49]

As Africa is exposed to a number of resources-consuming stressors (ranging from HIV to Corruption to permanent crises and conflicts), comparatively few resources remain to react proactively on the climate change. Seeing the climate change as an external shock to the eminent cost by the externalization of cost of a third party, payment and assistance can be considered to be a reasonable way to compensate Africa for the negative climate effect.

In January 2007 at the German-Africa summit in Accra, initiated by the Federal President of Germany , the former Nigerian President, Olusegun Obasanjo appeal to international assistance

[49] Okali, D: Climate Change and Nigeria; Challenges and Opportunities for Sustainable Development. Environmental Law Journal Vol. 2 September 2005 pg 4

in other to cope with the consequences of the climate change. He claimed that all countries should adhere to the respective international agreement.[50]

3.2 Evidence of Climate Change in Nigeria

There is no doubt that global levels of the main climate change gas ,carbon dioxide (co2), have increased since pre-industrial times and may double these by the 2050s.There is also no doubt that that the world is now at least 0.50C warmer than it was 100 years ago. The Climate is certainly changing, indeed ten of the hottest years on record have been in the last twenty years and 1988 was probably the hottest year of the last millennium. Changing weather pattern spell trouble for wild life and agriculture, and could lead to severe soil erosion, and major changes in fish stocks.[51]

Evidence of climate change or fluctuations in Nigeria dates back to several decades .For example, there were climatic fluctuations in Nigeria in the periods 1600 and 1610[52], between 1738-1756[53] and during severe famine in Ibadan area in 1855.There was severe famine country wide in the period 1913-1914 which was probably more severe than that of 1855. Okulaja 1979[54] who studied the trend in rainfall along the coastal region of the country noted a drastically shrunken rainy season in the period 1930-1949 and the setting of the persistent rainy dry season after 1918. In another related study in which annual rainfall fluctuation for the period 1906-1977 was investigated , it was observed that rainfall for the period 1970-1977 was generally below

[50] Habil, K. P: Nigeria in a Dilemma of Climate Change-Nigerian Country Report July 19, 2007. http://www.kas.de/nigeria/en/publications/11468/ assessed 21/10/2014
[51] Troman, S Op. Cit pg 8
[52] Ajayi, J.A. & Espie, L: A Thousand Year of West African History .Humanities Press, New York (1969).
[53] Ibid
[54] Okunlaja, P.O: Trends in Rainfall Regime along Nigerian Coastline during the Sahelian Drought Era: Proceeding of the Pre-Wamex Symposium. Leo Express Printers, Lagos Nigeria (1979).

normal for most of this country with 1972/1973 as the peak of the dry period.[55]Rainfall in country 1983 was only 27% of the 1941-1970 mean and the level of Lake Chad has been falling since the middle of 1960.[56]

There were also cases of dust plume and dust storms from the north in 1980, 1982 and 1986.[57] Many communities in Nigeria have complained about unusual weather phenomena, like lateness in the onset of the rainy season, drought at unusual periods and sometimes prolonged rains into rainy season. The harmattan season has been truncated in many Nigeria locations and the colder than normal nights associated with Harmattan are becoming rare. There are reports that the cold weather necessary to grow wheat in the Kano area has not of late been forthcoming, leading to reductions in yield as drastic as 40 to 4 tons per hectare. There are reports also that high elevation like the Mambilla Plateau that, because of their coldness, where virtually devoid of mosquitoes are now infected by that scourge. All of these suggest that whatever may be the scientific debates raging on the matter, the evidence is that climate change is real, and the sooner we begin to do something to mitigate or adapt to the change the better for us.[58]

3.3 Environmental Implications

Environmentally, Nigeria's climatic regime stands to be severely disrupted leaving its forest and water resources at risk. Studies show that biological productivity in Nigeria will decrease in the event of global warming[59] with an additional consequence of severe fuel wood shortages.

[55]Ibid
[56]Agu, A. N: Causes, Effect and Implication of Climate Change in Nigeria: Impact on Energy Development, Umolu J.C (Editor) Damtech Nigeria Limited Plateau State, Nigeria (1995)
[57]Ibid
[58]Okali D, Op.Cit pg 23
[59] Chukwueke, A.O Response Measure against the Effects of Climate Change: Implication for the Oil and Gas Sector. National Compendium on the Nigerian Environment ,Ministry of Environment Abuja (2005) pg 7

Already Nigeria has experienced a definite shift in the long term rainfall mean toward more arid conditions. These climate changes have had adverse implications for water resources availability for power generation and agriculture. Likewise, Nigeria's low-lying lagoon coasts stand threatened by sea-level rise, particularly because most of its major and rapidly expanding cities are on the coast. If sea level rises, inundation could occur along more than 70% of the Nigerian coastline, placing land at risk many kilometers inland.[60]

3.4 Threat to the Coastal Region

We have a coastline that is more than 800km long. Recall that the prediction is that climate change could cause sea level to rise by as much as 120cm (i.e. 1.2m) by 2100. Calculations show that a 0.2m rise in the sea level will inundate 3,400km^2

Of our coastland: a 1.0m rise will cover 18,400km$^{2.}$ The whole of the Niger Delta is 600km^2 and total mangrove area in the country is about 8000km$^{2.}$ Our economy depends critically on the important economic activities that take place in our coastal region and we have important cities, infrastructure and installations in the region. One prediction is that 'Nigeria will lose close to $9 billion as a result of the catastrophe (sea level rise) while, at least, 80% of the inhabitants of the Niger Delta will be displaced due to the low level of the oil-rich region.[61]Sea level rise and repeated ocean surges will not only worsen the problems of coastal erosion that are already a menace, the associated inundation will increase problem of floods, intrusion of sea-water into freshwater sources and ecosystems, destroying such stabilizing ecosystems as the mangrove,

[60] Awosika, L. F. et al. The Impact of Sea Level Rise on the Coastline of Nigeria. Workshop on Global Climate Change and the Rising Challenge of the Sea. Proceeding at ICPC Workshop Magarita Island, Venezuela, 9-13 March 1992.
[61] Okali D, Op Cit pg 23

agriculture, fisheries and general livelihoods. Such an occurrence will heighten the social conflicts already prevalent in the region.[62]

3.5 Heightening of Drought and Desertification

More than two thirds of the country is prone to desertification, which predictions suggest will be exacerbated by climate change. The resulting decline in productivity from increased desertification will further raise our vulnerability to climate change and worsen the problem of ecological refugees.[63]

3.6 Threat to Water Resources

Water is critical environmental factor particularly in our sub-humid to arid regions, it is also an important source of energy to the economy. One predicted dominant impact of climate change is reduction in soil moisture in sub-humid to arid regions of Africa. Trends for Africa in the last decade already show a 17% decrease in runoff,[64] to which reservoir storage is markedly sensitive .As further elaborated below, moisture deficit has immediate repercussions on agricultural production. Drought and water shortage also already threaten the hydropower potentials of our reservoirs which, until recently supplied nearly half of our electrical energy. The knock –on effect on industry from any further reductions in the capacity of this hydro-stations could be far-reaching.[65]

[62] Ibid
[63] Ibid pg 23
[64] Third Assessment Report, (TAR)(Intergovernmental Panel on Climate Change, UNEP-GRID-Arendal 2001)
[65] Ibid pg 5-6

3.7 Threat to Food Security and Livelihoods

Food security, livelihoods and hence poverty reduction programmes are threatened by climate change.[66] Sub-humid, semi-arid and arid regions of the country that is areas subject to desertification, will be further hit by depressed production caused by climate change.

Agriculture everywhere in the country, being dependent on rainfall, will be adversely impacted by the unpredictability of the rainfall pattern- variability in timing and amount of rainfall – while coastal regions that rely heavily on fishing may also be hit as climate change upsets ocean currents and fisheries.[67]

Climate change could indirectly depress food production through climate – linked disasters lake flooding and landslides that disrupt community life, while biological production itself can be directly affected by climate change. Production of grain crops – maize, guinea corn, millet and rice – can be depressed by rise in temperature above 32^0C result in Global warming.[68] Rice is particularly sensitive; 1^0C rise in temperature above 32^0C result in 5% reduction in yield. Climate change - induced water deficits, and increase in pests and diseases may also directly depress crop and livestock production and storage, and hence, food supply, necessitating imports.[69]

Food security will be affected also because many Nigerians, the rural majority, depend on non-timber forest products (NTFPs) or wild frown products for food and livelihood. Loss of biodiversity associated with climate will affect this source of food supply and livelihood.

