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Nigeria's Intended Nationally Determined Contributions (INDCs) as Strategic Vision for Climate Resilient, Low Carbon and Green Growth Development

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Abstract- Nigeria's Intended Nationally Determined Contributions (INDCs) submission on emission reduction to the2015 Paris Climate Change Agreement was examined and analyzed by this study and the conclusion of these efforts is that Nigeria's (INDCs) are strategic blue prints for transiting the country from high intensive carbon dependent development to low-carbon, green and equitable growth development. The high points of these pledge to inclusive green growth and development include reduction from business as usual carbon dependent economic growth, ending gas flaring, investing in renewable technology, energy efficiency, rapid moving rail system; low emitting mass transport driven by buses, smart agriculture plus ensuring that forests are conserved through efficient afforestation and reforestation programs. This paper recognizes Nigeria's (INDCs) as very visionary and strategic for archiving low-carbon and green growth development for Nigeria but this can only happen if the country follows up with a strong political will for full implementation, pay the necessary costs, be committed to policy, investment, economic, environmental and financial implications of the Intended Nationally Determined Contribution (INDC) plan. As INDC is only a plan, it is dead on arrival without diligent implementation.

Keywords- *Investment, Environment, Economic, Financial*

I. INTRODUCTION

Green economy is very desirable for every nation because of many tangible and non-tangible benefits. Green economy ensures that all forms of pollution: air, water, thermal and soil are eliminated or at least minimized. Pollution threatens the environment by loading the environment with disease causing pathogens; chemicals, effluents, solid wastes and heat agents.

Direct impacts of pollution include death of living things, plants and animals and humans, degradation of the various ecosystems and ecological processes that make the earth livable and sustainable. For example, the loading of the atmosphere with greenhouse gases such as carbon dioxide methane, sulphur dioxide, nitrous oxide and chlorofluoro carbons result to global warming and climate change. Also increasing loading of the atmosphere with Ozone depleting substances such as chlorofluoro carbons and halons contribute to Ozone layer depletion which exposes lives on earth to harmful ultraviolet radiations of the sun, causing skin cancer, cataracts, weakening immune system, damaging marine life and interfering with photosynthesis (Haddock,2000).

Apart from minimizing pollution, green economy ensures energy security through the diversification of energy sources and energy efficiency. Energy efficiency ensures that energy is not wasted through both supply and demand ends of energy systems and this reduces overall cost of energy for the people concerned.

In Nigeria, energy is a serious problem as only less than 50 percent of the citizens are connected to the national grid (Ceivigni, Rogers and Henrion, 2013). And even at that, electricity is very epileptic in Nigeria and Nigerians suffer greatly because of low energy coverage of the country. Most businesses and households in the country depend on generators and running generators are not only expensive but present a lot of health challenges and sometimes resulting to untimely deaths because of inhalation of noxious fumes from the generators.

This paper examined the Intended Nationally Determined Contributions (INDCs) which Nigeria submitted to the 2015 Paris Climate Change Agreement and locates in the submission some strategic actions points that if well implemented as proposed will aid Nigeria towards achieving climate resilient, low carbon, rapid green growth development. But this development path comes with some commitments, costs and political will. All these are fully discussed in this paper.

II. WHAT IS GREEN ECONOMY?

The United Nations Environment Programme (UNEP) defines a green economy as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities (UNEP, 2011)

Green economy is very significant in many respects. It represents efforts towards reducing and ultimately eliminating the use of fossil fuels such as coal, petroleum and natural gas in powering the global economy by substituting fossil fuel based energy with renewable such as solar, wind, geothermal and hydropower.

Green economy is envisaged to reduce air pollution including global warming and climate change and by so doing, contribute towards minimizing identified catastrophic impacts of climate change as projected to happen in business as usual scenario.

Apart from reducing pollution, a green economy has many other benefits such as the creation of millions of green jobs and green investment opportunities. Green economy is one of the pathways of attaining both sustainable development and sustainable economy. Sustainable development according to the World Commission on Environment and Development (WCED, 1987) is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. And sustainable economy is one which is ecologically sound, socially equitable and politically and economically viable (BMZ, 2011).

