Chapter 3:
Nigeria's commitments under the climate change Paris Agreement: legislative and regulatory imperatives towards ensuring sustainable development

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1 Introduction

The United Nations Framework Convention on Climate Change (UNFCCC) was signed at the 1992 Rio Earth Summit when countries agreed to limit their emissions of greenhouse gases (GHGs). Years after this historic treaty was opened for signature there have been far-reaching changes in the understanding of, response to, and governance of climate change. The latest report by the Intergovernmental Panel on Climate Change (IPCC) indicates that human-induced climate change is already taking place with significant adverse effects on the environment and the earth systems.[1] In response to this phenomenal threat to humanity, there are increasing and sometimes comprehensive international, regional, and national climate change policies and programmes from governments, business and civil society. For instance, many countries have developed comprehensive legislation on climate change. The UK was the first country, with its historic 2008 Climate Change Act.[2] Other countries have followed the UK's footsteps.[3] Altogether, 99 countries, consisting of 33 developed and 66 developing countries, which represent around 93% of global emissions, have national laws or policies directly related to climate change mitigation and adaptation.[4]

The foundation for the Paris Climate Change Agreement, 2015 was laid during the 2011 Durban climate change rounds of negotiation in Durban, South Africa. The Durban Outcome is significant because it heralded a new climate change regime that finally culminated in the Paris Agreement. One of the key characteristics of the Paris Agreement is that it applies to all, both developed, emerging economies, developing and least developed countries, unlike the UNFCCC's Kyoto Protocol of 2005 which

1 IPCC (2014).
2 Climate Change Act 2008, CAP 27.
3 According to the Globe climate legislation study, by the end of 2014 there were 804 climate change laws and policies. See Nachmany et al. (2015). Also see the UK Climate Change Act of 2008, the Philippines Climate Change Act of 2009 and most recently the Mexico General Law on Climate Change of 2012 and Kenya's Climate Change Authority Bill of 2012.
4 Nachmany et al. (2015).

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made a distinction amongst nations based on their capabilities and the international law principle of common but differentiated responsibilities.[5]

The success of the Paris Agreement can be linked to its bottom-up approach, different from the Kyoto Protocol which adopted a top-down approach adopted by the UN and influential powers for decades.[6] Basically, the negotiations were focused on what each country and region, whether developed, developing, or least developed, is willing to contribute to the 2°C target. More importantly, it is hoped that these joint efforts will collectively contribute to what is required to stem catastrophic climate change in the future, such that we can restrict and keep warming under 2°C pre-industrial levels.

The Paris Agreement still retains the founding principle of the UNFCCC such as the international principle of sustainable development,[7] the precautionary principle and the principle of common but differentiated responsibility (CBDR).[8] For instance, the country-specific pledges required applied the principle of CBDR. In addition, the Paris Agreement acknowledges and introduces new concepts that were not captured in the UNFCCC such as human rights obligations, climate justice, the rights of women, vulnerable groups, and indigenous peoples.[9]

The key elements of the Paris Agreement include the goal of holding global warming below 2°C; a system of national pledges to reduce emissions referred to in the Paris Agreement as 'nationally determined contributions' (NDCs);[10] the non-binding character of these contributions, the reliance on transparency rather than legal enforcement to promote accountability and effectiveness; the shift away from the Annex I and non-Annex I differentiation in terms of emission reduction commitments towards a more flexible approach that encompasses all countries, whether developed or developing; the pledge to mobilise climate finance from public and private sources, and, perhaps most importantly, the bottom-up approach of the agreement. The Paris Agreement

5 The Kyoto Protocol made a fine distinction between developed and developing countries in terms of having binding emission reduction commitment. Under the Kyoto Protocol, based on the international law principle of common but differentiated responsibilities, only developed countries, tagged as Annex I countries, have binding emission reduction commitments while developing countries, tagged as non-Annex I countries, did not have binding emission reduction commitments but were enjoined to work towards achieving the 'ultimate objective of the Convention. Article 2 of the UNFCCC states that the ultimate objective of the Convention and any related instrument is to achieve stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

6 Although Van Asselt and Zelli (2018: 31) disagree with this description and stated that the Protocol never fitted neatly into the top-down description. Rather, that the Kyoto climate regime was a hybrid of top-down and bottom-up elements. See also Hare et al. (2010).

7 Article 2(1) of the Paris Agreement.

8 Article 2(2) of the Paris Agreement.

9 Preamble para. 6 of the Paris Agreement.

10 Article 4 para. 2 of the Paris Agreement.

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entered into force on 4 November 2016, thirty days after the date on which the minimum of 55 Parties to the Convention accounting in total for at least an estimated 55% of the total global greenhouse gas emissions had deposited their instruments of ratification, acceptance, approval or accession with the Depositary.[11]

2 The impacts of climate change in Nigeria

The IPCC's Fourth Assessment Report 2007 stated that of all the continents, Africa would be severely hit by the impacts of climate change, strengthened by Africa's weak capacity for adaptation and mitigation.[12] According to the IPCC Report, Africa is one of the most vulnerable continents to climate change and climate variability. Africa's major economic sectors are vulnerable to current climate sensitivity, with huge economic impacts. The Fifth Assessment Report of the IPCC confirms that this vulnerability is exacerbated by existing developmental challenges such as endemic poverty, complex governance and institutional dimensions, limited access to capital, including markets, infrastructure and technology, ecosystem degradation, and natural disasters and conflicts. These, in turn, have contributed to Africa's weak adaptive capacity, increasing the continent's vulnerability to projected climate change.[13]

