Africa and the Climate Change Diplomacy

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Abstract

The climate change debate and how to tame impact of climate change in the global context, remains a topical issue that elicits response from both continental bodies and states. While western countries take practical diplomatic steps in the climate change debate, African states appear both silent and unprepared for the challenges of climate change. Exploitation of natural resources has left marked impact on the environment in most African states, as degraded environment; denying them opportunity of harnessing wealth of the environment to achieve sustainable national development. Utilizing secondary data, the paper examines Africa's effort at striking favourable climate change deals in the global context and what Africans are doing to maintain a healthy environment to achieve sustainable development. The paper recommends that Africa should be proactive in the global climate change politics to avert being short-changed.

Keywords: climate change, green state, development, environmental sustainability and sustainable development

1. Introduction

Development hopes in any nation can only be realized within the ambit of the environment that provides the human, material and natural resources necessary to drive the development process. A threat to the environment which climate change represents is therefore an affront on development and ability to achieve sustainable development by extension in any nation or continent.

Climate change today, pose threat to the quest of both nations and the world to achieve sustainable development. This can be linked to both existing and anticipated adverse impact of climate change on both human and the environment. This has inevitable implication on both economic activities and food security. Loosely seen as the rising concentrations of anthropogenically-produced greenhouse gases in the Earth's atmosphere that changes the climatic condition of countries' (United Nations, 1992), climate change leaves notable impact in today's world, prompting global debates on how its impact can be tamed; (Schneider et al, 2000). The climate change debate which (Lisinge-Fotabong, Diakhite, Ababio and N'Dongo, 2016) see as 'the interface between national interest debate and international cooperation', has elicited wide response from countries and continental bodies as it is becoming increasingly clear; that no nation can escape the consequences of climate change. Africa is prone to the impact of climate change, (Collier, Conway and Venables, 2008 and Lisinge-Fotabong, Diakhite, Ababio and N'Dongo, 2016). Though other continents also face consequences of climate change, Africa with mostly developing countries and limited adaptive capacity is disproportionately vulnerable to effects of climate change.

Countries' ability to adapt to the impact of climate change is a vital talking point of the climate change diplomacy where there is concerted multilateral effort at taming climate change. Adaptation is development-oriented action that helps minimize impact of climate change. The African continent unfortunately, appears to be doing very little in making her impact felt in the global climate diplomacy; leaving the continent further exposed to the inevitable impact of climate change on both the environment and needed development and sustainable development by extension.

While the West dominated by mostly developed countries has responded effectively with the Kyoto Protocol of 1999, the same cannot be said of the African continent with arguably incoherent articulation of what the challenges are in the first place let alone, putting up a united response to tame challenges posed by climate change or ameliorate its impact on the continent in the face of desired sustainable development amidst manifest leadership and institutional failure that makes governance in the continent, difficult (Ikelegbe, 2013:1). This seeming failure to give governance needed focus to get development right in Africa, has been linked to near

absent attention paid to environmental issues that have taken centre stage in international relations. Environmental issues that adversely affect national growth and causes food shortages due to unmitigated resource depletion; have drawn adequate global attention (Adesina, 2011:93). Environmental issues with widespread impact and effect are often times, global issues. Such environmental issue is aptly reflected in global warming which manifest itself in varied but unpleasant shades, causes a considerable damage and posing a threat to human security and sustainable development that is '*environment-dependent*'.

Climate change entails change in the climatic condition. This has been observed as far back as early the nineteenth century. According to Ngene (2012:41), it is a global phenomenon induced by human activities rather than natural changes in the atmosphere Negative externality of resource exploration in developing countries and excessive production activities in developed countries result in harmful effects that endanger the environment and consequently undermine developmental strides. Resource exploration and associated externalities, adversely affect the environment. This impact most African states manifested in include gas flaring, oil spillage and excessive flooding that erodes the environment while extensive production activities in the West, leaves acid-rain and release of green-house gasses (GHG) that pollutes the atmosphere and endanger the environment. Harmful environmental practices do not only undermine development and developmental strides of states, it also denies states opportunity to achieve sustainable development.

This paper examines the African position in the global climate change debate; exploring her responses and the adaptive mechanisms put in place to mitigate impact of climate change on the continent as well as the resultant effect on both development and sustainable development. Based on secondary sources of data and utilizing the *'green state'* theoretical framework, the paper is divided into two major sections. The first clarifies associated and relevant concepts while the second discusses the global climate change debate and the African position in the matter.