[66] Okali, D. Op Cit pg 23
[67] Ibid
[68] Ibid
[69] Ibid pg 15

3.8 Threat to Energy, Industry and Transport Sectors

Threats to the linked energy/industry and transport sector derive mainly from the potential impact on climate change on energy production and distribution. Disruption of these processes at a time when climate change may place heavy demands on energy for space cooling, could result from the effect of drought and water shortage on hydroelectric power generation and effect of climate – linked natural disasters (Floods, windstorms, ocean waves etc) on production and distribution installation.[70]Until recently, over half of our already inadequate power supply was hydro-electric. Disruptions of the system will greatly worsen the situation. In addition, industries and vehicular transport which generate greenhouse gases from burning fossil fuel, as well as industries, like cement production, which additionally generate CO_2 from the breakdown of calcium carbonate consciously designed and regulated, adjustment in these sectors, in other to combat climate change, will severely stress the economy.[71]

However, climate proves to be a major factor in influencing agriculture in Nigeria.[72]

For the same reason climate change has implication on fresh water resources, human health, natural eco-systems and bio-diversity. River Niger the major river system in the country runs over 4000km across West Africa, and its basin covers about one-third of the sub-region including Guinea, Cote d'Ivoire, Mali, Burkina Faso, Niger, Benin, Nigeria , Cameroon.

The pressure of this river basin is intense. For instance, the Sahelian drought of the 1970s seriously affected hydro power generation from Kanji Dam on the Niger River during the 1973-

[70] Okali, D. Op. Cit pg.23
[71] Ibid
[72]Troman, S Op.cit

1977 periods.[73] This caused a severe shortfall in power generation to consumers in the country as well as in Mali, Benin and Chad. Successive accumulation of back to back drought years often caused devastating effects on ground water, run off, reservoir storage, marginal agricultural activities, and water qualities. Increase in drought and other extreme events added to the stress on water resources and infrastructure, thereby constraining development.[74] Other rivers were also highly sensitive to climate variations and there experienced decrease in runoff and water availability, thus affecting agriculture and hydro power systems.[75]

Rising sea level is another major impact of climate change in Nigeria.[76]

Have shown that the most important of projected effects of climate scenarios on the Nigeria coastal area and resources include the following:

1. Sea-level rise which cause large scale inundation and exacerbate coastal erosion and salt water intrusion into coastal aquifers
2. Loss of ecotones with direct effect of wildlife distribution survival and subsistence of local communities.
3. Greater frequency of high intensity rainfalls which would increase soil erosion, flash floods and storm sewer overflow
4. Increased frequency of ocean storm surges
5. Changes in ocean dynamics with pronounced effects on fish resources, fish migration and nutrient distribution patterns.

[73] Ibid
[74] Ibid
[75] Ibid
[76] Awosika, L.F. et al. Op Cit pg 26

Awosika et al also indicated that social implication of sea level rise is multidimensional. In the case of 1m rise, more than 3 million people would be at risk while in the case of 2m rise, more than 10 million people who live along the coastline would be at risk. This means that a large proportion of the coastal population are vulnerable to sea level rise not to speak of coastal resources such as industries and buildings, which will also be damaged in such circumstances.[77]

3.9 The Challenges of CDM Implementation and Development in Nigeria

The World Bank's estimates have clearly shown that the African countries have failed to live up to the great emission reduction credits potentials within its confines. With more than 3,200 clean energy projects and 740 million tons of GHG reduction per year, the continent still has just 2% share of global CDM pipeline. In 2000, studies showed that over 3-5 billion standard cubic feet (scf) of associated gas was produced and more than 70% was burnt off. This made Nigeria the world's largest gas-flarer with about 2 billion standard cubic feet a day being flared.[78]

The challenges of CDM implementation and development in Nigeria is summarized as follows:

- **Access to conventional finance**: The business math behind CDM projects as enunciated under Kyoto Protocol is that carbon finance can only turn borderline projects into viable ones as a result of GHG reduction. Hence CDM, according to Durando Ndongsok of First Climate in his write up on CDM IN AFRICA - Facing the hurdle of conventional Finance, is not "a panacea for projects that make no financial sense at all". The basic math calculations of any CDM project must give an internal rate of return (IRR) that is potentially viable enough to lure investors. What carbon finance is to achieve is the

[77] Ibid
[78] Ademoroti, M.S: Challenges of Clean Development Mechanism in Nigeria, Article in INSEAD Journal Vol. 1, Switzerland November 30 2009. Pg. 45

increase in such IRR by for example a 2% more in order to raise the threshold of profitability and therefore favor implementation of such a project.

As simple as the case may look, investigation has shown that access to conventional finance is one of the bane of the development of CDM in Africa as also in Nigeria. The underlying factor responsible is attributed to economic viability of most ideas which are not bankable projects.

Awareness of most Nigerian financial institutions: Project developers in pursuit of the above mentioned views have come to develop a notion that most banks in Nigeria do not know what CDM is all about. This led to a sampling of most banks in the country and it showed that most do not have any idea of what climate change, Greenhouse Gases and CDM is all about. According to Bolade Soremekun statement during IREC 2009, he said that "despite all the local and international media reports and features, meetings, workshops, you will hardly find a bank with an Environment/Climate Change/Renewable Energy Desk in Nigerian banks". This shows that something is fundamentally not right.

The underlying course of any Foreign Investment in any project, as in the case of CDM, is the acute interest, devotion, commitment and understanding on such project by the locals which is not evident in this case in Nigeria. Institutional developers have the potential to develop carbon assets but it has to be with the collaboration of the Nigerian organizations.

Although the banks have few projects registered or in the offing, those projects are only registered on the basis of the usual loans and project finance but not on the basis of provision of sophisticated financial projects such as required and eligible under CDM.

- **Lack of Capacity building**: One of the major barriers to CDM development in Nigeria is the lack of viable project with respect to the underlying business math and adequate knowledge base. No investor will be attracted by just any great idea without the basic study done on viability.

In a recent World Bank study focusing on low-carbon energy in sub-sahara Africa, over750 CDM projects opportunities were identified in Nigeria. And from this study, slightly over 100 million tCO2e of GHG emission reduction can be generated at the prevailing global carbon market price of $12.5/tCO2e. This will amount to over $1.25 billion carbon credits sales if these projects were implemented. Also in addition to this implementation is the possibility of over $18 billion worth of clean energy technology transfer to the Nigerian economy annually. But the complexities associated with CDM projects registrations, validation and implementations processes needs to be addressed by the stakeholders in this fields.

In capacity building, country specific barriers to CDM development such as pre-project, mid-project and launch issues also need to be redress adequately. For example, inadequate knowledge base, non-existing support services and government bottlenecks are most prevalent barriers as identified by Professor Felix B. Dayo in his paper. (A CDM methodology expert in the Preparatory Assistance to 10 Francophone African countries on CDM – A UNIDO funded program YA/RAF/05/005/11-53).

The need for active participation of stake holders such as the government in capacity building cannot be over emphasized which include the provision of adequate infrastructure by the government among other things.

- **Perception of host countries and policy barriers**: The perception of international investors of Nigeria to be very risky for investment is considered to be of prime importance in CDM development barriers considerations. The Niger Delta unrest plays another role in driving home these perceived beliefs of outsiders. Although the risk in CDM revenue accounts for only 20% of the overall revenue, the expected growth in CDM development is absent as most institutional investors are wary of investing.

There is a need therefore for government to come up with regulatory policies that will ensure the safety of potential investors. The need to revamp the existing national regulatory framework to promote and protect carbon credit investment and project finance is also very necessary and pivotal to the growth of CDM in Nigeria.

- **The complexities of CDM processes and technical framework:** The aforementioned complexities of CDM project requirements for eligibility under the Kyoto protocol also acts as a deterrent to CDM implementation and development in Nigeria. For instance, there is a debate on going the debate on whether gas flaring will no longer qualify as a CDM project since there is government regulation for its stoppage. Therefore, with the requirement that every CDM project must qualify under "additionality", gas flaring would no longer be "business as usual" or the baseline scenario. "Additionality" is a way by which Executive Board of CDM assures that the activities rewarded with credits would not have occurred anyway.[79]

Another consideration that is peculiar to Nigeria and inhibits CDM implementation is the typically small sized CDM projects scattered in different locations, which are of their own,

[79] Ibid pg. 9

unattractive and less economically viable to potential investors. Saddled with the responsibility of taking care of registration costs and risks, project developers find it a herculean task to bring such small projects to financial closure and ensure bankability due to its size before potential investor gets attracted. This constitute a reasonable set backs for most CDM projects of this categories in Nigeria since the knowledge of programmatic approach is lacking.

Kyoto Protocol 2012 first commitment period expiration: Beyond 2012, the future of CDM projects poses a challenge. On the market side, only few investors would take the risk beyond the first commitment period expiration. Kyoto Protocol expires in 2012, most CDM projects life span beyond 2012 and thus there is limited or no carbon credit market for such project. There is a certain school of thought that are of the opinion that Kyoto is bound for a natural death due to the non-inclusion of China and refusal of adoption by United States. Another school of thought has it that Kyoto Protocol has a political undertone in monitoring the growth of developing countries and are wary of the credibility of the carbon markets. This poses a threat to energy efficiency and infrastructure-oriented CDM projects in seeking for conventional finance as African generally are very conservative in delving into new frontiers agog with different information such as Kyoto is going to get bigger such that developing countries would eventually get caps and therefore economic growth will be suppressed.[80]

As earlier mentioned, Nigeria's potential in CDM project development is huge and the socio economic advantage is numerous. The various benefits range from enabling increased free flow of investment to infrastructure development and vibrant private sector through technology transfer. Hence the call for aggressive participation in capacity building which is the most critical

[80] Ibid Pg.10

of all barriers iterated above is a call in the right direction. For example, the Regeneration at Cadbury Nigeria Plc. was identified through a UNIDO capacity building initiative.