Green economy is the way to go to protect the planet earth and to ensure that both economic growth and environmental safety can mutually be assured and sustained from generation to generation.

III. Action Points of Transiting to Low Carbon and Green Economy by Nigeria

Nigeria submitted her Intended Nationally Determined Contributions (INDCs) to the 2015 Paris Climate Change Agreement, following the approval by His Excellency, the President of Nigeria, President Muhammedu Buhari on 26th November, 2015 (Nigeria's Intended Nationally Determined Contribution, 2015).

The actions points of Nigeria's Intended Nationally Determined Contributions include:

- Reduction of Business as usual (BAU) development path.
- Work towards ending gas glaring by 2030
- Work towards off-grid solar photovoltaic (PV) of 13,000 Mega Watts
- Efficient gas generators
- 2 percent per year energy efficiency which will aggregate to 30pecent by 2030
- Transport shift from cars to buses
- Improve electricity grid
- Invest in climate smart agriculture and reforestation
- National annual cost of $142billion and national benefits of $304billion.

INDCs were Nigeria's blue print towards transiting from business as usual (BAU) which is a development path based on massive deployment of fossil fuels to low carbon economy which strongly relies on renewable energy, energy efficiency, climate resilient and sustainable development growth.

But INDCs are only proposals and need good policies, resources, political will and stringent work plans to be realized. As expected, the INDCs come with a lot of investment, cost, economic, environmental and financial implications.

IV. Investment Implications

To transit to low carbon and green economy, the country must invest in new investments and expand existing ones especially in renewable technologies such as solar, wind, small hydropower, bio-energy and geothermal. For example, to achieve 13000 megawatts in solar photovoltaic (PV) cells as proposed by the INDC is equivalent of generating about three times, the current total electricity capacity of Nigeria which stands to about 4000 megawatts.

The INDC proposed that gas flaring will gradually be phased out and will end by 2030. Gas flaring is a major environmental issue in Nigeria as the country flares about 75 percent of associated gas because of lack of market and infrastructure (Niger Delta Development Report, 2006). The country flares about 2.5 billion cubic feet of associated gas daily (Oyeshola, 2008). The country needs infrastructure as well as the political will to end gas flaring in Nigeria. Natural gas is the least polluting fossil fuel and as such is of high demand in international market. But for natural gas to reach the market, certain facilities must be in place. For local markets, network of pipelines must be provided to pipe the gas from the oil fields in the Niger Delta to cities across Nigeria where the commodity is required in industries, power generation and for domestic needs especially for cooking in homes.

For the international market, there must be liquefied natural gas (LNG) facility to pressurize and turn the gas into liquid at a very low temperature before the liquefied gas is then transported in refrigerated tanker ships and after arriving at its destination, it is heated and converted back to its original gaseous state at a regasification plant before it is distributed to pipelines (Miller and Spoolman, 2010).

Nigeria has only one LNG facility in Bonny and to stop gas flaring, we need more of such facility to enable the harnessing and processing of flared gas to both the local and international markets.

On greening the transport sector, there is need to invest massively in fast rail transportation system, mass urban transit using gas and biofuel powered buses and tracks. There is also the need for Nigeria to invest in the importation of electric powered cars as the technology is now commercially available in the market place. According to Stern Review (2006) for radical emission cuts to happen in the medium to long term, there must be large scale uptake of clean power, heat and transport technologies.

Lastly, natural gas should replace fire wood and charcoal as the fuel of choice in household cooking in the country.

V. Environmental Implications

Green economy has immense benefits to the environment, business and people. Green economy reduces pollution of the various components of the environment: the atmosphere, hydrosphere, biosphere, cryosphere and the lithosphere or air, water, life support, ice and solid earth respectively.

Indoor and outdoor air pollution kills millions of people yearly globally and if the economy is transformed to low carbon and green one, these avoidable deaths would be greatly reduced. For example, smog which is a combination of smoke and fog build up in most industrial cities. Zipko (1990) recorded that the buildup of smog have caused air pollution disasters in many cities including London with about 4000 deaths in 1952 and 900 deaths in 1956 and in New York City, 400 deaths in 1965. Apart from deaths, photochemical smog damage crops corrode pains, buildings and status and rot nylon and leather. It causes headaches, bronchitis and air lung diseases (Zipko, 1990).