2. Conceptual and Theoretical Discourse

2.1 Climate Change

The United Nations Framework Convention on Climate Change (UNFCCC, 2007), defined climate change as "any change in climate over time, whether due to natural variability or as a result of human activity". This means that climate change brings about change in climatic conditions due to either nature or human actions. Although focus is often on human actions that induce climate change, natural occurrences also add up to climate change. According to Khor, (2008), climate change is due to anthropological or human induced ecological problems that brings about global warming. Global warming occurs when there is an increase in the earth temperatures and increased emission of Green House Gas (GHG) into the atmosphere as the global demand for fossil fuel; increases. Excessive fossil fuel consumption contributes to global warming (Ajao et al, 2009). This has led to debate as to how nations can adapt to climate change in the quest for sustainable development.

Climate change is an issue with global relevance today because it affects all nations, and as such; requires global governance in an increasingly global world connected in several respects. Although Africa's contribution to climate change seen through increase Green House Gas (GHG) emission is relatively small, it is nevertheless, an issue to the African continent (Tsega, 2016).

2.2 Adapting to Climate Change

As a global issue, climate change has attracted sufficient global attention just as measures that can help ameliorate the impacts. While industrialized countries understand and pay attention to impact of climate change with appropriate response adopted to check same, less developed countries; especially those in Africa, appear to be far less as far as checking impact of climate change is concerned. This cast light on the seeming dichotomy in response between and among countries to the climate change debate. This is consequently reflected in marked division in countries' approach and response to the Kyoto protocol, that seeks reduction in the rate of carbon emission among industrialized nations, (Giddens, 2009 and Hansen et al., 2000). The 2009 United Nations Framework Convention on Climate Change (UNFCCC) failed to present a global response to the climate change challenge as less developed and less industrialized countries more exposed to the negative impact of climate change (The impact of climate change on Africa is likely to be severe because of adverse direct effects, high agricultural dependence, and limited capacity to adapt".

Development in any country depends on how healthy the environment is. Impact of climate change on the environment often does not spare any country especially growing economies with substantial reliance on the environment. This makes shoring up adaptation capacity which is painfully disparate; inevitable. Disparate

adaptive capacity, threatens implementation of agreements to limit emissions to stabilize atmospheric concentrations of GHG emissions to mitigate climate change, (Wigley, 1998). Management of environment based resources such as water, natural resources and associated agricultural activities and the sources as well as ability to generate energy, invariably affects the state of the climate. The UN Framework Convention on Climate Change (UNFCCC), with cross-cutting themes had the sole aim of shoring up countries' adaptive capacity. Also called "Marrakesh Accords 2001", it made provision for adaptation funding. This was followed by the UNFCCC Subsidiary, established to create scientific and technological response to the impact of climate change as well as to enhance the adaptive capacity and mitigate vulnerability.

Appreciable progress was made in 2004 when Conference of the Parties (COP) 10 better known as the Buenos Aires Programme of Work on Adaptation and Response Measures, was initiated. COP 10 established two complementary adaptation pathways which includes 'a structured five-year programme expected to develop scientific, technical and socio-economic capability of countries to adapt and improvement of information and technologies to implement concrete adaptation measures. COP 12, known as "Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate Change" or NWP, chronicled activities to be undertaken under the five-year Subsidiary Body For Scientific and Technical Advice (SBSTA) programme of work. This saw parties making progress on the governing principles of the Adaptation Fund provided in the Kyoto Protocol, to fund adaptation activities by placing a two percent levy on emission on industrialized countries to achieve the Clean Development Mechanism (CDM). In all this, adaptive capability of countries, regions and continents differ just as the expected impact of climate change.

3. Theoretical Framework

To clearly understand the issue of sustainable development, and climate change by extension, we adopted both Green and Environmental theories.

3.1 Green Theory

Green theory seeks to see a balanced relationship between human beings and nature especially as human continues the exploitation of the natural environment for survival. It thus expects that man-environment relationship should be fundamentally restructured if the earth and its inhabitants are to enjoy a secured future (Adesina, 2011). This is especially true as the human interference in the natural world is currently threatening the survival of both human and other species, (Horsfall and Spiff, 2013). The theory gained traction after World War II when world economies were booming and new technologies began to require greater energy consumption, thus leading to increase in pollution. As technology progressed and man's appetite for a stress-free life expanded, the environmental problems became complex and difficult to alleviate, (Graham, 2012; Horsfall & Spiff, 2013).