Also proffering solutions to finding conventional finance through awareness and training of the stake holders, such as the Nigerian Financial Institutions and the Government would go a long way to mitigate the eternal problem with national and foreign direct investments. This would also stimulate interests in research and development which CDM requires. It will in both long and short term benefit the country at large.

Post 2012 Carbon Credit Fund advised by First Climate is a fund established by five leading European public financial institutions and its currently buying carbon credits that spans beyond 2012 when Kyoto expires.[81]

3.10 Complexity of Emission Trading Mechanism

Literature has revealed that Carbon dioxide (CO2) emission is the major contributor of Global Warming. This CO2 emission emanates from a lot of economic activities which comprise both Industrial and Agricultural activities that go on globally.

"Environmental and Economic assessment of the chemical absorption process in Korea", stated that CO2 emission from fossil fuel is a major cause for the global warming effect, but it is hard to remove completely in actuality. Moreover, energy consumption is bound to increase for the continuous economic development of a country that has an Industrial formation requiring high-energy demand.[82] Michael (1995) considered carbon dioxide emissions and global GDP. He

[81] Ibid pg. 12
[82] Igwenagu, C.M: Principal Component Analysis of Global Warming with Respect to CO2 Emission in Nigeria: An Exploratory Study. Asian Journal of Mathematics & Statistics, Vol. 4: pg 71-80 (2011).

stated that a positive relationship exists between CO2 emission and Gross Domestic Product (GDP). He examined per capita income and CO2 emission of 137 countries across 21 years; it appears that as per capita incomes accelerate across countries emissions increase. Although some parts tend to decelerate, this could be attributed to the fact that high income level leads to increase in demand for environmental protection. Only emissions reduction proposals that assures income will not be adversely affected particularly those of less developed countries will have any possibility of successful implementation.[83]

Currently, action to stem the emission of greenhouse gases as encapsulated in the Kyoto protocol is restricted to the developed countries which requires that they (developed countries) cut their greenhouse gas emissions by 5% compared to 1990 levels by the period between 2008 and 2012, Emission Trading in the Kyoto Protocol Finished and Unfinished Business (1997).[84]

Although Nigeria does not belong to developed countries and thus not required to take any abatement action for now, the measures adopted by the international community will not only have a serious effect for Nigeria in terms of economy, but also the fact that poor regions, particularly, Africa, appear at greatest risk from the projected effect of global warming. For Nigeria in particular, the economy is largely dependent on oil produce as discovered from the literature and general awareness, therefore to reduce emission means to reduce oil production which is the back bone of their economy. From all indications if the measures proposed by the United Nations to check emission (Global warming) come to hold developing countries like Nigeria who depends solely on oil for their economic growth will be adversely affected. Lu et al. (2007) adopted the Divisia index approach (a method whereby all the factors that affects the

[83] Ibid
[84] Ibid pg. 10

emission of carbon dioxide are divided into various components) to explore the impacts of five factors on the total carbon dioxide emissions from highway vehicles in Germany, Japan, South Korea and Taiwan during 1990-2002. CO2 emission was decomposed into emission coefficient, vehicle fuel intensity, vehicle ownership, population intensity and economic growth. This is a clear indication that CO2 emission could be used to asses the economic statues of a country.[85]

The study by Michael (1995) considered carbon dioxide emission and global GDP where he stated that there exists Positive relationship between CO2 emission and Gross Domestic Product (GDP) such that as per capita income increases CO2 emission increases. One cannot comfortably advocate for reduction in GDP so as to reduce CO2 emission instead an alternative measure of reducing CO2 emission without necessary affecting GDP should be considered.

Furthermore, the study by Lu et al. (2007) suggested that the rapid growths of economy and vehicle ownership were the most important factors responsible for the increased CO2 emission. It will not be realistic to advise reduction in vehicle ownership, since it is clear that people that have not owned a car will aspire to have at least one and a family that is managing one would want to increase the number to at least two for more comfort. We should rather advocate for clean development Mechanism which has already started in some part of Europe (though not too common). Also one cannot say that since rapid growth of economy leads to increase in CO2 emission that countries should reduce the activities that increases the growth of their economy but to adopt an alternative way of reducing CO2 emission while the growth of their economy continues to be on the increase. Jabro et al. (2008) in their study on carbon dioxide flux as affected by tillage and irrigation of soil converted from perennial forages to annual crops, stated that among greenhouse gases, carbon dioxide (CO2) is one of the most significant contributors to

[85] Ibid pg. 11

regional and global warming as well as climatic change. From all indications any factor that triggers off CO2 emission contributes to global warming.[86]

Conclusively, based on this study, we now know the countries that are responsible for the high concentration of CO2 in the atmosphere vis-à-vis global warming. Also, it was found out that CO2 emission in Nigeria is low which implies that Nigeria can enter into trading with most developed countries that are emitting more CO2 than required, to maintain atmospheric balance. This does not mean that Nigeria should relax because she is not emitting even enough rather she should look for ways of improving her economic growth by improving on industries, going back to the era of Coal production to reduce much concentration on oil, encouraging Agricultural activities that will be using up the CO2 being emitted as a result of the industrial activities going on and some other areas that can boost her economic activities.[87]

3.11 Kyoto Protocol and its Economic Impacts

Policies to curb the climate change by reducing the consumption of fossil fuels like oil, gas or carbon, have significant economic impacts on the producers or rather the suppliers of these fuels. Nigeria is the eighth largest oil supplier in the world. The ninth largest deposits of gas are located here. The Nigerian national economy would be massively affected by a sustainable reduction of fossil energy consumption. Nigeria is practically a monoculture: about 80% of the government income, 90-95% of the export earnings and more than 90% of the foreign exchange revenues evolve from the oil sector. In the period of 1970-1990 the oil business led to revenues of

[86] Ibid
[87] Ibid pg.12

approximately US $200 billion. Another US $400 billion may have been stolen or wasted, estimated EFCC, the anti-corruption agency.[88]

However, during the last years the government of Nigeria tried to diversify. Special attention is nowadays paid to gas which emerges in the joint-production of oil. So far the gas has mainly been flared (75%), simply due to the lack of technical facilities to make use of it.

It is often burned directly on the ground, where it emerges from the soil. The arising dioxins and other carcinogens harm the inhabitants and the environment. Nigeria is flaring more gas than any other country in the world: 2.5 million cubic feet per day. This actually corresponds to 40% of the gas which is used in whole of Africa. Because of the contained methane and CO2 Nigeria's gas flaring contributes more to the global warming than all the other emissions of whole Sub-Saharan-Africa together. According to a new study commissioned by the World Bank in 2007 Nigeria accounts for roughly one-sixth of the world-wide gas flaring which in turn, spews some 400 million tons of carbon dioxide into the atmosphere. However, the World Bank survey has listed Nigeria and 15 other oil producers, as countries that have progressively reduced gas flaring between 1995 and 2006. Until 2008 the gas flaring in Nigeria shall be stopped fully.[89]

The Kyoto-Protocol is a double-edged sword for Nigeria: The probably positive long term effects on the climate change are opposed to the negative short term effects for the economic development. Observing the Kyoto-Protocol would reduce the income of the OPEC – States, amongst them Nigeria, about 25% until 2010. This would be a catastrophe for the Nigerian development plan: Urgently needed investments in education and infrastructure could at best be

[88] Habil, K P Op Cit pg. 24
[89] Ibid

done partly which would have long term negative effects on the development path of the country.[90]

China's policy of securing energy supply with its growing involvement in the extractive industries in Africa will also play an important role for Nigeria; by the way it's worth mentioning that Nigeria plans to get about 4000MW out of own nuclear power stations in the nearby future. The question of reactor safety is a delicate one in a country which does not have a stable conventional power supply and whose airspace is described as unsafe by the President. The ecological scenario could change fundamentally overnight.[91]

Nigeria signed the Kyoto-Protocol (Nigeria is part of the Non-Annex I economies, so it is not committed to take measures), but according to IPPA (Institute for Public Policy Analysis), the co-founder of the "Global Coalition on Climate Change" which consists of 26 NGOs of 23 countries, Nigeria would be better off with own initiatives to handle the climate change. It is interesting that IPPA sees the climate change as an alarmism of interested parties. A lot of suggested policies would rather harm than benefit Nigeria, according to IPPA.