Many scientists studying the potential impact of climate change have predicted that Africa is likely to experience higher temperatures, rising sea levels, changing rainfall patterns and increased climate variability with consequential impacts on its population.[14] The Food and Agriculture Organisation (FAO) of the United Nations predicts negative impacts of climate change on agricultural production and food security in large parts of sub-Saharan Africa, higher temperatures, the drying-up of soils, increased pest and disease pressure, and shifts in suitable areas for growing crops and livestock.[15] Unmitigated climate change could create risks of major disruption to economic and social activity similar in scale to those experienced during the great wars and the economic depression of the first half of the 20th century.[16]

At present and in the long term, Nigeria remains vulnerable to climate change and its negative impacts. For example, certain activities in Nigeria are directly and indirectly associated with long-term adverse environmental impacts which contribute to global warming. These include gas flaring, deforestation due to cutting forests for biomass products, and emission of GHGs due to the use of fossil fuels. Many elements of the environment and human society are sensitive to climate change, such as the

11 Article 21 of the Paris Agreement.
12 Parry et al. (2007: 433-435).
13 IPCC (2014).
14 Tadesse (2010: 1).
15 FAO (2008).
16 Stern (2006: ii).

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ecosystem, agriculture, water needs and supply, and food production among others. Nigeria's 2011 National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN)[17] identifies 13 sectors as having climate change impacts. These are agriculture (Crops and Livestock); freshwater resources; coastal water resources and fisheries; forests; biodiversity; health and sanitation; human settlements and housing; energy; transportation and communications; industry and commerce; disaster migration and security; livelihoods; and vulnerable groups and education.[18]

Many developing countries located in tropical areas are already enduring climate extremes, such as very high temperatures, heat waves, droughts, hurricanes, floods, and variability in rainfall.[19] The continued increase in global temperature will intensify these incidences of extreme weather conditions. For example, in recent years, Nigeria has been experiencing very high temperatures, heat waves, droughts, and variability in rainfall.[20] These extreme weather conditions result in several adverse effects such as poor air quality which increases air-borne diseases, and it increases the incidences of respiratory-related illness. Similarly, sea level rise threatens small islands, low-lying coastal areas such as Lagos State in Nigeria and other major world cities such as New York and London.[21] It threatens Nigeria's coastal regions. For example, although the Niger Delta is the source of oil wealth, its low-lying terrain, crisscrossed with waterways makes it extremely vulnerable to flooding and salinisation.[22] Furthermore, half of the 15 million population of the city of Lagos live less than six feet above sea level; Victoria Island is particularly vulnerable along with the several slum settlements around it.[23] According to the News Agency of Nigeria (NAN),[24] there are fears that no fewer than 25 million Nigerians living along coastal communities of Rivers Niger, Benue, Sokoto, Katsina Lagos, Ondo, Delta, Akwa Ibom, Bayelsa and the Cross River States in Nigeria are exposed to possible displacement and devastation due to flooding.

17 This Report was prepared for the Special Climate Change Unit of Nigeria's Federal Ministry of Environment by the Building Nigeria's Response to Climate Change (BNRCC) project, a project funded by the Canadian International Development Agency.

18 National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) 2011 <http://nigeriaclimatechange.org/naspa.pdf> (accessed 11-12-2017).

19 Stern (2006: 106-107).

20 Abaje et al. (2014). Also see Tunde (2011).

21 For example, Tuvalu, a Polynesian island nation located in the Pacific Ocean, midway between Hawaii and Australia, is particularly susceptible to the adverse impacts of climate change and rising sea level, and there are fears that Tuvalu will be uninhabitable or may vanish entirely within a few decades. According to its Prime Minister, SaufatuSapo'aga, the sea level rise as a result of climate change and global warming is no different from "a slow and insidious form of terrorism against us". See Mansbach & Taylor (2012).

22 Fatile (2012: 78).

23 Ibeabuchi et al. (2018).

24 The National Emergency Management Agency (NEMA) also confirms that about 25 million people living in coastal regions of the country were at risk of the devastation of floods.

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Communities have been displaced in Kano, Jigawa, Cross River, Taraba, Adamawa, Niger, and the Anambra States.[25]

As a result of climate change, droughts will become more severe in some areas, particularly in Africa.[26] A key example is the vanishing Lake Chad in West Africa.[27] Lake Chad was once Africa's largest water reservoir in the Sahel region, covering an area of about 26,000 km^2. However, by 2000, the lake covered less than one-fifth of that area.[28] According to Salkida[29], the FAO describes the state of the lake as an ecological catastrophe, and has predicted that the lake could disappear this century. The ecological catastrophe has led to drought-induced famine and locusts, and an increase in the number of extremely hot days in the Sahel and northern Nigeria. Climate change will lead to increased incidence of death from climate-related diseases such as diarrhoea, malaria, meningitis, and malnutrition.[30] The distribution and abundance of disease vectors are closely linked to temperature and rainfall patterns. Changes to mosquito distributions and abundance will have profound impacts on malaria prevalence in developing countries such as Nigeria. The World Health Organisation (WHO) estimates that since the 1970s, climate change has been responsible for over 150,000 deaths each year from diarrhoea, malaria, and malnutrition, predominantly in Africa, and other developing regions.[31] If effective mitigation and adaptation strategies are not observed, the numbers are expected to double to 300,000 deaths each year by 2030.[32] According to the NASPA-CCN, climate change has a direct and indirect impact on the health of Nigerians. Direct health impacts of climate change stem from extreme events such as heat waves, floods, droughts, windstorms, and wildfires. Indirect effects of climate change on health may arise from malnutrition due to reduced food production, from a spread of infectious disease on food and water-borne illness, and from increased air pollution.[33]

Also, the various impacts of climate change will likely result in migration.[34] Some of these impacts are land degradation, droughts, deforestation, water scarcity, floods,

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25 National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN), 2.
26 Conway (2009).
27 "As you approach the Lake Chad basin from Maiduguri… the atmosphere of despair is telling. The air is dusty, the wind is fierce and unrelenting, the plants are wilting and the earth is turning into sand dunes…. The lives of herdsmen, fishermen and farmers are teetering on the edge as the lake dries up before their eyes" Salkida (2012). Lake Chad is located in the far west of Chad and the northeast of Nigeria. The lake also extends to Niger and Cameroon. It is fed mainly by the Chari River. See the Lake Chad Basin Commission at <http://www.lakechadbc.org/.> (accessed 11-12-2017).
28 See Salkida (2012).
29 Ibid.
30 African Climate Policy Centre (2011).
31 Stern (2006: 75).
32 Ibid.
33 NASPA-CCN, 19.
34 Raleigh et al. (2008).