If gas flaring is reduced and ultimately discontinued by 2030 in Nigeria, the environment, people of Niger Delta and indeed the global community will be greatly relieved of dangerous pollution. This is so because Nigeria flares huge amount of associated gas as cited earlier in the Niger Delta region and flared gas is the main source of high greenhouse emissions credited to Nigeria. And according to Igwe (2010), the hazards of continues gas flaring to communities in the Niger Delta include noise, rise in temperature acid rain, crop yield retardation, corroded roofs and many types of respiratory diseases. Apart from air pollution reduction, low carbon-economy will also impact positively on water pollution, oil spills, soil contamination and deforestation especially for fire wood and charcoal making.

VI. Economic Implications

Green economy has a lot of tangible economic benefits. Green growth generates a lot of new economic activities, new sectors, new skills, new building designs, research and development thinking; new technologies and new jobs that never existed in the recent past. Green economy will also lead to reformation of existing economic activities with a view to achieving greater efficiency and greater effectiveness.

It is now possible to drastically reduce energy consumption in buildings through efficient design to as high as 70-80percent by cutting energy consumed in buildings especially in heating, cooling, ventilation, lighting, water heating, cooking, entertainment and computing (Waide and Reardon, 2010).

Renewable energy sector is one new sector that will boom in Nigeria if the green economy becomes a reality. This sector includes solar, wind, geothermal and bioenergy. Solar energy has two main technologies- solar thermal and photovoltaic (PV) cells. Wind has two components that include off-shore and on-shore wind farms. Bioenergy has many components including biodiesel and ethanol production and waste to electricity production.

There is also the research development aspect in green economy. Research, development, innovation and demonstration are prerequisites for continuous improvement and efficiency of existing technologies and for the discovery and development of new technologies that will come with better functions and at lower costs.

In a green economy, there will be also demand for human capacity building in the various aspects of emerging green technologies, so training and retraining aimed at building necessary competences to drive the emerging technologies must occur on continuous basis to keep pace with fast flowing and quick changing development processes. It is probably in employment generation that the transition to green economy is most recommended for developing countries such as Nigeria.

Low Carbon Development Summary Sheets (2011) observes that green economy generates many green jobs that include direct employment such as in manufacturing, installation and operation of renewable energy technologies and indirect jobs such as steel making for wind turbine gearboxes and towers; composite chemicals for blades and building materials for the foundations of wind turbines.

The truth is that millions of green jobs will be created directly and more indirectly through the distribution, marketing and maintenance and servicing of technologies of the different sectors that constitute the green economy mix.

VII. Financial Implications

Finance is always a problem and sometimes constitutes serious handicap whenever good ideas, projects and programs are to be implemented especially in developing countries.

But the good news is that there are many innovative and ingenious pathways in which financial resources can be mobilized for funding climate resilient, low carbon and green projects and programs. Nigeria can tap from these available windows to finance her transition to low carbon and green growth economy. These funding windows are through private funds, government bonds, bilateral and multilateral funds as well as climate change green funds. Private funds include private equities, venture capitals and pension and wealth funds.

There are also many funding windows from the Green Climate Fund (GCF). According to Ad Hoc Working Group on the Durban Platform (2013) GCF is global efforts towards achieving the goals of combating, climate change and achieve low –emission and climate-resilient development. There are also Special Climate Change Fund; the Least Developed Countries Fund; the Climate Change Adaptation Fund under Kyoto Protocol and the Global Environmental Facility (GEF); the Sustainable Energy Fund for Africa (SEFA); Clean Energy Investment Fund (CEIF); the Clean Development Mechanism and Climate Investment Funds.

Other sources of funding are the World Bank; Multilateral Development Banks such as African Development Bank (AfDB) and Asian Development Bank (ADB).

More details about the listed funding windows are available at Catalyzing Climate Finance (2011).