Instead, Nigeria should strengthen her power of adjustment, for example by building up market based structures. Thus foreign and domestic investments, trade and prosperity would be stimulated. Likewise the ability of the country to handle challenges spontaneously would be strengthened. Principally this is a good approach. But although the author sympathizes with market based structures as they connect the desiderata freedom and prosperity, he is rather skeptical regarding their implementation in Nigeria. Just like in many other developing countries

[90] Ibid
[91] Ibid

these structures might lead to the combination of "capitalism for the poor" with "socialism for the rich".[92]

[92] Ibid

CHAPTER FOUR

ADAPTATION AND NATIONAL MEASURES FOR CONTROL OF CLIMATECHANGE

4.1 The United Nations Framework Convention on Climate Change (UNFCC)

The United Nations Framework Convention on Climate Change is an international environmental treaty negotiated at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro from 3 to 14 June 1992.[93]

The objective of the treaty is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

The UNFCCC was opened for signature on 9 May 1992, after an Intergovernmental Negotiating Committee produced the text of the Framework Convention as a report following its meeting in New York from 30 April to 9 May 1992. It entered into force on 21 March 1994. As of May 2011, UNFCCC has 195 parties. The parties to the convention have met annually from 1995 in Conferences of the Parties (COP) to assess progress in dealing with climate change. In 1997, the Kyoto Protocol was concluded and established legally binding obligations for developed countries to reduce their greenhouse gas emissions. The 2010 Cancun agreements state that future global warming should be limited to below 2.0 °C relative to the pre-industrial level.[94]

[93] United Nations Climate Change Conference: http://www.cop19.gov.pl/unfccc assessed on the 22nd October 2014 at 11:00a.m
[94] Ibid

One of the first tasks set by the UNFCCC was for signatory nations to establish national greenhouse gas inventories of greenhouse gas (GHG) emissions and removals, which were used to create the 1990 benchmark levels for accession of Annex I countries to the Kyoto Protocol and for the commitment of those countries to GHG reductions. Updated inventories must be regularly submitted by Annex I countries.[95]

In the area of International Policies, the UNFCCC was established "*to achieve stabilization of greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate systems*" Like most complex multilateral negotiations, greenhouse diplomacy seeks to devise rules to coordinate state conduct rather than to divide tangible goods. Lessons from experience show that achieving such a goal is usually confounded by the multiplicity of interests and issues involved .The result is a lack of agreement on what the rules should be. The Convention states that greenhouse gas emissions from industrialized nations should be reduced to 1990 levels by the year 2000. Further emission reduction targets for industrialized nations after 2000 were set at Conference of Parties 3 (COP 3) held in Kyoto, Japan in December 1997, where they (developed countries) committed to reduce their emissions by at least 5 percent by the five year period from 2008 to 2012; Japan committed to 6 percent, United States to 7 percent, and the European Union to 8 percent reductions.[96]

Within the context of the UNFCCC, all developing country parties are committed to submitting national communication on greenhouse gases inventories and optionally, their vulnerability to climate change, adaptation measures and mitigation potentials. As has been noted earlier,

[95] Ibid
[96]Nwafor, J.C: Environmental Impact Assessment for Sustainable Development. El'Demak, Enugu, First Edition (2006) pg 371

countries are assisted in preparing their national communications by so called "enabling activities" funded by the Global Environment Facility. Nigeria ratified the UNFCCC as a non-Annex 1 party. Accordingly, the country is expected to present the initial communication to the Conference of Parties (COP) three years after the date of ratification.[97]

4.2 The Kyoto Protocol

The Kyoto Protocol was adopted at the third Conference of the Parties to the UNFCCC (COP 3) in Kyoto, Japan, on 11 December 1997. The Protocol shares the objective and institutions of the Convention. The major distinction between the two, however, is that while the Convention encouraged industrialized countries to stabilize GHG emissions, the Protocol commits them to do so. The detailed rules for its implementation were adopted at COP 7 in Marrakesh in 2001, and are called the Marrakesh Accords.[98]

The Protocol places a heavier burden on developed nations under the principle of common but differentiated responsibilities. The Kyoto Protocol entered into force on16 February 2005. 192 Parties have ratified the treaty to date.

Under the Protocol, 37 industrialized countries and the European Community have committed to reducing their emissions by an average of 5 percent against 1990 levels over the five-year period 2008-2012.

For this group of countries, reductions of 11% are projected for the first Kyoto Commitment period from 2008 to 2012, provided policies and measures planned by these countries are put in

[97] Ibid
[98] United Nations Climate Change Conferencehttp://unfccc.int/files/press/backgrounders/application/pdf/fact_sheet_the_kyoto_protocol. Assessed on 18 October 2014.

place (see Annex). These countries will also have to make use of the Protocol flexible mechanisms in order to reach their collective emission reduction goal.

Flexibility in meeting targets Emission targets for industrialized country Parties to the Kyoto Protocol are expressed as levels of allowed emissions, or assigned amounts, over the 2008-2012 commitment period.

Such assigned amounts are denominated in tones (of CO2 equivalent emissions).[99]

Industrialized countries must first and foremost take domestic action against climate change, but the Protocol allows them a certain degree of flexibility in meeting their emission reduction commitments through three innovative market-based mechanisms.

The Kyoto Mechanisms

The three Kyoto mechanisms are: Emissions Trading known as the carbon market, the Clean Development Mechanism (CDM) and Joint Implementation (JI). The carbon market spawned by these mechanisms is a key tool in reducing emissions worldwide. It was worth 30 billion USD in 2006 and is set to increase.

JI and CDM are the two project-based mechanisms which feed the carbon market. JI enables industrialized countries to carry out joint implementation projects with other developed countries (usually countries with economies in transition), while the CDM involves investment in sustainable development projects that reduce emissions in developing countries.

[99] Ibid

Since the beginning of 2006, the estimated potential of emission reductions to be delivered by the CDM pipeline has grown dramatically to 2.9 billion tonnes of CO2 equivalent approximately the combined emissions of Australia, Germany and the United Kingdom.

Overall, more than 1230 CDM projects have been registered as at November 2008, with around 4200 more in the project pipeline.[100]

Monitoring targets under the Protocol

Under the Protocol, countries actual emissions have to be monitored and precise records have to be kept of the trades carried out. Parties must keep a national registry to track and record transactions under the mechanisms. The secretariat keeps an independent transaction log to verify that transactions are consistent with the rules of the Protocol, and expert review teams have been set up to ensure compliance.[101]

The International Transaction Log (ITL)

This sophisticated computerized system became operational in November 2007, thereby giving market players the assurance that the cornerstone of the Kyoto trading system is in place before the actual start of the Kyoto accounting period on 1 January 2008.The UNFCCC system to support the implementation of the CDM, the CDM registry also started real-time operation in November 2007. This means that credits earned by industrialized countries through the implementation of emission reduction projects in developing countries will become tradable as soon as their national registries begin using the ITL.[102]

[100] Ibid
[101] Ibid
[102] Ibid

Adaptation

The Kyoto Protocol, like the Convention, is also designed to assist countries in adapting to the inevitable effects of climate change and facilitates the development of techniques that can help increase resilience to climate change impacts.

The Adaptation Fund was established to finance concrete adaptation projects and programmes in developing countries that are Parties to the Kyoto Protocol. The Fund is to be financed with a share of proceeds from CDM project activities and receive funds from other sources. The share of proceeds from CDM project activities amounts to 2% of CERs issued for each project.

The Kyoto Protocol is generally seen as an important first step towards a truly global emission reduction regime that will stabilize greenhouse gas concentrations. As a result of the Protocol, governments have already put, and are continuing to put in place legislation and policies to meet their commitments; a carbon market has been created; and more and more businesses are making the investment decisions needed for a climate-friendly future. The Protocol provides much of the essential architecture for any new international agreement or set of agreements on climate change.[103]

4.3 Bali Action Plan

From 3 to 15 December 2007 the thirteenth conference of the parties to the United Nations Framework Convention on Climate Change (COP13) and the third Conference of the Parties

[103]Ibid

serving as the Meeting of Parties to the Kyoto Protocol (COP/MOP3) were convened in Bali, Indonesia to discuss, among others, the future of the international climate regime after 2012.[104]

In addition, the twenty-seventh sessions of the Subsidiary Body for Implementation (SBI) and Subsidiary Body for Scientific and Technological Advice (SBSTA) as well as the resumed fourth session of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG) took place. The major meetings were accompanied by numerous side events.[105]

Bali Action Plan – Post-2012 Road Map

COP13 and COP/MOP3 succeeded in establishing a framework for negotiations to create an agreement that would replace the Kyoto protocol as of 2012. The final agreement reached by the international community in Bali, labeled by COP president Witoelar in its closing statement as a "breakthrough", at the end of the day it may not represent what the EU has been asking for, namely a precise and concrete commitment to reduce anthropogenic greenhouse gas emissions of 25-40% by 2020, but still can be considered significant as it signs the return of the US in the negotiating process for the first time after the withdrawal from the Kyoto Protocol track of March 2001.[106]

Still open and controversial is the question of how the requests of a more than ever fragmented international community will be combined in the near future. The Bali Action Plan, adopted as a COP13 Decision was accompanied by a series of Decisions adopted by COP/MOP3 and established a two-track process (Convention and Kyoto Protocol) aiming at the identification of a

[104] http://unfccc.int/files/press/backgrounders/application/pdf/fact_sheet_the_kyoto_protocol.pdf assessed on 13th September 2014
[105] Hermann, E.O: The Bali Roadmap; New Horizons for Global Climate Change. Wuppertal Institute Earthscan Journals (2008) pg 91-95
[106] Ibid

post-2012 global climate regime to be adopted by COP15 and COP/MOP5 in Copenhagen in 2009.