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storms and famines linked to food shortages and insecurity.[35] Furthermore, climate change-induced migration, which is likely to be more frequent as a result of increased flooding and extreme weather conditions in Nigeria, can create and intensify violent conflicts over scarce resources such as water and land for farming.[36]

Climate change threatens Nigeria's oil and gas investment.[37] This investment is at risk from the negative impacts of climate change, including rising sea levels, heavy storms, floods, high winds and shoreline erosion.[38] It is also expected to negatively impact the already limited electrical power supply through impacts on hydroelectric and thermal generation.[39] There is no gainsaying that these impacts will add pressures on limited resources and they are a threat to the sustainable development goals. In Africa and other developing regions of the world, climate change is a threat to economic growth, long-term prosperity, as well as the survival of already vulnerable populations. Consequences of this include persistence of economic, social and environmental inequalities and vulnerabilities.

3 Highlights of Nigeria's Nationally Determined Contribution

Nigeria's contribution to global emissions as of 2010 is estimated to be 1% of total total emission.[40] Nevertheless, Nigeria is committed to tackling climate change. NDCs are country-specific pledges to cut carbon emissions, thereby, 'contributing' to the net global carbon emission index which is aimed at an overall reduction of global warming. The Intended Nationally Determined Contributions (INDCs) become Nationally Determined Contributions as countries ratify the Paris Agreement. Nigeria's INDCs became the NDCs in March 2017 after the ratification of the Paris Agreement by the Federal Government of Nigeria. The approved NDCs emphasise the delivery of direct development benefits and sustainable growth of the economy through policy measures that help to alleviate poverty, increase social welfare and inclusion, as well as improve individual well-being and promote a healthy environment. The NDCs aim to achieve a reduction in GHG emissions from the business as usual (BAU) scenario using historical emissions data between 2010 and 2014 for predicting 2015 to 2030 emissions scenario.[41]

35 Bob & Bronkhorst (2010).
36 Fatile & Adejobi (2012).
37 NASPA-CCN, 20.
38 Ibid.
39 Ibid.
40 Nigeria's (Intended) Nationally Determined Contribution.
41 The GHGs targeted are CO_2, N_2O, and CH_4.

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The key measures of achieving Nigeria's emission reduction commitment include ending gas flaring by 2030; generating off-grid solar PV of 13 GW (13,000 MW);[42] efficient gas generation; increasing energy efficiency annually by 2% that will result in 30% efficiency by 2030; increasing the use of public transportation such as buses, trains, and light rail; increasing the capacity and efficiency of the electricity grid; and promoting the use of climate-smart agriculture and reforestation. Thus, the NDCs target key carbon-intensive sectors of the economy such as the oil and gas, energy, transport, agriculture and land use and transport sectors.

Notably, Nigeria aims to reduce emissions per real GDP from the base year from 0.873 kg CO_2e to 0.491 kg CO_2e in 2030, which will result in 43.8% CO_2e reduction in GHGs from the 2010-2014 BAU scenarios. Likewise, in monetary terms, it aims to increase its GDP per capita from US$2,950 as at 2014 base year to US$3,964 by 2030, resulting in 34.4% GDP per capita by 2030.[43] However, this reduction is attributed to both 20% unconditional and 45% conditional mitigation objectives respectively. Thus, Nigeria states that it will achieve 20% target GHG reduction without external support for implementation. In addition, the NDC set a conditional 40% reduction in GHGs contingent on international support in the form of climate finance, smart technology development and transfer, and capacity building. Therefore, climate finance is a condition for undertaking ambitious mitigation and adaptation for further incremental reduction of GHG emissions.

The estimated cost for implementing the mitigation and adaptation measures stated in its NDC is $142b, while the national benefit for implementing these measures is calculated to be about $304b. This implies that GHG emissions per capita will reduce by 0.68 tonnes with unconditional activities but with additional support and climate finance Nigeria can reduce her per capita emission by 1.53 tonnes GHG. The NDC cautions that some of the policies and mitigation measures contained therein can only be implemented with significant international support. Therefore, mitigation measures that require substantial investment, even if cost-effective over the life of the investment will be carefully reviewed before being implemented. Nigeria's NDCs represent an integrated and comprehensive strategic approach towards promoting a low carbon, high growth, climate-resilient path for national sustainable development. However, the key question to consider is if the existing legal and regulatory framework supports this strategic approach – a low carbon economy and towards sustainable development.

42 Note that the NDC does not specify a time frame within which this will be achieved.
43 Nigeria's (Intended) Nationally Determined Contribution.

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4 Nigeria's NDC commitments: existing legislative and regulatory framework

A regulatory and institutional framework is required for a coherent response to climate change. Unless this is in place, sectoral climate change actions will struggle to be implemented, and existing policies, legislation and regulations will work at cross purposes. Creating and managing an effective climate change response takes place through institutional arrangements. Cortner et al.[44] define institutions as the expression of the terms of collective human experience; institutions express how people interact with each other and their environment and they represent a means through which social problems are resolved.

