POLICY BRIEF

SPAU/ 001/2018

Empowered lives.
Resilient nations.

Green Bonds as an Innovative Financing Mechanism for Climate Change Adaptation and Mitigation in Nigeria[1]

BACKGROUND AND CONTEXT

Initially viewed in some quarters as untrue and far-fetched; or at least a problem for future generations only, recent experiences regarding the consequences of climate change on peoples' lives and the environment, as well as the ever-growing body of incontestable science-based evidence, have all thrust climate change into the centerstage of national, regional and global policy debate and development discourse. Indeed, Agenda 2030, specifically SDG 13, as well as the closely related SDGs 14 and 15; together with Goals 6 and 7 of the Africa Union Commission's Agenda 2063 call on all countries to take urgent action to combat climate change and its impacts and move onto a climate resilient and sustainable economic development trajectory.

The Intergovernmental Panel on Climate Change (IPCC) defines climate change as a change in the state of the climate that can be recognized by changes, due to human action or natural changeability, in the mean of its properties that persist for an extended period of, say 10 years and above; while the United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as a change in the climate that is attributed directly or indirectly to human activity which alters the structure of the global atmosphere

[1] This Policy Brief is produced by the Strategic Policy Advisory Unit of the UNDP Nigeria Country Office. The opinions expressed in this Brief however, are those of the authors (Ojijo Odhiambo and Fatima Umar), and do not represent the views of UNDP, the United Nations or any of its affiliate organizations.

or to natural climate variability observed over comparable time periods (UNFCCC, 2011).

Population pressure; rapid urbanization; increase in economic activities; increased use of fossil fuels and other non-renewable energy sources; deforestation; and conflicts as well as a host of natural factors are all important contributory factors. In many countries around the world, Nigeria included, the adverse effects of climate change are overwhelmingly manifest in rising temperatures, changes in precipitation patterns, droughts and heat waves, rise in sea levels, loss of biodiversity, land degradation, landslides, etc. Undoubtedly, the financial and institutional investments, as well as policy and legal reforms needed to adapt to and mitigate these, and other adverse effects of climate change are enormous. New and innovative funding and financing mechanisms are, certainly, needed.

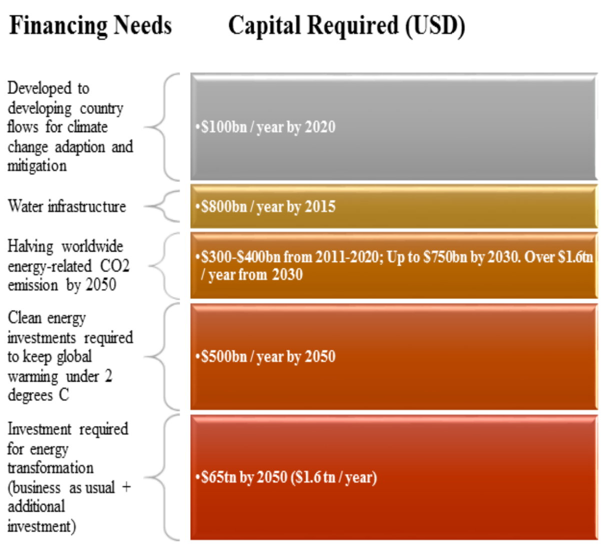


Fig.1: Estimated financing needs to mitigate climate change. Source: Alexander, Gulati & McDonald, "Green Bonds: Victory Bonds for the Environment", TD Economics, November 2013. Available at: http://www.td.com/document/PDF/economics/special/GreenBonds_Canada.pdf

GLOBAL FRAMEWORK; NATIONAL COMMITMENTS AND ACTION

The Paris Agreement[2] adopted in 2015 by the Parties to the UNFCCC is a legally-binding framework for a globally coordinated effort to tackle climate change and its deleterious effects, generally, and specifically, to keep global warming well below 2 degrees on pre-industrial averages and, ultimately, achieve net-zero emissions in the second half of this century. It calls on countries to formulate progressively ambitious climate targets and mitigation measures, deposited in Nationally Determined Contributions (NDCs), consistent with the

[2] Available at https://unfccc.int/sites/default/files/english_paris_agreement.pdf

universal goal and their own national development challenges and priorities.