The Convention track included the establishment of an Ad Hoc Working Group on Long-Term Cooperative Action which will provide its conclusions on the "full, effective and sustained implementation of the Convention" by COP15 in 2009. The Kyoto Protocol track signed the continuation of the work of the AWG which is required to provide recommendations to COP/MOP5 for adoption of new commitments for Annex I Parties.[107]

The Bali Action Plan did not introduce binding commitments to reduce greenhouse gas emissions but included the request for developed countries to contribute to the mitigation of global warming in the context of sustainable development. In addition, the Bali Action Plan envisaged enhanced actions on adaptation, technology development and on the provision financial resources, as well as measures against deforestation.[108]

4.4 Ponzan Conference 2008

The Poznan Climate Change Conference drew 9,250 participants, including almost 4,000 government officials, 4,500 representatives of UN bodies and agencies, intergovernmental organizations and nongovernmental organizations, and more than 800 accredited media representatives. The meeting produced a number of useful results:

- It launched the Adaptation Fund under the Kyoto Protocol. The Fund was to be filled by a 2% levy on projects under the Clean Development Mechanism. Parties agreed that the

[107] Ibid
[108] Ibid

Adaptation Fund Board should have legal capacity to grant direct access to developing countries.

- It saw Parties endorse an intensified negotiating schedule for 2009.

- It identified divergences of views on key issues related to increasing the level of available funding for adaptation and improvements to the Clean Development Mechanism.[109]

Further progress was made on a number of ongoing issues of particular importance to developing countries, including adaptation, finance, technology, reducing emissions from deforestation and forest degradation (REDD), and disaster management.[110]

A significant outcome was that governments agreed that the first draft of a concrete negotiating text for a global climate change deal would be available at a UNFCCC gathering in Bonn in June of 2009, with the target of adoption at COP15 in Copenhagen.[111]

The Ponzan conference on climate change fails to reach at a substantive decision and produce an elaborate and comprehensive treaty on climate change. The undone tasks and the unsolved issues relating to greenhouse gas emissions, climate change adaptation strategies and clean technologies may well be taken up in the next year's Copenhagen conference in December.

The Ponzan summit aiming to reach at a global consensus to create a road map to tackle climate change issues after 2012, when the first commitment period of the Kyoto protocol expires.[112]

[109] http://unfccc.int/meetings/poznan_dec_2008/meeting/6314.php assessed on 20th September 2014
[110] Ibid
[111] Ibid
[112] IFTAKHAR, A: American Journal of International Environmental Law, (2010) pg.11 &http://www.instablogs.com/the-global-warming.html

4.5 The Copenhagen Conference 2009

The Copenhagen Conference brought together 193 countries, parties to the United Nations Climate Convention and the Kyoto protocol. While countless other meetings took place in bodies such as the G8, G20 and Major Economies forum, to mention only the most important, the Copenhagen conference, which held under auspices of the United Nations, remains the privileged locus, or even the only one with authority to define a new international framework to fight climate change on the basis of these two fundamental texts.

The seed of hope which the summit was supposed to have actualized was planted in Japan in 1997. However, despite the promises shown by Kyoto protocol, the biggest polluter as at the time of signing the agreement, the United States of America did not sign which meant that it was not bound by it. This was the scenario that let nations to seek ways of having a unanimous resolution that will commit nations to fighting the apocalyptic problem climate change represent. Pachauri[113] has observed that "in the absence of the U.S being an important component of a global accord, any agreement would remain inadequate and ineffective."[114]

According to Europolitics, Twelve years have passed between December 1997, when the Kyoto protocol on the reduction of greenhouse gases was adopted, and December 2009, when the international community is called on to determine the next steps. Twelve years, during which time the question of climate change, then a low priority, has become the most pressing question of our time: a question that now preoccupies scientists, politicians and civil society. The time has come to act. The first period of commitment specified in the protocol will end in December 2012

[113]Ohurogu, C. & Okwezuzu, G.: Copenhagen Summit: Expectation, Outcomes and Imperatives; NIALS (Nigerian Institute of Advanced Legal Studies) Journal of Environmental Law. Vol. 1 (2011) pg 31, pg 41
[114] Ibid

and scientific analyses, which in 1997 were speculation, have now come true. Global warming is a reality and human activity is responsible for 90% of it, as concluded by the IPPC (Intergovernmental Panel on Climate Change), in November 1997. Conclusions that are still relevant today, as are the IPCC's recommendations for reducing greenhouse gas emissions, particularly if the aim is to keep the average increase in temperature below 2C.[115] Garner expressed the view that the Copenhagen summit was "the most important gathering of world experties on climate to date…. " The conference opened with video clips of children from around the globe urging delegates to help them grow up in a world without catastrophic warming.

The united State tried to short-circuit this UN framework, particularly through the MEF, but it was quickly forced to row back under pressure from the other parties.[116] The conference, according to Groves, was slated to reduce a successor Agreement to the Kyoto protocol.[117] He argued that an Agreement on the lines of the current 181-page negotiating text and in the form of a complex, comprehensive, legally binding multilateral convention would potentially harm U.S. economic and energy interests and also pose a threat to American sovereignty. [118]

The paper x-rays the Copenhagen summit, highlighting the various expectations from various stakeholders, assessing its outcomes and discussing the imperatives there from. The paper consist of five part: part 1 is the introduction, part 2 deals with the various expectations expressed by different individuals (global warming activists, and world leaders) about the summit; part 3 explores the various outcomes of the summit and the reasons for the not-so satisfaction outcomes

[115]Ohurogu, C. & Okwezuzu, G Op. Cit
[116] Copenhagen Conference: International Legal Framework; Europolitics December 7, 2009 . http://www.lexisnexis.com/us/inacademic/result//docview/docview.do assessed October 11 2014
[117] Groves S : Copenhagen and Beyond; Is There a Successor to the Kyoto Protocol ; November 12 2009 http://www.heritage.org/researchandenvironment/ assessed October 11 2014
[118] Ibid

of the summit; part 4 examines the imperatives called forth by the outcomes of the Copenhagen Summit while part 5 concludes the paper.

Copenhagen Summit: Expressed Expectations

Before and during the summit, a number of people bared their minds about their expectations from the conference. The former United Nations Secretary-General Kofi Annan, had expressed the view that the climate change conference in Copenhagen, with or without a groundbreaking deal, will be a success despite media reports that an agreement is unlikely. According to him, ”climate change does stop in the Copenhagen conference in December…. It is another beginning, whatever the outcome of the conference would be – whether there is an agreement or not. ”He called on countries to achieve the goal of a 25-percent to 40-percent reduction by 2020 and a 50-percent reduction by 2050. He further enjoined China and the US, two significant greenhouse gas emitters, to join effect with other nations to achieve a global target. [119]

Timothy Wirth, president of the UN foundation, agreed with Annan and said that among the 191 countries to be involved in Copenhagen, the most important relationship is the one between china and the US. China is the largest developing and the US is the largest developed country. He added that “we are very hopeful the US will take on strong binding commitments… we are also very hopeful that China will also take on binding commitments.”

The summit was expected to reach a deal that would drastically reduce emission by the developed countries. Provide sufficient deep fund for the growing of the economies of the climate change vulnerable nations as well as guarantee a cleaner, disaster-free future for humanity. A strong Copenhagen deal was essential to the global transition into green economic

[119]Ohurogu, C. & Okwezuzu, G Op. Cit pg

growth, away from the fossil-fuel induced growth obtainable today, and to help the world, especially the most vulnerable, adapt to impacts that are now inevitable. Thus according to Ojo Maduekwe, ‘’Copenhagen represents an opportunity for collective atonement. This is the only approach that can prevent is a crisis from becoming a catastrophe…. Greenhouse Gas emissions may be the ultimate weapons of mass destruction if we go home from Copenhagen without a deal that everyone can identify with.’’ What is at stake is of such historic proportion that COP15 cannot afford to fall apart into camps since all of humanity share a common future.[120]

Expectations of the conference were quite high; several developing nations indicated they have limits on what will be acceptable. Most wanted the rich nations to make more substantive cuts in their green-house gas emissions before an agreement can be reached on a draft text. The increase volume of migration and refugees compelled by natural disasters and climate change drives several developing countries towards even more disasters. Following this, the African delegation to Copenhagen, which would be led by Ethiopian Prime Minister Meles Zenawi, took the position that if the Copenhagen did not respond to the expectation of African nations to adapt to climate change, and if it failed to provide the necessary finance, technology and capacity building, then Africa would consider not signing in Copenhagen.