Green theory opposes both liberalism and socialism, tendencies that accepts unmitigated industrialization to the detriment of ecological and social health of humanity. The theory thus proposes cooperation and interaction between man and the environment to mitigate global environmental crisis. This the theory believes, can be achieved if man take actions that prime environmental health over unhealthy environmental practices such as the surge in industrial revolution of the nineteenth century, the increasing concentration of people in cities as well as the explosion in the use of technology. All these continue to erode environmental health needed for man and the environment to live in harmony. Green theory therefore, demands a radical restructuring of various facets of human organization in everyday practices in the contemporary world order built on the unconscionable exploitation of the natural world to practices that promote environmental health and the oppression or marginalization of specific social goals.

3.2 Environmental Theory

Like the Green theory, the environmental theory places premium on the environment and the role it plays in the developmental process. The theory states that the environment of a state has a key role to play in its development and that the environment determines the political behaviour of a state. It brings to focus, man's relationship with the environment; believing that if such relationship is healthy, the state would benefit from the environment. The state would consequently be able to benefit from the environmental potentials to shore up her developmental drives. While it is the desire of most African states to be among developed economies of the world, such lofty aspirations hang in the balance due to continued failure of most African states failed to achieve the UN inspired millennium environmental development goal.

While environmental theory is concerned with role the environment plays in the development of a state, Green theory focuses on the problem-solving approach to the challenges of the environment and that of climate change by

extension. The environment needs to be protected from threats to enable the state to harness its full potentials for growth and development. The Green theory on its part seeks solutions to the friction between man and the environment to achieve a mutually beneficial balance that would make it possible for man and the state to enjoy a secured future. Both the environmental theory and Green theory are concerned about environmental sustainability which fused neatly into veiled response of the United Nations Development Programme (UNDP) to the threats posed by climate change and immediate need to achieve Sustainable Development. These theories are very apt for this discourse because they focus on the relationship between man and nature and how that can be mutually beneficial to make the environment conducive for development, peace and security.

4. Africa and Climate Change

As a continent, Africa is exposed to the impact of climate change yet very little has been done to brace up for the challenges. The first measure taken at the continental level was in 2007 when the African Union (AU) adopted a Declaration on Climate Change and Development. This was the first time the continental took a common position on climate change; a position many believe, represents the collective position of the African negotiators at Copenhagen COP in 2009 and African Common Position on climate change by extension, (AU/AMCEN, 2009). What came to be known as African collective position on climate change was built on the core concept of 'environmental justice' and gave adaptation to climate change a priority. It sought to establish formidable strategies and networks of cooperation with other stakeholders to curtail greenhouse emissions. This was followed by multicultural, bilateral and regional cooperation with actors on climate change issues, (Ramsamy, Knoll, Knaepen, & Wyk, 2014).

The African Group of Negotiators (AGN) is made up of the African Ministerial Conference on the Environment (AMCEN) which represents the Africa and presents African common position at the UN Framework Convention on Climate Change (UNFCCC). AMCEN is made up of African experts with a technical segment that provides technical input and political oversight to the Africa Group of Negotiators. As the highest continental body, The Conference of African Heads of State and Government on Climate Change (CAHOSCC) approve and endorse the common African position on climate change. Both CAHOSCC and AGN work as partners to such bodies as the United Nations, United Nations Economic Commission for Africa (UNECA) and African Climate Policy Centre (ACPC) by providing technical support during the preparation for the UNFCCC negotiations. This is in addition to high level consultation at both regional and sub-regional levels to arrive at a formidable continental position in response to the threat climate change poses to the continent. Although Ramsamy et al. (2014) believes that those regional and sub-regional initiatives were largely unsuccessful; they however represented giant strides on continental level to push back on the threat of climate change. It is however, debatable how the so-called African common position on climate change gave the continent a voice in the global climate change mediation diplomacy/politics. This brings us to the question of what the document adopted in Cote D'Ivoire in 1991 contained.