Against the backdrop of the adverse impact of climate change on environmental, economic and social sectors and Nigeria's commitments under its NDCs, what are the existing legal and regulatory frameworks to assist in the effective implementation of Nigeria's commitments and what legislative and regulatory gaps exist? Currently, Nigeria does not have a climate change legislation, although legislation on climate change is gradually becoming an international global standard for countries keen on integrating climate change response into their development plans to ensure sustainable development. In addition to the fact that Nigeria does not have a climate change law, there are certain pieces of legislation that act as a drawback on the existing regulatory and institutional framework.[45] There are also certain laws working at cross purposes with Nigeria's NDC commitment. The existing regulatory and institutional framework for implementing Nigeria's NDC commitments include the 1999 Constitution of Nigeria; the 2011 National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN); the 2007 National Environmental Standards and Regulations Enforcement Agency (Establishment) Act (NESREA); the Environmental Impact Assessment Act; the 1988 National Policy on Environment (revised in 2016); the 2006 National Forestry Policy; and on the institutional side the Department of Climate Change and the Ministry of Environment.

4.1 The 1999 Constitution of Nigeria

The 1999 Constitution of Nigeria is the first of the three previous constitutions to include a specific provision on the environment.[46] This provision is contained in

44 Cortner (1988: 160).

45 Associated Gas Re-injection Act, Cap A25, LFN 2004 and The Associated Gas Re-injection (Continued Flaring of Gas) Regulation, LFN, 2004.

46 It is important to note however that earlier Constitutions like the 1979 Constitution had considerable provisions which had great significance for environmental management. For example, in the way the Constitution contemplated the conservation and rational use of the environment.

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Section 20 of the Constitution which states that "the State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria".[47] The wording of Section 20 is quite broad to promote a broad framework for environmental protection and management. However, this provision is hampered because it is included under Chapter II of the Constitution and therefore forms part of the non-justiciable "Fundamental Objectives and Directives Principles of State Policy (FODPSP)".[48] Chapter IV, unlike Chapter II, the FODPSP, guarantees certain rights classified as fundamental human rights including the right to life which are justiciable and adequately protected by implementation mechanisms.[49]

Section 20 is further hampered by Section 6(6)(c) of the Constitution which provides that:

> The judicial power vested in the judiciary shall not extend to any issue or question as to whether any act of omission by any authority or person or as to whether any law or any judicial decision is in conformity with the Fundamental Objectives and Directive Principles of State Policy.

This imperative effectively limits the powers of the courts to consider issues bordering on environmental rights and disables the citizens from seeking to claim or the courts to enforce environmental rights. This is despite the fact that Section 20 of the 1999 Constitution forms part of the rights guaranteed by the African Charter on Human and Peoples' Rights (the African Charter), which Nigeria is a signatory to. The African Charter was domesticated in Nigeria in 1983 under the African Charter on Human and Peoples' Rights (ratification and enforcement) Act Cap A9 LFN 2004. The African Charter is a regional treaty that affirms both civil and political rights such as those guaranteed by Chapter IV of the 1999 Constitution as well as economic, social and cultural rights such as those provided for under Chapter II of the 1999 Constitution and it makes no distinction between them. However, the Nigerian Supreme Court has severally held that where there is a conflict between Treaties and the Constitution, the provisions of the Constitution shall prevail in the event of a conflict.[50]

For a detailed appraisal of provisions of the Nigerian Constitution with respect to environmental management, see Fagbohun (2002: 24).

47 Constitution of the Federal Republic of Nigeria, 1999.

48 For further reading on this see Okere (1983).

49 For instance the Fundamental Human Rights Enforcement Procedure Rules of 2000 provides the implementation mechanism for protecting the fundamental rights enshrined in the 1999 Constitution.

50 In the case of *Sani Abacha v. Gani Fawehinmi* (2000) 6 Nigerian Weekly Law Report (NWLR) (Part 660) at 228 the Supreme Court held that although the African Charter is superior to other laws, it is subordinate to the Constitution of Nigeria. It is interesting to note that the African Charter has been accorded superior status in some African countries. Also see *Onooha Kalu v. The State* (1998) 13 NWLR (Part 583). Compare the position of the Nigerian Supreme Court with the Indian Supreme Court. Just like Nigeria, economic social and cultural rights are not enforceable in India because those rights are contained in the part of the Constitution dealing with fundamental objectives and directive principles of state policy. However, the courts in India have through an expansive interpretation of the civil and political rights guaranteed under

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Constitutional provisions can play an empowering role in engendering effective protection of the environment and strengthening of environmental institutions.[51] Constitutions can guarantee environmental rights, which are increasingly recognised as a fundamental human right to "adequate conditions of life".[52] However, as mentioned earlier, the realities of Nigeria being an oil-producing nation makes it imperative to make Section 20 justiciable or like in India, although there is no specific provision in their fundamental human rights chapter bestowing a right to clean environment, this right has been made incidental to fundamental rights, such as the right to life, through judicial activism.[53]

4.2 The National Adaptation Strategy and Plan of Action on Climate Change for Nigeria

In November 2011, Nigeria launched its National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN).[54] The Strategy aims to ensure that climate change adaptation is an integral component of sustainable development.[55] The objectives of Nigeria's Climate Change Policy document are to reduce the impacts of climate change through adaptation measures that can be undertaken by the federal, state and local governments, civil society, the private sector, communities and individuals.

The climate change policy document recommended strategies for the following 13 priority sectors: agriculture, freshwater resources, coastal water resources and fisheries, forests, biodiversity, health and sanitation, human settlements and housing, energy, transportation and communications, industry and commerce, disaster, migration and security, livelihoods, vulnerable groups, and education. For instance, the strategy for agriculture includes to adopt better soil management practices and provide early warning/meteorological forecasts and to implement strategies for improved resource

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its constitution, enforced and promoted economic social and political rights. See the case of *Olga Tellis v. Bombay Municipal Corporation* (1985) 3 SCC 545. See also Okenwa (2015).