VIII. Discussion and Recommendations

Achieving low-carbon inclusive and green growth as contained in Nigeria's (INDCs) require a lot of efforts, good policies, mobilization of both human and material resources and above all, strong political will.

To realize the goal of the INDCs and the main focus of this paper requires the following:

First, to create necessary awareness on Nigeria's (INDCs) with a view to bringing to the front burner Nigeria's sustainable development strategy.

Second, all Nigerians must be fully informed about the benefits such as economic, environmental and growth benefits accruable to the people of Nigeria.

Third, all the aspects of the INDCs should be mainstreamed into the plans, programmes, projects and activities at the federal, state and local government levels.

Fourth, the role to be played by all persons, including the organized private sector and non-governmental organizations (NGOs) must be clearly stated.

Fifth, timelines, monitoring and evaluation schedule should be strictly adhered to.

IX. Conclusion

All hands should be on deck to ensure the full implementation of Nigeria's Intended Nationally Determined Contributions (INDCs) as proposed and as deposed to the 2015 Paris Climate Change Agreement. With full implementation, hopefully, Nigeria will by 2030 become a low carbon, green growth and inclusive-developed nation.

References

[1] Ad Hoc Working Group on the Durban Platform for Enhanced Action (2013). Publication of the United Nations Framework Convention on Climate Change (UNFCCC) Warsaw, Poland.

[2] BMZ (2011) Green Economy Federal Ministry for Economic Cooperation and Development (BMZ) 53113 Bonn, Germany.

[3] Catalyzing Climate Finance (2011) United Nations Development Programme (UNDP) Framework to Catalyzing Finance Toward Green Lower Emission and Climate Resilient Development. Published by UNDP and Bureau for Development Policy Environment and Energy, New York, USA.

[4] Cervigni, R, Rogers, J.A and Henrion M. (eds) (2013) Low-Carbon Development: Opportunities for Nigeria Directions in Development, the Work Bank, Washington D.C. Available at http://dx.doi.org/10.1596/978-0-8213-9925-5.

[5] Haddock, P. (2000) Environmental Time Bomb: Our Threatened Planet Enslow Publishers Inc. Aldershot, USA.

[6] Igwe, I. (2010) Gas Flaring and Climate Change; Nigeria's Efforts Towards Developing Regulatory Regime. In Eze C. O and Oche, O. (eds) Climate Change and Human Security in Nigeria, Nigerian Institute of International Affairs, Lagos, Nigeria pp 249 – 264.

[7] Low Carbon Development Summary Sheet (2011) Green Jobs in a low Carbon Economy Published by AEA Technology PLC, UK Available at www.aeat.com.

[8] Miller, G. T. and Spoolman, S. E. (2010) Environmental Science. Brooks/Cole Cengage Learning Belmont, USA.

[9] Niger Delta Human Development Report (2006) United Nations Development Programme (UNDP). UN House, Plot 617/618 Diplomatic Zone, Central Area, Garki, Abuja, Nigeria.

[10] Nigeria's Intended Nationally Determined Contributions (INDCs) (2015) Prepared by the Federal Ministry of Environment, Abuja, Nigeria. Available at https//www.climatelinks.org.

[11] Oyeshola, D.O. P (2008) Sustainable Development: Issues and Challenges for Nigeria Daily Graphics Nigeria Ltd, Ibadan, Nigeria.

[12] Stern, N. (2006) Stern Review on the Economics of Climate Change Available at https://en-wikipedia.org/wiki/Stern-Review

[13] UNEP (2011) Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication – A Synthesis for Policy Makers. Available at www.unep/greeneconomy

[14] Waide, P. and Reardon V. (2010) Energy Efficiency in Buildings: Realpolitik for Mitigation in Bristow R. (ed) Climate Action: Assisting Business Towards Carbon Neutrality. Published by Green Media in Partnership with the United Nations Environment Programme (UNEP) pp 84-85 Available at www.climateactionprogramme.org

[15] World Commission on Environment and Development (1987) Our Common Future. Oxford University Press, Oxford, UK.

[16] Zipko, S. J. (1990) Toxic Threat: How Hazardous Substances Poison our Lives Julian Messner, New York, USA.