The African common position on the African Environment and Development meetings provided Africa an opportunity to as a continent; officially address the issue of climate change. It witnessed the adoption of principles that can safely be seen as representing African environmental diplomacy. The document placed premium on economic development, improved quality of life and reduction in poverty as well as maintenance of healthy environmental practice on a continental basis. The document held that only sustainable environment can secure both food and energy security for the continent. To this end, food and energy security were seen as vital concerns in Africa while the governments reiterated their sovereign rights to explore natural resources within their domain to achieve sustainable development.

The Common African position though initiated in 1991, never got traction until the 2008 Algiers declaration and 2009 Nairobi Declaration respectively where African leaders made notable declarations on climate change (Hoste, 2010). It was after the 2009 Nairobi Declaration that the African Group based on the Common Position of the Committee of the African Heads of State on Climate Change (CAHOSCC) demanded:

- (a) Financial compensation for natural, economic and social resources lost while requesting that developed countries take responsibility on climate change by contributing 1.5% of their global GDP to climate mediation effort in less developed countries.
- (b) That the UNFCCC principle of common but differentiated responsibilities should be respected.
- (c) That developed countries should reduce their greenhouse gas emissions by at least 40% below 1990 levels by 2020 and 80% to 95% or below by 2050.

Implication of this common position is that the African continent wanted reduced GHG emissions by developed

countries while calling for financial and technical support for Africa to enhance their adaptive capacity to mitigate negative impact of climate change.

5. Where African Group Stands in the Mitigation Policy Debate

The climate change debate has been woven around measures to achieve feasible adaptation capabilities by countries since many countries are prone to the negative impact of climate change. Africa at the ministerial level conference; focused on building the continent's adaptive capabilities rather than mitigating impact of climate change. This is ostensibly seen in realization of the fact that Africa contributes sparingly to global GHG emissions. According to (Winkler & Zipplies, 2009), the continent contributes approximately 1.75% of global energy, CO2 emissions from 1950-2000; and 3.85% of annual GHG emissions in 2000. That explains why the focus is on getting requisite fund to shore up adaptive capacity among practitioners, particularly in the context of the UNFCCC climate negotiations rather than focusing on mitigation. Africa is still in need of economic development to eradicate poverty and achieve cleaner and environment friendly energy and needs mitigation to achieve economic competitiveness in a global economy.

In all, the Africa Group demanded action to mitigate impact of climate change by charging developing countries to key into the process. This includes request for a science-based aggregate target for developed countries to individually or collectively reduce emissions as well as individual commitment to the Kyoto protocol among others. What the African group demanded, was a detailed and clear work program for the Kyoto Protocol so as to adopt final decision for the second commitment period in Durban in 2011. This complemented African countries' willingness to undertake mitigation measures that would reduce emissions from Deforestation and Forest Degradation as well conserve carbon stock and achieve sustainable forest management practices, (AMCEN, 2011).

6. African Group and Global Climate Change Negotiations

This sub-section looks at African countries' participation in the international climate negotiations and diplomacy. Though the continent has a negotiation team, global climate change diplomacy is anchored on multilateral negotiations that births coalitions as a structure of engagement, (Hoste, 2010). The coalition is built around mutual collaboration with China through the Group of 77 (G77), other LDCs and a broader South-South cooperation seen at UNFCCC climate change negotiations. The AGN represent the continent at the negotiations, (Roger, 2013). African countries head the AGN on a rotational basis for two year tenure and are expected to work with the entire AGN structure that includes all African Member States' senior officials, experts that constitutes the negotiating team during UNFCCC negotiations. African Ministerial Conference on the Environment (AMCEN) provides political oversight to the group. It presents a common front on African position during such debate as was the case during the Earth Summit in 1992 and coalition meetings such as the G77, Alliance of Small Island States (AOSIS), and OPEC coalitions.

What we have been able to establish from the literatures, is the fact that the African continent boasts of an effective participation in global climate change diplomacy but very little is achieved as far as country specific 'climate change induced' environmental challenges are concerned. Secondly, the continent canvasses achieving enhanced adaptive capacity at the expense of mitigation; ostensibly feigning immunity from the ravaging impact of climate change on the continent that's is deeply involved in reckless harvesting of natural resources in her laborious quest for development. African participation in global climate change diplomacy must go beyond active participation (Dongo, 2011) largely built around veiled denial of the impact of climate change on the continent can leverage on her active and influential role in the climate change negotiations to achieve tangible results capable of addressing individual; albeit, peculiar environmental challenges that are threatening sustainable development that the continent needs.