51 Bruch et al. (2011).

52 There is a new trend of constitutions that guarantee environmental rights. These constitutions not only provide for environmental rights but also stipulate both environmental rights and duties, including the State's duties. For a review of environmental mental rights and duties in African constitutions, see C Bruch "Breathing Life into Fundamental Principles: Implementing Constitutional Environmental Protections in Africa. Environmental Governance in Africa" (2011) Working Papers Series World Resources Institute.

53 South Africa and India: *Minister of Health v. Treatment Action Campaign* 2002 (5) SA 721 (CC); and *Olga Tellis v. Bombay Municipal Corporation* (1985) 3 SCC 545.

54 See <http://nigeriaclimatechange.org/naspa.pdf> (accessed 10-12-2017).

55 The other strategies include: reduce the vulnerability and enhance the resilience and adaptive capacity of all economic sectors and of all people, particularly women, children, and resource-poor men; and capture the opportunities that arise as a result of climate change.

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management, as in, increase use of irrigation systems that use low amounts of water; increase rainwater and sustainable groundwater harvesting for use in agriculture.

4.3 The 2007 National Environmental Standards and Regulations Enforcement Agency (Establishment) Act

The 2007 National Environmental Standards and Regulations Enforcement Agency (Establishment) Act (NESREA) established a National Environmental Standards and Regulations Enforcement Agency as the regulator charged with responsibility for the protection and development of the environment in Nigeria.[56] NESREA among other things is empowered to enforce all environmental laws, guidelines, policies, standards and regulations in Nigeria, as well as enforcing compliance with the provisions of all international agreements, protocols, conventions and treaties on the environment to which Nigeria is a signatory.[57] Within the context of climate change, the following regulations and standards have been set by NESREA: National Environmental (Ozone Layer Protection) Regulations, 2009; National Effluent Limitation Regulations, Special Instrument No. 8, 1991; National Environmental Protection (Effluent Limitation) Regulations, 1991; National Environmental (Control of Bush, Forest Fire and Open Burning) Regulations, 2011; and National Environmental (Control of Vehicular Emissions from Petrol and Diesel Engines) Regulations, 2011.

In furtherance of its overseeing role and in order to achieve an integrated climate change response, it is expected that NESREA will coordinate, supervise and monitor the implementation of these standards and regulations in a holistic manner. However, this will be nearly impossible without a comprehensive and coherent regulatory framework that ties everything together.

4.4 The National Policy on the Environment

The National Policy on Environment 1991, revised in 1999 and 2016 defines a new holistic framework to guide the management of the environment and natural resources and to ensure environmental protection and the conservation of natural resources for

56 NESREA website <http://www.nesrea.gov.ng/> (accessed 10-12-2017). The vision and mission of NESREA are "to ensure a cleaner and healthier environment for Nigerians" and "to inspire personal and collective responsibility in building an environmentally conscious society for the achievement of sustainable development in Nigeria".

57 Section 7 NESREA Act.

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sustainable development.[58] The policy prescribes sectoral and cross-sectoral strategic policy statements and actions for the management of the different sector of the country's environment. The policy is guided by sound environmental principles such as the public trust doctrine,[59] the polluter pays principle, the precautionary principle, intra and inter-generational equity and an environmental right. The policy recognises emerging environmental challenges such as climate change, transboundary water resources, disasters, conflicts, genetically modified organisms and biosafety.

4.5 The 2006 National Forestry Policy

Nigeria's Forestry Policy[60] aims to encourage and support an aggressive establishment of plantations of economic trees and foster the redirection of development resources. The guiding principles of the policy are based on reducing the decline of forest resources and streamlining the contribution of forests to economic development and growth, particularly the National Economic Empowerment and Development Strategy (NEEDS).[61] The management strategy includes: (i) maintaining a sustainable supply of forest produce for internal consumption and exports; and (ii) increasing revenue to government. An examination of the strategy indicates that the policy is more concerned with the economic benefits of the forestry resources of Nigeria. There is little or no focus on its environmental management and conservation, its role in combating climate change[62] and achieving sustainable development. The shortcomings identified in this policy could be a result of the fact that the document was formulated in 2006 and it is due for an update to bring it up to speed with global best practices for forest management and governance.[63]

4.6 Proposed Bill to establish a National Climate Change Commission

There is a Climate Change Commission Bill pending before the Senate and the House of Representatives. The proposed Bill establishes a National Climate Change

58 National Policy on the Environment (revised 2016), at <http://environment.gov.ng/media/attachments/2017/09/22/revised-national-policy-on-the-environment-final-draft.pdf> (accessed 25-11-2017).
59 On John Sax's theory of Public Trust Doctrine, see Rose (1998).
60 See <www.fao.org/forestry/15148-0c4acebeb8e7e45af360ec63fcc4c1678.pdf> (accessed 12-12-2017).
61 The four key strategies of NEEDS are: reorienting values, reducing poverty, creating wealth and generating employment.
62 Forest is a veritable source for carbon sequestration and GHG mitigation.
63 For further reading on the National Forest Policy see Faleyimu & Agbeja (2012) and Aruofor (2003).

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Commission as a statutory body with a mandate to manage and control climate change and other related environmental matters.[64] When passed into law, the Bill will provide appropriate policies, institutions and the required planning and coordination for climate change response and governance in Nigeria. Furthermore, the proposed Climate Change Commission, when it is eventually established, will take over and expand the current role and functions of the Department of Climate Change, which is currently subsumed under the Federal Ministry of Environment.

4.7 The Department of Climate Change

The Department of Climate Change is a parastatal under the Federal Ministry of Environment and is the national focal point for climate change in Nigeria.[65] The Department coordinates activities towards national implementation of the UNFCCC and the Kyoto Protocol. The Department collaborates with other relevant government organisations, non-governmental organisations, academia and private sector under a Committee known as Inter-ministerial Committee on Climate Change (ICCC).[66] The ICCC is a policy advisory organ under the Chairmanship of the Federal Ministry of Environment. The Committee meets regularly on a quarterly basis and on ad-hoc basis to review policies on climate change, to advise government on appropriate actions, and to present Nigeria's position at meetings where climate change issues are being discussed or negotiated. The Department serves as the Designated National Authority (DNA) for the implementation of Clean Development Mechanism (CDM) projects in Nigeria.