The AU common position was that the Copenhagen deal should provide special help and treatment for Africa and other highly vulnerable countries. Specifically, they identified a number of key points with regards to institutional mechanism and amount of the compensation money involved. Many calculations were made, including a 100 billion dollars per annum mark by 2020. They agreed that they would be flexible with the figures, but would set a minimum beyond which they would not go. Developing countries had stated that in Copenhagen, they would be

[120] Ibid pg 38

looking toward a solution providing mechanism that will help reduce their spiraling foreign oil costs, mitigate pollution and global warming.[121]

Outcome of the Copenhagen Summit

The outcomes of the Copenhagen Climate Summit fell short of expectations to the disappointment of all. The hopes which the Prime Minister of Denmark expressed "in his welcome address were virtually and almost totally dashed."[122]

What indeed came out of the summit was an agreement dubbed the Copenhagen Accord drawn up on Friday night by a limited group of countries – leaders from the US, China, India, Brazil and South Africa – which was formally accepted by the Conference of Parties to the UNFCCC (COP 15) during a closing session on Saturday morning, Reuters reports.[123]In a final decision "The Conference of Parties takes note of the Copenhagen Accord". The text is still strongly debated, and it remains to be seen how many countries will sign on to the Copenhagen Accord. According to the Danish daily *Berlingske*, the COP 15 President, Danish Prime Minister Lars Lokke Rasmussen, express satisfaction:

I am satisfied. We have achieved a result. Now nations will need to sign on, and if they do so, they will support what has been agreed (in the Copenhagen Accord).This will have effect immediately.[124]

It has been observed that when the session ended, the parties agreed they would "take note" of the accord rather than formally adopt it, a situation that left out Sudan and its allies. As such, the

[121] Ibid
[122] Ohurogu, C. & Okwezuzu, G.: Copenhagen Summit: Expectation, Outcomes and Imperatives; NIALS (Nigerian Institute of Advanced Legal Studies) Journal of Environmental Law. Vol. 1 (2011) pg 31, pg 41
[123] Ibid pg 42
[124] Ibid

accord became a minute representation of the modest of expectations before the talks began. It was a shadow of even the barest of Obama's aims, one of which was to make major emitters among the developing nations-China, India, and Brazil – agree to a process that would make them adopt concrete commitments; get funds to flow from developed countries to developing ones in aid of their effects towards combating climate change.[125]

While blaming China for the failure of the summit, an account has it that since the United States did not sign the Kyoto Protocol and remained all the while antagonistic to major emission cuts and various other provisions of the Protocol, it was therefore a heart-warming thing for the world when on assumption of office, President Barak Obama signed on the side of conducive climate campaigners. However just as the world was warming up to the idea that US was finally going to team with the rest of the world to avert an imminent disaster, China, which has now acquired the position of major polluter of the world played a deft, dubious game and sabotage what would have been a resounding deal for humanity.[126] Relishing on the annual rise its gross domestic product, China stood vehemently against any provision that would make it commit to emission cut. It even stood against fixing a date for all nations to begin to make such cuts. It was glaring that China considered its economy over and above the health of billions of people in the developing and the least developed nations of the world. The country cleverly hid under the umbrella of the Group of 77 to truncate the most important international legal agreement that would have been a major success for right to decent and safe livelihood.[127] Now that the deal has been delayed, it follows that people of the developing and least developed nation who are most

[125] Climate; Outcome of the Copenhagen Climate Talks. Africa News . January 13, 2010
[126] Nigeria; the Story of a Failed Summit-From Hopenhagen to Hopelesshagen. Africa News December 28, 2009.
[127] Ibid

vulnerable to the impact of climate change and with no capacity to adopt have been made sacrificial lambs of the economic gains of the developed and emerging economies of the world.

On the other hand, looking on the bright side of the summit according to Renee Garner, the Copenhagen Accord contains many element that represent a significant milestone by providing for:

- a recognition of the need to limit global temperatures rising no more than 2C (3.6F) above pre-industrial levels (although it does not identify what your carbon emissions should peak)

- a commitment by developed countries to contribute funding up to US$30 billion over the next three years to support mitigation and adaptation activities in developing nations.

- Annex 1 (developed) countries are to spell out by 31 January next year their pledges for curbing carbon emissions by 2020.

- non- Annex 1 (developing) countries are to identify by 31 January next year nationally appropriate mitigation action, and the mobilization of US$100 million per year by 2020 from developing nations for mitigation action which is to be conditional upon the transparency of implementing such action.[128]

Moreover, according to Yvo de Boer the Copenhagen Summit has produced three key things. First it raised climate change to the highest level of government. Second, the Copenhagen Accord reflects a political consensus on the long-term, global response to climate change. Third

[128]Ohurogu, C. & Okwezuzu, G. Op Cit pg 44

the negotiations brought an almost full set of decisions to implement rapid climate action near to completion.[129]

Though the Copenhagen Accord is legally not binding and falls and fall short of what the world required to meet the current global challenge of Climate Change, "it was widely held to be better than nothing-though, in the final moments, nothing nearly triumphed."[130]

4.6 Nigeria's Commitments on Climate Change Agreements

Nigeria was signatory to the UNFCCC in 1994 under the non-Annex 1 parties. As a signatory, Nigerian obligations are to:

- Produce four key National communications
- Produce four in-depth review/summaries
- Produce a demonstrable project report
- Produce the National Adaptation Project of Actions (NAPA)
- Produce a Global Climate Observing System (GCOS) Report

These obligations and commitment are aimed primarily at controlling climate change by reducing to the minimum the concentration of greenhouse gasses in the atmosphere. At the local level, the core challenge is to develop the frame work and capacity to:

[129] Ibid
[130] Ibid pg 45

(a) access the vulnerability of sectors and sections to different scenarios of climate change impact

(b) develop, access and implement mitigation and adaptation options, and

(c) Strengthen the negotiating ability in climate change transactions.[131]

Nigeria's major achievement in responding to the Kyoto protocol and Convention Obligations is the production of the first National Communication in November, 2003 (FME 2003).A range of adaptation actions have been put forward in the First National Communication to be adopted in response to the current and anticipated climate change impacts on the various sectors of the Nigerian economy. The Second National Communication is been prepared.[132]

It is useful to note that the National Assembly has been brought into the picture of what climate change is and the urgency respond. There is now a committee of the House on climate change. As a non –Annex 1 Country, Nigeria, is expected to focus on adaptation to the change. Through some collaborative effort with Henrich Boll Foundation (Nigeria) a strategy of action document has been prepared.

Nigeria also created a Special Climate Change Unit (SCCU) within the Federal Ministry of Environment with the Secretariat in Abuja, Nigeria. The Unit is created to implement the convention and protocol activities including the Clean Development Mechanism (CDM).[133]

On Wednesday, July 22, 2010 the Senate of the Federal Republic of Nigeria passed a Bill that will establish Climate Change Commission for the Country. The Commission will be saddled

[131] Adesina, F. A. et al: Recommendations for Nigeria's Position in Copenhagen. Heinrich Boll Stiftung Foundations (2010) pg. 16
[132] Ibid
[133] Ibid

with the responsibility of coordinating resources, policies and actions in the field of Climate change, providing advice to the Federal Government and developing a national strategy for the reduction of greenhouse gas emissions and a low carbon economy. The Commission will also act as designated National Authority for the purpose of implementation of the Kyoto Protocol and subsequent International Agreement that Nigeria may accede to. [134]

Nigeria Governance Structures and Tools for Cooperation

The Federal government has not done much on climate change thus far.[135] Nigeria's First National Communication on Climate Change came out in 2003, and President Olusegun Obasanjo set a Special Climate Change Unit in the ministry of environment to manage the issue. The ministries propose 2011 budget show climate change-related capital project worth about $20m.Officials also say a draft national climate change policy document is in the offing. State government have largely been unengaged with the arguable exception of Lagos. What the government need to work toward is at least the following:[136]

- A main oversight body - a central policy organ and knowledge center should help coordinate Nigeria's response to climate change. The crosscutting nature of the problem requires joint effort, and the prevailing state of Nigeria's political economy argues for a central actor to help leverage gains and keep patronage logic at bay. This federal body should have the statutory power and influence to coordinate planning and cooperation on climate change among all stakeholder and to devise a central Nigerian climate change

[134] Ibid
[135]Under the Kyoto Protocol, Nigeria's Obligations as a Non Annex I country include producing four National Communications, Four Indepth Review Summaries, One Progress Report, a National Adaptation Programme of Action, and a Global Climate Observing System Report.
[136] Sanye, A: Special Report; Climate Change Adaptation and Conflict in Nigeria. United State Institute for Peace. Special Report 274, June 2011 pg. 12

policy. It should also serve as the country's main climate change knowledge center and manage on-going research. Finally, the body should oversee donor and multilateral funding, as well as develop the necessary funding mechanism to get money to sub-national actors. A Bill to create a Nigeria Climate Change Commission has been stuck in the National assembly since last year. It is decent start though has drafted, the commission's powers focus resources and attention are uncertain and the cumbersome twenty-four- person technical advisory committee the bill would create has no provision for conflict experts.