7. Africa and the Environment: The Pursuit of the 'Green State Status'

Green state concept within environmental sustainability discourse is an extension of the traditional development narrative. It emphasizes attainment of suitable environmental practices capable of sustaining development. It place '*sustainability' and 'environmental health'* at the centre of the development discourse. This by extension entails, striking a balance between environmental health and natural resource exploitation. Unfortunately, African countries while exploiting their natural resources to attain needed development pay less attention to environmental health let alone sustainability. This adds to the African climate change challenge because unmitigated resource exploitation, degrades the environment. Harmful environmental substances are often released into the environment and this threatens human existence, growth and the prospects for development. To mitigate real or envisaged impact of climate change on the environment due to poor environmental health, attaining the green state status; recommend self.

The green state concept which Duit et al. (2015) referred to as environmental state, involves conscious efforts aimed at reducing greenhouse gas emissions by embracing cleaner energy sources. An environmental state Duit et al. (2015) noted, is one with a significant set of institutions and practices capable of managing the environment and societal-environmental interactions. This often involves developing institutions, structures and processes that can address environmental challenges. That explains why the concept is viewed as a model for managing society. It does to not only provide needed development, but places a premium on the sustainability of the ecosystem. Basically, the green state concept talks about states' efforts at attaining sustainable production and consumption by adopting 'renewable energy', green building, clean transportation and sustainable water land degradation management practices. According to (UNEP, 2011 cited in Adamu, 2012), it results in improved human well-being and social equity while significantly reducing environmental risk and threat to ecological security.

8. Africa and the Climate Change Challenge: Way Forward

The climate challenge is real and it is a global one. While the West appears comparably prepared for the onerous battle between man and nature wrapped up in the larger picture which climate change represents, African countries appear not ready. This can be gleaned from their individual response to the issue of the environment and how a safe balance can be achieved between resource exploitation and environmental health. While natural resource exploitation is expected to generate needed resources for developmental purposes, it must however be done with attention paid to issue of environmental health. Resource exploitation in Africa has been at the expense of the environment and as such, the ecosystem has been significantly altered with adverse consequences. There is therefore the need for Africa to do the needful to first; secure her environment, secondly acknowledge existence of climate change and thirdly, embrace adaptive and mitigation measures to secure self. In the interim, the following measures will help Africa achieve environmental health and be in a better position to achieve sustainable development.

(a) Africa should be more assertive in the climate change debate

Africa must go beyond the seemingly apologetic position they adopt in climate change debate. It is near insulting for the continent to be asking for financial support from industrialized West to shore up her adaptive capability when the continent is expected to be discussing feasible mitigation measures. Africa putting forth requests for adaptive capacity, gives veiled credence to the fact that the continent denies existence of climate change or thinks; she is insulated from the negative impact of same. The continent needs to be more assertive in canvassing positions that can help her square up with the impacts of climate change.

(b) Implementation of Environmental Laws

To achieve equilibrium between natural resource exploitation and environmental sustainability, African government must besides making needed environmental laws, implement them. This is to enable them to tackle environment related issues in the face of natural resource exploitation. This must be followed with reviews of laws too weak to protect the environment. For example, there must be clear rule and regulations on projects with unpleasant environmental consequences such as massive construction and developmental projects in urban centers capable of pushing up urban temperatures compared to what occurs in rural areas. Striking such balance in the use of the environment would help prevent the possibility of '*urban heat island effect*' with adverse environment impact that can affect development and sustainable development by extension. Implementing appropriate environmental laws, helps secure the environment.

(c) Conservation of Biodiversity

African governments also need to come up with feasible blueprints that will help conserve their countries biodiversity. Though many see this as a reactionary measure instead of envisaged proactive measures, it would however help mitigate adverse environmental practices and secure the environment. Conserving biodiversity would help ameliorate adverse environmental impacts. Oil spill and gas flare in the oil bearing region in Nigeria for example, does incalculable damage to the environment. Taking adequate measures to remedy this would help salvage the already battered environment and make it suitable to support development for today and tomorrow. The bio-systems afford the environment opportunity to relate with associated environmental components such as genes, species, and the larger ecosystems to help restore and protect the organisms, species, and various populations which might have been depleted due to human practices such as urbanization, deforestation and bush burning. Successful biodiversity conservation would help enhance habitat connectivity.