5 Nigeria's NDC commitment: gaps, contradictions and imperatives for sustainable development

Globe International,[67] a non-governmental organisation committed to developing and overseeing the implementation of local or national laws in pursuit of sustainable development and climate change, recently carried out an audit of climate change-related legislation across the globe. According to the study, countries in sub-Saharan Africa achieved major developments in formulating national plans and strategies on climate change.[68] Kenya adopted the 2013-2017 Climate Change Action Plan, Mozambique adopted the 2013-2025 National Strategy for Climate Change with the aim of reducing

64 Section 1 of the Bill <www.nassnig.org/nass2/legislation.php?id=1423> (accessed 12-12-2017).
65 See <http://www.climatechange.gov.ng/> (accessed 11-12-2017).
66 See <http://climatechange.gov.ng/what-we-do/> (accessed 10-7-2018).
67 See <http://globelegislators.org/about-globe> (accessed 11-12-2017).
68 See <http://www.globeinternational.org/pdfviewer> (accessed 11-12-17).

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vulnerability to climate change and improving living conditions. Tanzania passed its National Strategy on REDD+ in March 2013. Rwanda approved its Second Economic Development and Poverty Reduction Strategy (2013-2018). However, it is important to note that national strategies, policies and plans such as Nigeria's NASPA-CCN only form the basis for future legislation and that they do not replace the need for national legislation on climate change.

There are several requirements for the NDCs. Generally, a country's NDC should: be ambitious in terms of its set goals; result in transformation of GHG intensive industries; be transparent, such that stakeholders can monitor effective implementation of stated goals; be equitable with regards to country's fair share of emission reduction burden; and ensure that climate change considerations are infused into relevant national policies and programmes such as those on sustainable development, environmental protection, poverty alleviation. However, and more importantly, individual country's NDC must establish linkages with the sustainable development goals (SDGs).

In a bid to achieve the NDCs, the Department of Climate Change of the Federal Ministry of Environment has developed action plans, policy and strategic documents such as the National Climate Change Strategy and Action Plan (2018-2022); the High-Level Road Map on Implementation of the Intended Nationally Determined Contributions (August 2016); and sectoral action plans of the agriculture, the forest, the industry, the oil and gas and the power and transport sectors. It has also launched Nigeria's Sovereign Green Bond in 2017; it is pursuing the passing of the Climate Change Bill at the National Assembly and is engaged in capacity building projects, advocacy, and tree planting and renewable energy/energy efficiency initiatives.[69]

However, despite these laudable strategies, there are existing (old) and relatively new national policies and action plans that threaten to jeopardise the achievement of Nigeria's NDC commitments, such as the Associated Gas Re-injection Act and its Associated Gas Re-injection (Continued Flaring of Gas) Regulations,[70] fuel subsidy, and Nigeria's Coal Power Project.

5.1 Oil and gas sector and flare out date

Gas flaring is the highest contributor to GHG emissions in Nigeria. The country is rated one of the highest gas flaring nations globally.[71] Developing countries are responsible for about 85% of the global emissions caused by flaring, and yet it is in these

69 Odogwu (2017).
70 Cap. A25 laws of the Federation of Nigeria, 2004. Note that there is a proposed amendment to this Act, namely the Associated Gas Re-injection (Amendment) Bill 2010.
71 World Bank (2016).

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countries that the associated gas could, for example, be used to provide access to affordable and clean energy for industries and households use.

It is estimated that Nigeria has the ninth largest gas reserves in the world, with 192 tcf of gas reserves. Presently, large quantities of associated gas are produced with crude oil, and a significant quantity is unutilised and flared. Approximately 330Bscf (or 19%) is flared annually. Despite the abundant reserve, Nigeria suffers from an acute energy crisis (electricity) due to several factors, including the inability of the gas sector to meet domestic demand for power generation.

Nigeria's NDCs aim to achieve a flare out date by 2030. The mitigation measures identified in the oil and gas sector are the enforcement of gas flaring restrictions, the development of gas-to-power plants at sites where associated gas is being flared, the blending of 10% by volume of fuel-ethanol with gasoline (E10) and of 20% by volume of biodiesel with petroleum diesel (B20) for use in the transportation fuels sectors. Achieving the flare out date is important for climate change mitigation and equally important for the achievement of the SDGs. However, for Nigeria to achieve its flare out date of 2030, there are some hurdles to consider. Achieving the flare out date requires enabling laws and the effective implementation of such laws and regulations. The provision of infrastructures such as gas gathering infrastructure, the buy-in of oil and gas companies involved in gas flaring and the respective political will are required to achieve the flare out date. Further prerequisites include to remove barriers to the diffusion of clean fuel such as natural gas and subsidies for non-sustainable fuels such as kerosene, to discourage the use of 'dirty fuels' such as firewood and charcoal at the household level, and to enhance access to clean energy.

Gas flaring is the main environmental challenge in Niger Delta of Nigeria, and it contributes more to greenhouse gases than all other oil producing nation in sub-Saharan Africa combined.[72] The Nigeria National Gas Policy (2017) also acknowledges the fact that the flaring of natural gas that is produced in association with oil is one of the most egregious environmental and energy waste practices in the Nigerian petroleum industry.[73] The practice of gas flaring continues in Nigeria, although, it has reduced. Although Nigeria still flares a significant portion of its gross natural gas production (19% of AG, 331 sbcf in 2015), the amount of gas flared has significantly reduced in recent years.[74] According to the ranking of top 30 flaring countries, Nigeria is ranked 6th highest flaring nation between the period 2013 to 2017.[75]

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72 Aghalino (2009); Eregha & Irughe (2009); Emoyan et al. (2008); and Kachikwu (2017: 9).