- Increased capacity and roles for various agencies – Nigeria has many public institutions that could contribute to the development of adaptation policy. These include the National Emergency Management Agency, Nigerian Meteorological Agency, The National Environmental Standard and Regulation Enforcement Agency, the National Institute for Fresh Water Fisheries Research, The National Water Resources Institute, Kaduna, and the National Centre for Arid Zone Studies, Maiduguri. Most are underutilized and underdeveloped today. The main oversight body should also be responsible for coordinating their activities relating to policy and research.

- Better Information – Nigeria needs a detailed assessment study of all existing data on potential climate change impact and associated conflict risks. Government should commission analysis of the potential effects of climate change on specific sectors, value chains, population, and regions of high strategic importance or at high risk. At the same time, the main oversight body, together with outside stakeholder, should develop a multi-disciplinary, participatory assessment process that first examine climatic shift and their

associated resources shortages, secondary impacts and conflict risks, then assesses the feasibility of a particular adaptation measures.

- Implementation plan –To date, action taken through the Special Climate Change Unit has been largely ad hoc and divorced from a bigger picture. Under the United Nations Framework Convention on Climate Change (UNFCCC), drawing up a National Adaptation Programme of Action (NAPA) is the main first step for planning adaptation at the country level. A NAPA is a document containing detailed information on a country's potential climate change impacts, adaptation priorities, and preferred responses. C Completed NAPA's are sent to the UN as a prerequisite for accessing multilateral climate change funds.

4.7 Challenges and Constraint of Adaptation and Mitigation of Climate Change Adaptation and Means of implementation

Nigeria, like all developing countries faces not only the additional challenge of adaptation but also the need to put its economy on a sustainable path. Nigeria agrees that Africa is the most vulnerable continent to climate change and faces serious adverse effects as well as threats to its future economic potentials due to insufficient access to share global atmospheric resources. Consequently, international cooperation on implementation of adaptation action in Africa is urgent and must be accorded the same level of priority and emphasis as that given to mitigation. A comprehensive and action oriented program on the implementation of adaptation actions must be established. This program must implement, support and facilitate urgent and immediate adaptation action that reduces vulnerability and builds resilience of developing countries to

impacts that are already occurring, including impact of increasing numbers of extreme weather events, and impacts that are expected to occur in the future.[137]

- the program must provide access to means of implementation (finance, technology and capacity building) for implementing urgent and immediate adaption action at regional and country level;

- it should facilitate the implementation of an urgent and an immediate adaption action at national, regional and global levels;

- it should promote coherence and linkages with other international, regional and national program, bodies and stakeholders that are implementing adaptation and related activity.

The adaptation action program must:

- be undertaken in the context of the principles and commitments of the convention;
- be country driven;
- address the concerns of all vulnerable groups whose adaptive capacity is low;
- reflect indigenous knowledge and practice;
- the provision of financial and technical support by developed country Parties for adaptation programs in developing countries is a commitment under the convention that must be urgently fulfilled;
- recognizing that climate change is an additional burden to sustainable development, and a threat to achieving the Millennium development goals;
- the adaption action program must provide scaled up new, additional, adequate, predictable and sustainable financial, technological and capacity building support to

[137]Adesina, F. A. et al Op.cit

address all key area of the adaption action program in a manner that is holistic, and consistent with national and regional development objectives, programmes and plans.

- By 2020, the scale of financial flows to support adaption in developing countries must be at least $67 billion/year[138]

Mitigation and Means of Implementation

A firewall must be maintained between mitigation commitments by all developed countries and mitigation actions by developing countries.

As for mitigation commitments by developed countries the following principles should be observed:[139]

- Quantified emission reduction commitments are established for all developed country parties;

- "Measurable, reportable and verifiable" refers to legally-binding quantified emissions reduction commitments (QERCs) that are absolute, and that are verified for compliance;

- Mitigation commitments by developed country Parties as a group must be at the top of the range indicated by the IPCC in order to achieve the lowest stabilization levels assessed by the IPCC's in its 4th assessment report. The aggregate number is for all developed country parties, regardless of whether they have ratified the Kyoto Protocol or not;

[138] Ibid pg 33
[139] Ibid

- In numerical terms; annex I Parties reduced their greenhouse gas emission by at least 40% below 1990 levels by 2020 and at least 80% - 95% below 1990 levels by 2050, to make a meaningful and fair contribution to achieving the lowest level of stabilization assessed by the IPCC's Fourth Assessment Report. At lower stabilization levels, the additional climate impacts are unacceptable to Africa;

- Comparability of effort is established through (i) comparability of targets (QERCs); and (ii) comparable compliance. The unit of measurement of comparability is tons of CO2-eq.

On the contrary, for mitigation actions by developing countries the following principles should be applied:

- "measurable, reportable and verifiable" is applied to mitigation actions by developing countries, which are relative reductions, or 'substantial deviations from baseline';

- Developing countries are to choose from a toolbox of voluntarily registered, nationally appropriate mitigation actions (NAMA), including sustainable development policies and measures (SDPAMS), programmatic CDM and others;

- A REDD-Plus mechanism should be designed in such a way as to accommodate different national circumstances and respective capabilities. Adequate, predictable and sustainable funds from a variety of sources, including globally;

- Nationally appropriate mitigation actions by developing countries will be reportable through national communications (if done with own resources) or in a separate registry for those with multilateral, measurable, reportable and verifiable support;

- The application of "verifiable" to unilateral mitigation actions by developing countries, must differentiated from those that are supported internationally;

- For actions with own resources, verification is by national entities working with international guidelines, For multilaterally supported actions, verification is through the UNFCCC

4.8 The Role of Law in Implementing an Effective Regulatory Scheme

As scientists continue to warn that the world stands the risk of witnessing an abrupt sea level rise, frequency of extreme weather events, the spread of diseases and loss of lives as a result of climate change if no drastic action is taken, municipal law, conventions, protocols, policies and treaties are also being developed and fine-tuned to deal with the problem. What this emphasizes is the importance of law in influencing the actions of governments, multinational corporations and individuals within the society with a view to protecting the environment and maintaining a balance **i**nhuman activities. The role of law which is to set standards for acceptable behavior in the society and to set sanctions for defaulters can be undertaken through different modes of governance namely, - self-governance, control and compliance governance, governance by provision and governance by enabling.[140]

[140] Fagbohun, O. & Nlerum, F: Implementing an Effective Regulatory Scheme for Climate Change in Nigeria NIALS (Nigerian Institute of Advanced Legal Studies) Journal of Environmental Law. Vol. 1 (2011)pg 266

Self-governance relates to the capacity of the government to shape its own activities. In this mode government seeks to lead by example in the way it undertakes its own activities. Control and compliance governance is the use of traditional forms of authority such as using regulations and planning laws to promote activities that contribute to the reduction of GHG emissions. Governance by provision is achieved through the delivery of particular forms of service or resource. It involves the ability to control the nature of infrastructure development in ways that influence practices of individuals and the trajectories of future development. Governance by enabling takes place through partnership with private and voluntary agencies and various community engagements. It involves promotional activities, public-private partnerships and the provision of financial incentives or subsidies to encourage action by other actors for particular policy ends. Governance by provision and enabling are critically important in the way they involve stakeholders and build local support base in developing solutions. All these modes of governance influence the overall approach in the use of legal instruments in the context of multi-level governance.[141]

In recognition of the role of law, governments all over the world, policy makers and international organizations have used law to address the challenges of climate change. In this regard, stemming from the fact that climate change is not the responsibility of any one particular person but that of all, the global approach pushed by the United Nations is one in which there is concerted effort at ensuring sustainability of the common heritage of mankind. It was this approach that in 1998 informed the setting up of the IPCC which subsequently proffered the

[141] Ibid, pg 272

scientific evidence that led to the negotiation of the United Nations Framework Convention on Climate Change (UNFCCC) at the Rio Summit in 1992.[142]

The stated objective of the UNFCCC was to stabilize atmospheric concentration of GHGs at safe levels with countries pledging to prevent dangerous anthropogenic interference with the climate system. To achieve this objective, all countries signatory to the convention have a general commitment to address climate change, adapt to its effects and report their actions to implement the Convention. Emphasis was placed on the need for parties to protect the climate system on the basis of equity and in accordance with common but differentiated responsibility and respective capabilities. Developed countries were expected to take the lead by reducing their aggregate levels of emissions.[143]