9. Conclusion

The issue of climate change and the global political dimension that the effort the world is making to confront it is throwing up, is real and blazingly current. In line with realist *'real-politik principle'*, nations seek selfish interest in the global climate change diplomacy. The paper examined African position in the global climate change diplomacy and observed that the continent is still engrossed in resource exploitation for national development, is not doing enough to be heard in the global debate on how impact of climate change can be curbed. While development is desirable by every state, the need for development and extent to which it is achieved varies among states. While some countries are arguably developed, the extent of sustainability of such development is debatable. That is why focus in the last decade has been on how development can be achieved to meet the needs of today without compromising those of tomorrow or ability of posterity to meet their developmental needs.

The concept of green state economy which is the improved intellectual discourse of what sustainable development espouse, seeks to achieve national development that recognizes vital role of the environment in the development process and take measures to protect the environment for unhindered development. That way, the pace of climate change is either reduced or the impact of same tamed. The paper noted that Africa needs to sustain her environment even as she exploits natural resources for needed development.

On the global climate change diplomacy front, Africa needs to do more than securing her environment. Formidable environmental laws should not only be made, they should be implemented as well. This should be reinforced with rigorous push for favourable position in the global climate change diplomacy. This means, the continent needs to be more assertive in canvassing for both adaptive and mitigation measures to curb impact of climate change. The continent equally needs to advocate for commitment of the industrialized West to the various climate change protocols that would see them reduce GHG emissions for mutual security of the global ecosystem.

References

- Adamu, S. (2012). Rio-20, Green Economy and Efforts to Tackle Nigeria's Environmental Challenges. The Nigerian Observer, July 4, p.13
- Adati Ayuba Kadafa. (2012). Oil Exploration and Spillage in the Niger Delta of Nigeria. *Civil and Environmental Research*, 2(3)
- Adesina, O. S. (2011). *Theories of International Relations: An Introduction*. Alpha Crowns Publishers, United Kingdom.
- Ajao, K. R., Ajimotokun, H. A., Popoola, O. T., & Adeoti, O. (2001). Electric Energy Supply in Nigeria. Decentralized Energy Approach, Cogeneration & Distributed Generation Journal, 24(4), 34-50. https://doi.org/10.1080/15453660909595149
- Ajugwo, A. O. (2013). Negative Effects of Gas Flaring: The Nigerian Experience. *Journal of Environment Pollution and Human Health*, 1(1), 6-8.
- Amnesty International. (2013). Bad Information: Oil Spill Investigations in the Niger Delta. London, Amnesty International Publications.
- Asume, O., & Roderick, P. (2005). Gas Flaring in Nigeria: A Human Right, Environmental and Economic Monstrosity, Environmental Right Action/Friends of the Earth, Amsterdam, Netherlands.
- Duit, A., Feindt, P. H., & Meadowcroft, J. (2016). Greening Leviathan: the rise of the environmental state? *Environmental Politics*, 25(1), 1–23. https://doi.org/10.1080/09644016.2015.1085218
- Eckersley, R. (2004). *The green state. Rethinking democracy and sovereignty.* MIT Press, Cambridge. https://doi.org/10.7551/mitpress/3364.003.0007
- Eghweree, C. O. (2016). Oil, Politics and Regional Development in Nigeria: Comparison of South-South and South-West Regions, PhD Thesis, University of Exeter, United Kingdom.
- Eghweree, O. C., & Afeaye, A. I. (2017). The green state concept and environmental sustainability in Nigeria: path to sustainable development. *Sokoto Journal of the Social Sciences*, 7(2), 232-247.
- Emas, R. (2015). The Concept of Sustainable Development: Definition and Defining Principles. Retrieved from https://sustainabledevelopment.un.org
- Escobar, A. (2012). *Encountering Development, The making and unmaking of the third world* (2012 ed.). Princeton, Princeton University Press.