73 National Gas Policy: Nigerian Government Policy and Action 2017, at <http://www.petroleumindustrybill.com/wp-content/uploads/2017/06/National-Gas-Policy-Approved-By-FEC-in-June-2017.pdf> (accessed 10-7-2018).

74 See <http://businessnews.com.ng/2016/11/18/fg-to-introduce-new-penalty-for-gas-flaring/> (accessed 10-7-2018).

75 See <http://www.worldbank.org/en/programs/gasflaringreduction#7> (accessed 15-11-2018).

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The Associated Gas Reinjection Act 1979 and its Associated Gas Re-injection (Continued Flaring of Gas) Regulations[76] were the main regulatory framework for gas flaring in Nigeria until 2018 when the Flare Gas (Prevention of Waste and Pollution Regulations) 2018[77] was signed into law by the President of Nigeria. The Regulation is made pursuant to Section 9 of the Petroleum Act and Section 5 of the Associated Gas Re-Injection Act. The Regulation introduces a new and stiffer payment of penalties for gas flaring,[78] it adopts the polluters pay principle and it mimics a carbon tax regime. The Regulation further imposes reporting obligations on producers and flare out projects for the purpose of data reporting for gas flaring activities at project site. The Regulation has increased the payment of penalties from the meagre N10 (Naira) per thousand standard cubic feet to $2 per thousand standard cubic feet of gas. Nigeria having ratified the Paris Agreement, and being a signatory to the Global Gas Flaring Partnership (GGFR) principles for global flare-out by 2030 whilst committing to a national flare-out target by year 2020. Furthermore, the Nigerian Gas Flare Commercialisation Programme ("NGFCP") was established to harness gas that was hitherto flared in order to, amongst other objectives, stimulate economic growth, drive investments, provide jobs and protect the environment from the menace of gas flaring.[79] The objective of the NGFCP is to eliminate gas flaring through sustainable gas utilisation projects developed by third party investors who will participate in a competitive and transparent bid process. The Programme also aims to implement the National Gas Policy commitments for stricter regulation on flaring and to provide a pathway to ultimate flare-out.[80]

5.2 Nigeria's coal-to-power generation project

The Federal Government in 2017 partnered with the African Development Bank (AfDB) to fund coal projects in Nigeria. The Ministry of Mines and Steel Development and the Ministry of Power are collaborating on the coal projects which is expected to account for about 30% of the country's power mix.[81] The project plans to generate

76 Cap. A25 laws of the Federation of Nigeria, 2004. The Act and the regulation made pursuant to it failed woefully in addressing the perennial problem of gas flaring and energy resource waste in Nigeria.
77 See S.I. No. 9 of 2018.
78 The former penalty was gas flare penalty of N10/Mscf (equivalent US$0.03) of associated gas flared.
79 See <http://www.ngfcp.gov.ng/about-us/welcome-by-the-steering-committee-chairman/> (accessed 15-11-2018).
80 National Gas Policy: Nigerian Government Policy and Action 2017, at <http://www.petroleumindustrybill.com/wp-content/uploads/2017/06/National-Gas-Policy-Approved-By-FEC-in-June-2017.pdf.> (accessed 10-7-2018).
81 Adoyi (2017).

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about 30% of electricity through coal. This definitely negates the commitments under the NDCs and Nigeria's gas policy because coal mining is the highest source of GHG emissions. Furthermore, this project would impact on water management strategies, huge freshwater demand, ocean acidification, and air, water and land pollution, which negates Nigeria's climate change and sustainable development strategy.

5.3 The energy sector

In the energy sector, the NDCs aim to increase the use of renewable energy in Nigeria's energy mix, build multi-cycle power stations, increase the capacity of existing power stations by 20-50 MW, enhance energy efficiency by attaining 2% per year energy efficiency culminating in 30% efficiency by 2030, and encourage use of natural gas rather than liquid fuels. Prior to the privatisation of the electricity sector in Nigeria, the sector performed below expectations, and some would argue that in spite of privatisation, the sector is still performing below expectations.[82]

A state enterprise known as the National Electric Power Authority (NEPA) was established as an integrated monopoly services provider responsible for generation, transmission, distribution and sales of electricity faced overwhelming challenges in terms of its three core areas of power generation, transmission and distribution.[83] Some of the challenges that plagued the now defunct NEPA included: a lack of infrastructural development to match Nigeria burgeoning population and commercial activities; funding, irregular maintenance and obsolete power plants; inefficient and grossly inadequate transmission capabilities; vandalisation of transmission infrastructures and distribution facilities; inadequate power distribution facilities; poor revenue collection system; fragile and overloaded distribution networks; an inaccurate and unreliable billing system; and corruption and mismanagement of funds.[84] Liberalisation and commercialisation of the sector led to the Electricity Act of 1990 and its Amendment Act of 1988, the dissolution of NEPA and its replacement with the Power Holding Company of Nigeria (PHCN).[85] The current governance structure and legal framework for the electricity sector in Nigeria is the Electric Power Sector Reform (EPSR) Act, 2005.

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82 Adeyemo & Salami (2008: 408).

83 Sections 1 and 7 of the National Electric Power Authority Act 1972, LFN. For example, the current electricity grid is unable to reliably serve the teeming population and the industrial sector, most rural communities remain off the grid and about 60% of the population lack access to electricity. As a result of this shortfall in generation capacity, generators are widely used to meet household and industry energy needs. These generators are inefficient and polluting. See also Amokaye (2015: 737).

84 Omoluabi (2012).

85 For a historical overview of the electricity reform in Nigeria, see Oke (2013).

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This Act unbundled the State's stake in the power sector,[86] especially the generation and marketing elements, and it made electricity generation, sales and marketing open to independent power providers.