Imperatives of an Effective Regulatory Scheme

The need for a regulatory framework to support mitigation and adaptation policies is very vital. The focus of law is to stipulate measures toward reducing causes of climate change and more importantly the most appropriate responses to climate change in case the predicted impacts manifest.[144]Already, there are identified and defined global measures that an effective regulatory framework must be able to respond to i.e. preparation of an inventory of sources and sinks of GHG's; elaborate assessment of potential impacts of climate change ; designing an action plan to address climate change and its adverse impacts; preparation of national communication to the COP; enhancing general awareness and knowledge on climate change and related issues and

[142] Ibid
[143] Ibid
[144] Hougnton, J. et al.: Climate Change 1995;The Science of Climate Change (Assessment Report of the IPCC) Cambridge University Press 1996

strengthening dialogue, information exchange and cooperation among the relevant stakeholders including government, non-governmental, academic and private sector agencies.[145]

Nigeria as in the case with other countries, the impacts of climate change is beginning to manifest in the different phases of the economy, therefore the need to strengthen mitigation and adaptation strategies have become an imperative. This will involve the development and mainstreaming of policies of policies and measures that can address climate change in ongoing and new development policies, while also encouraging continuity of initiatives that are directed at reducing climate change-related risks.[146]

An effective framework requires an enabling environment i.e. institution with knowledge and skills which must prioritise climate risks, and be imbued with capability for continuous improvement using appropriate indicators to monitor and review. It must have the capacity to address multi-layered environmental problems and factor in such critical components as individual lifestyles, business consensus, public opinion, market opportunities and environmental advocacy. It must also have a clear understanding of the two responses to climate change, namely mitigation and adaptation.

Some of the principal Legislation that the Nigerian as a country has that relates with the activity of monitoring the environment which also seeks some form of mitigations are as highlighted:

- National Environmental Standards and Regulations Enforcement Agency

- National Automotive Council Act

[145]Fagbohun. O & Nlerum. F: Op. Cit pg 280
[146] Ibid

- National Environmental (Control of Vehicle Emission from Petrol and Diesel Engine) Regulations 2011

- Nigeria Climate Change Commission Bill

It should however be stated that since the passage of the Nigeria Climate Change Commission Bill by the National Assembly, it has not received the assent of the President of the Republic of Nigeria and thus ineffective.

Climate change is, at the moment the most important menace to earth's biodiversity, natural resources, agriculture and access to food, poverty eradication and water availability. The increasing threats to livelihoods and poverty reduction have reinforced the need for management of risks as well as proactive action in addressing climate change issues. Presently, the existing legal and institutional framework for regulating climate change is in a fragmented form. There are several incoherent laws and implementing agencies for environmental protection in relation to climate change. The lack of infrastructure for regular monitoring and enforcement and the non-deterrent nature of penalties for violations are critical challenges. [147]

Addressing climate change is beneficial, both financially and economically and fighting through global concerted effort make sense. This is why nations and governments are expected to make the best possible use of different available tools. The role of law is very critical in meeting commitments and actions to mitigate greenhouse gas emission and adapt to its effects if progress is to be made globally in addressing climate change.[148]

[147] Ibid pg 295
[148] Ibid

CHAPTER FIVE

FINDINGS, RECOMMENDATIONS AND CONCLUSION

5.1 Findings

Nigeria's climate is likely to see growing shifts in temperature, rainfall, storms and sea level throughout the twenty-first century. These climatic challenges, if unaddressed, could throw already stressed resources such as land and water into even shorter supply. Moreover, poor responses to resources shortages could have serious negative secondary effects, including more sickness and hunger, fewer jobs, and poor economic growth. Although inadequate analysis has clouded the picture of how climate change will affect Nigeria's environment and resources base.[149]

Since Nigeria is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), there are obligations to this convention which open up opportunities for benefiting technology transfer and receiving international assistance (including financial) for capacity building to enhance our ability to respond to climate change while nursing sustainable development. Adherent to the Convention and its Protocol (the Kyoto protocol and Clean Development Mechanism, CDM) offers the opportunity for acquiring clean technology and developing more efficient, productive and beneficial ways of utilizing resources, e.g. channeling gas at present being wastefully flared into various industries and downstream uses. Our concern for climate change should stem partly from these strategic considerations.

[149] Sanye, A. Op. Cit

5.2 Recommendations

Following the analysis of the Kyoto Protocol whose core objects include the three flexible mechanism which include the Joint Implementation, Clean Development Mechanism, Emission Trading as well as Mitigation and Adaptation strategy in combating climate change.

The following recommendations are made for the purpose of issues of negotiations which are discussed during the climate change conventions to putting Nigeria on the right balance to get a good deal.

These issues of Negotiation are highlighted as follows:[150]

Clean Development Mechanism

- CDM is a strong financial mechanism for attracting investment from the developed country for carbon credits.
- Nigeria needs to press for capacity building in the CDM process and implementation to make it possible for her to tap into the huge potentials of the CDM.
- Given the significance of forestry in the Nigerian economy and increasing relevance of agro forestry practices for sustainable agriculture in the country. Nigeria should press further with other African countries, the need to recognize forestry projects and sustainable agricultural practices as candidates under carbon markets for CDM.

Emission Trading

- Diversification of the economy away from oil production and channeling resources to manufacturing and service sectors of the economy including agriculture provides the key

[150]Adesina F A et al: Recommendations for Nigeria's position in Copenhagen Op. cit pg 25

to Nigeria's economic stability. This will ensure that the global shift away from fossil fuel energy sources will not create any significant negative impact on the economy in the future. Nigeria needs to act fast in this regard

- Increase government participation is crucial in the global climate change deliberation. Nigeria can only be sure that its interest is protected in the emergent global abatement strategy if it increases its level of participation
- Further studies should explore the quota given to Nigeria so as to know the space they will sell or trade upon
- Further studies should look into other gases that have the same effect as CO2 in the atmosphere vis-à-vis global warming
- Finally, as individuals, the choice we make contributes positively or negatively to global warming. Choosing modern technology can reduce our use of fossil fuels and help protect the planet. Proper consideration should be accorded to landscape in our homes. We should plant trees and protect the forest in order to boost the oxygen content in atmosphere, buy energy saving electronic and appliances, replace incandescent light bulbs with compact fluorescent bulbs. Furthermore, saving energy at home is positive to the environment and also reduces the domestic spending cost.

Reducing Emissions from Deforestation and Forest Degradation (REDD)

- Nigeria must continue her drive for afforestation and reduction of deforestation particularly in the rainforest belt. The country must improve methodologies for measuring and controlling land use change.

- Nigeria should also insist on immediate implementation of REDD agreements and press for clear methodologies for the generation of measurable , reportable and verifiable REDD credits as a means of deriving benefits for conservation efforts.
- Nigeria should seek incentives to reduce emission and support technological change in agriculture. The implementation of REDD agreement must not compromise the small economies of the local people.

Technology Transfer

- Nigeria needs to articulate her needs for technological transfer in the various sectors of its economy. This will be addressed by conducting a Technological Needs Assessment of the country.
- Tariffs placed on clean energy technologies should be reduced or eliminated.
- Support a post-Kyoto agreement that incorporate all developed countries and all major developing countries.
- The country should also expand opportunities for capacity building in science and technology.
- Nigeria should also support the African proposal that technology transfer should address all the technology life stages- retrofitting old technologies , deploying existing climate friendly technologies, incentivizing new and emerging technologies , investing in Research and Development, demonstration and pilot project.

Public Awareness and Education

- Article 6 of the convention specifically provides that awareness and education on Climate Change issues be a major focus. In Nigeria the significance of this is overwhelming as many people still have little or no idea of what climate change is all about.

- Nigeria should join her voice with other nations in getting the developed countries to provide funds for the implementation of Article 6.

Domestic Financing

- Oil companies and other greenhouse gases producing industrial activities like cement factories should pay more taxes from their profits to provide funds for adaptation.
- Government should put in place incentive packages for the development and use of renewable energy. This could be low tax on materials used for renewable energy.
- Sensitise all the agencies in government for campaigns that will assist in getting enough allocation during budget presentation.
- Private individuals should be encouraged to invest in projects that may not have financial returns but have ecological heritages.

5.3 Conclusion

From the aforesaid on the topic of this thesis very little is actually being done in terms of specific climate change control and adaptation activities in the country. Forest destruction is going on unabated and it is difficult to belief that there is any law protecting forest reserves in the country. There is little or no control of urban spread and among other things dependence on biomass for domestic energy which is on the increase due to rising cost of alternative source of energy. There is a perception that climate change is not such a significant issue which government should care about. It is even suggested that climate change is part of international politics initiated in the west to distract the attention of the developing countries from what should be their primary concern. Rather than talk about climate change the country should focus on such things as production of adequate food for all and supply of portable water. It is unfortunately not

understood that in addressing climate change issues , all these needs will in fact become better met in spite of changing climate that are likely to be less favorable.

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