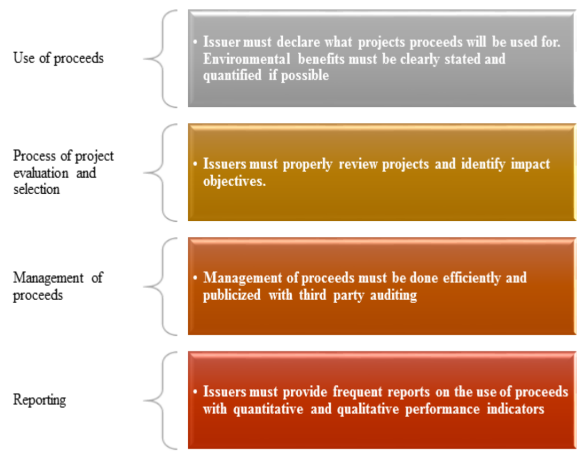
The ambitious nature of this global commitment, coupled with the huge financial requirements as well as technological advancements needed to address climate change call for greater innovation and a business unusual approach to financing. Indeed, the Addis Ababa Agenda Action (AAAA)[3] calls for a wide range of initiatives and measures to overhaul global finance practices and generate investments for tackling contemporary economic, social and environmental challenges, including climate change. It emphasizes domestic resource mobilization over official development assistance (ODA) and highlights the fact that a multiplicity of financing sources, including private finance through blended finance, will be needed to achieve the SDGs. But how exactly can the private investors finance the SDGs, and specifically, climate change?

Sovereign bonds, debt securities issued by governments, present one such avenue.

GREEN BONDS AS AN INNOVATIVE FINANCING MECHANISM

Green bonds are similar to other bonds[4] in all respects expect that the proceeds are targeted towards investments in environmental programmes such as renewable energy, energy efficiency, sustainable natural resources, sustainable waste management, sustainable land use, biodiversity conservation, clean transportation programmes, all of which have potential to mitigate the adverse effects of climate change. Like other bonds, Green bonds would be of interest to investors with

GREEN BOND PRINCIPLES



[3] See: http://www.un.org/ga/search/view_doc.asp?symbol=A/CONF.227/L.1

[4] A bond is a fixed income investment in which an investor loans money to mostly governmental, or sometimes private, entity for a defined period of time at a variable or fixed interest rate.

large fixed income looking for products offering appropriate risk adjusted returns but with special interest in contributing to environmental conservation efforts and climate change mitigation. Green bonds present a **win-win-win** scenario: for governments - resource mobilization for public investments in environmental programmes; for investors – guaranteed returns on investments at an agreed rate; and for the environment – conservation and sustainable use of natural resources. Green bonds are a viable and attractive avenue for investors looking for opportunities, not just for assured financial returns on their investments but also to contribute to the greater common good and secure humanity's common heritage.

To ensure the attainment of the desired benefits, the issuance of Green bonds is often governed by the following guiding principles:

Fig. 2: Green bonds – Guiding Principles

Across the globe, Green bonds are increasingly becoming an important source of financing for investments in the environmental programmes. Green bonds though generating modest, low risk, long-term cash flows are proving to a better fit than private equity and venture capital due to their requirements for high, immediate returns in a short time frame[5].

A 2016 International Financial Cooperation (IFC) report showed that the NDCs of some 21 emerging market economies alone present an estimated $23trillion in investment opportunities between then and 2030[6] while a report by Arianna Torzi (2015) showed that global market for Green Bonds will be valued at an estimated $1 trillion by 2020.[7] It is estimated that Green bonds can supply up to 84 percent of the private, third-party capital required to finance the development needed to transition to a low carbon economy.[8]

At the regional level, an annual average of $285.15million and total of $3421.83 million was mobilized from multilateral and bilateral sources through Green bonds between 2002

[5] GREEN BONDS IN BRIEF: Risk, Reward and Opportunity.