The current grid generation capacity is unable to meet the energy needs of industrial and urban consumers. As a result of this shortfall, industrial and other consumers have resorted to the use of inefficient and polluting generators for electricity. In addition, most rural communities remain off the grid, and it is estimated that at the current rate of grid expansion, these communities will remain largely under-served, and about 60% of the population lack access to electricity.[87] Of particular importance to Nigeria's NDC commitments is the infrastructural deficiency with regards to the distribution of electricity and the diversification of the national grid and diversification of energy mix to include renewables such as wind, solar and energy. The EPSR Act is silent on the issue of diversifying Nigeria's energy mix. However, the National Energy Master Plan (NEMP) and National Renewable Energy & Energy Efficiency Policy (NREEEP),[88] 2014 are policy documents that seek to address this gap. The NEMP provides the roadmap for achieving Nigeria's energy objectives in relevant sectors of the economy. In that regard, the NEPM focuses on all energy sources including renewable energy and efficiency and other crosscutting issues such as energy financing, capacity development. For instance, to achieve Nigeria's renewable energy objective and to encourage the diffusion of renewables, the NEMP recommends that an enabling regulatory and financial environment should be created in order to attract foreign direct investment and indigenous participation in renewable energy.[89]

However, more is required to ensure availability of affordable energy options, incentives to encourage diversification of the energy mix, and devolution of governance to local communities' governmental structure, in order to maximise the benefit of the reformed electricity sector in Nigeria. Furthermore, the proposed policy documents will ensure a robust and sustainable energy mix and the development of varied renewable energy sources in Nigeria.

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86 Note, however, that states usually retain control of electricity transmission and distribution, which are natural monopolies for national security reasons.

87 Nigeria's Intended Nationally Determined Contribution, at <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Nigeria/1/Approved%20Nigeria's%20INDC_271115.pdf> (accessed 30-11-2017).

88 See <http://www.energy.gov.ng/> (accessed 30-11-2017). Note that these documents are currently open for review and comments.

89 See <www.energy.gov.ng.> (accessed 10-7-2018).

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6 Nigeria's NDC commitments: imperatives towards harnessing the sustainable development benefits of the Paris Agreement

Response to climate change and emission reductions are undertaken on the basis of equity, sustainable development and efforts to eradicate poverty, which are critical development priorities for many developing countries. Although climate change will inevitably cause challenges to Nigeria's growth, it also provides an opportunity for the country to grow faster and cleaner and for Nigeria to develop her own capacity for industrialisation. Furthermore, the Paris Agreement provides a strong basis for response to climate change, and to achieve sustainable development through effective implementation of national NDCs. However, for Nigeria to seize the opportunities inherent in the Paris Agreement for mitigation and adaptation to climate change and to fulfil its commitments under the Paris Agreement, it has to address some of the legislative and regulatory challenges highlighted above.

It is imperative, therefore, that the NDC strategies and goals are mainstreamed into all national development strategies and the SDGs currently being implemented. To that end, this chapter proffers the following recommendations:

- A legislative audit of existing laws and regulations, which will help to eradicate the current overlaps and inconsistencies in the various legislations that will invariably affect NDC implementation. A comprehensive regulatory and institutional framework will ensure that climate change mitigation and adaptation strategies and policies are integrated with long-term national development plans and policies. Coherence is necessary between the regulatory and institutional frameworks on the ground in order to ensure that they work in synergy in order to achieve sustainable development – a panacea to the adverse effects of climate change.
- Establish links between NDCs and domestic strategy and policy agenda. An NDC that is strongly linked with the domestic strategy and policy agenda has a greater chance of promoting sustainable development and meeting national targets. This can be achieved by unpacking the NDC at sectoral levels such that high-level policies and goals translate into actionable roadmaps among the relevant sectors of the economy.
- Establish a strong and adequate institutional and regulatory framework that will enhance development, coordination and implementation of climate policies and programmes nationally. Strong and independent government agencies should have a key role such that they can coordinate and drive the NDC implementation process amongst the relevant sectors of the economy. To achieve this, Nigeria should eradicate institutional barriers and rivalry amongst national agencies and improve coordination at the national level. The institutional framework must ensure that key agencies or ministries work together.

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- Assess capacity building needs across government agencies and coordinate capacity building amongst relevant ministries and agencies. Relevant ministries and agencies should identify potential capacity needs. This will increase Nigeria's capacity to initiate and implement climate change policies and programmes and also to attract climate finance and investments. Furthermore, the relevant ministries and agencies should raise awareness among stakeholders about the benefits of the implementation of the NDCs.
- Identify mitigation potentials in key sectors of the economy. Nigeria should invest in research and data collation on issues such as in-country analysis of GHGs and the development of GHG inventories, an understanding of mitigation potentials in key sectors of the economy, and baseline study in order to determine GHG projections and implement mitigation strategies.
- Establish clear links to the 2015 SDGs. This creates an unprecedented opportunity to set a clear path for development for the next generation. Action on climate change is essential in meeting development aims, including poverty eradication, health, education, food and energy security. The various agreements on climate change, including the Paris Agreement, and the SDGs should be seen as complementary, with opportunities for mutual benefit in areas such as low carbon development, climate adaptation and resilience.

7 Conclusion

The NDCs are only one of many steps on a long road to the ultimate objective of a comprehensive climate change regime. They provide the mandate and framework for concerted action. The challenge now is to implement the NDCs at national levels towards a low carbon and climate resilient future at all levels. Good NDCs should be ambitious; result in a transformation in carbon-intensive sectors and industries; be transparent, so that stakeholders can track progress and ensure countries meet their stated goals; and be equitable in order that each country does its fair share to address climate change. For many developing countries, apart from domestic efforts discussed in the recommendations, the successful implementation of NDCs requires continued financial and other support from developed countries to enhance national capacity and a successful transition to a low carbon economy.

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