- Estherine, L.-F., Diakhite, M., Ababio, K., & N'Dongo, C. T. (2016). Climate Diplomacy in Africa, NEPAD Agency Policy Brief, November.
- Etekpe, A. (2007). The Politics and Conflict Over Oil and Gas In Niger Delta Region: The Bayelsa State Experience, 1990-2006, Port Harcourt, Tower-Gate Resources.
- Giddens, A. (2009). The Politics of Climate Change. USA, Polity Press.
- Goodland, R. (1995). The Concept of Environmental Sustainability. *Annual Review of Ecology and Systematics*, 26, 1-24. https://doi.org/10.1146/annurev.es.26.110195.000245
- Hansen, J. E., Lacis, A. A., & Ruedy, R. A. (1990). Comparison of solar and other influences on long-term climate. In K. H. Schatten, & A. Arking (Eds.), *Hsg.: Climate impact of solar variability* (pp. 142). Greenbelt, NASA.
- Hansen, J. E., Sato, M., Lacis, A., Ruedy, R., & Oinas, V. (2000). Global warming in the twenty-first century: An alternative scenario. *Proceedings of National Academy of Science USA* 97: 9875-9880. https://doi.org/10.1073/pnas.170278997
- Ikelegbe, A. O. (2013). State, Civil Society and Sustainable Development in Nigeria. Centre for Population and Environmental Development Monograph Series No. 7.
- Khor, M. (2008). Some Issues for the Post Bali Climate process, Third World Network, Penang.
- Meadowcroft, J. (2006). Greening the State. *Politics and Ethics Review*, 2(2), 109-118. https://doi.org/10.3366/per.2006.2.2.109
- Meadowcroft, J. (2009). What about the politics? Sustainable development, transition management, and long term energy transitions. *Policy sciences*, 42(4), 323–340. https://doi.org/10.1007/s11077-009-9097-z
- Morelli, J. (2011). Environmental Sustainability: A Definition for Professionals. *Journal of Environmental Sustainability*, 1(1), 19-27. https://doi.org/10.14448/jes.01.0002
- Odjugo, P. A.O (2013). The Impact of Gas flaring on rainwater quality in Erhorike, Delta State. In Ikelegbe, A. (Ed.), *Oil, Environment and Resource Conflicts in Nigeria*. Zurich, LIT VERLAG GmbH & Co. KG Wien.
- Ogbigbe, E. (2006). Blood in the Niger Delta, Daily Sun Newspaper, March 10, PP1-6.
- Paul, C., & Tony, C. G. V. (2008). Climate change and Africa. Oxford Review of Economic Policy, 24(2), 337– 353. https://doi.org/10.1093/oxrep/grn019
- Rist, G. (2010). *The History of Development, From Western Origin to Global faith* (3rd ed.). New York, Palgrave Macmillan.
- Schneider, S. H., Easterling, W. E., & Mearns, L. O. (2000). Adaptation: sensitivity to natural variability, agent assumptions and dynamic climate changes. *Climatic Change*, 45(1), 203–221. https://doi.org/10.1023/A:1005657421149
- Sutton, P. (2004). A Perspective on Environmental Sustainability. A Paper for the Victorian Commissioner for Environmental Sustainability. Retrieved from www.green_innovations.ans.au
- Todaro, M. P., & Smith, S. C. (2009). Economic Development. New York, Addison-Wesley.
- Tsega, A. H. (2016). Africa in Global Climate Change Governance: Analyzing its Position and Challenges. International Journal of African Development, 4(1), 5-18.
- United Nations General Assembly. (1987). *Our Common Future*. Report of the World Commission on Environment and Development, Oslo, Norway: United Nations General Assembly, Development and International Cooperation: Environment.
- United Nations. (1992). United Nations Framework Convention on Climate Change, Rio de Janeiro, Brazil, 33 pp. Retrieved June 6, 2018, from http://www.unfccc.int/text/resource/docs/convkp/conveng.pdf
- Uyi-Ojo, G. (2010). Climate Change and Opportunities for National Development. *The Nigerian Journal of Politics and Public Policy*, 6(1&2), 61-78.
- WCED. (1987). *Our Common Future*. World Commission on Environment and Development. Oxford University Press, Oxford.
- Wolicka, D., Suszek, A., Borkowski, A., & Bielecka, A. (2009). Application of aerobic microorganisms in bioremediation in situ of soil contaminated by petroleum products. *Bio-resource, Technology*, 100, 3221– 3227. https://doi.org/10.1016/j.biortech.2009.02.020

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