[6] International Finance cooperation (World Bank Group) report on Green Bonds Impact, November 2016

[7] Arianna Torzi "Green Bond Market Growth is boosting low carbon projects" The climate group, June 2015. www.climategroup.org

[8] Whitehouse, Lacy, et al. "Carbon Capital: Financing the low carbon economy", Accenture, February 2011, p.58. Available at: http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture_Barclays_Carbon_Capital.pdf

and 2014.[9] This is more than the annual average financial resources mobilized through all other climate funds. Furthermore, the IFC report[10] estimated that a total of $783 million will be needed for climate smart investments in selected African countries between now and 2030, pointing to the existing huge investment opportunities in the region.

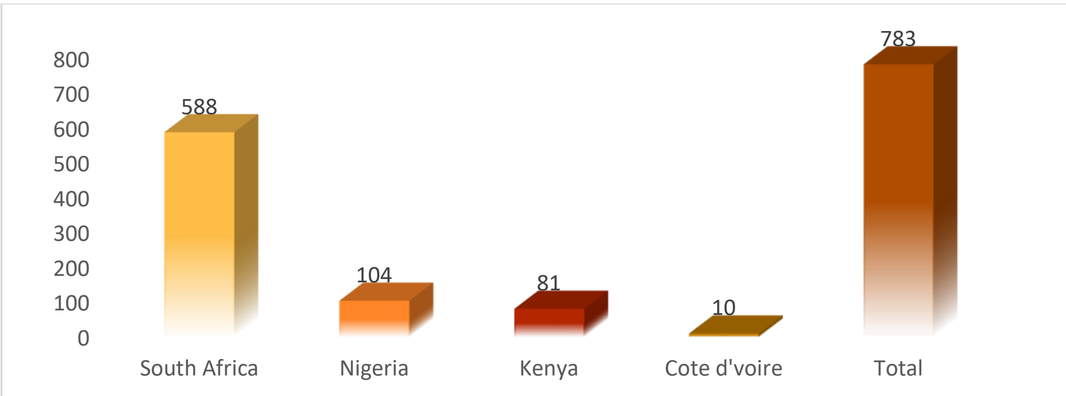


Fig 3. Africa's potential for climate smart investments 2016 - 2030 in selected sectors (buildings, renewables, transport and waste) (USD)- selected countries

GREEN BONDS AND SDGS IN NIGERIA

The Federal Government of Nigeria, committed to achieve the SDGs, in general, and meet her obligations under the Paris Agreement as outlined in the NDC, in particular, while fully aware of the funding constraints that it currently faces, has rolled out a Naira 150 billion Green Bond programme.[11] As part of this programme, the Government issued the first Green Bond amounting to Naira 10.69 billion ($ 29 million) in December 2017, with a maturity of five years during which time investors will receive biannual interests and is currently gearing up a follow-up issuance in late 2018, with the identification of potential projects currently underway.[12]

Specifically, the first Green bond was issued to finance the three projects with potential to benefit climate change and contribute to

[9] 2 Overseas Development Institute (ODI) and Heinrich Böll Stiftung (HBS), Climate Funds Update Website, June 2015.

[10] *Op Cit*

[11] It is instructive to note that Nigeria is the first country in Africa and the fourth country in the world to issue a Sovereign Green bond after Poland, France and Fiji.

[12] The Green bond was officially listed at the Nigeria Stock Exchange on 20 July 2018

the attainment of the various SDGs as follows:

- Renewable Energy Mini Utility (REMU) Program intended to provide electricity access to 45 unserved communities across the country with distributed loads of 33 -50 kW per community leading an estimated reduction of 195 tons per year in CO_2 emissions and contributing to SDGs 7, 8 and 9.
- Energizing Education Program which is aimed at developing Off - grid Independent Power Plants to 37 Universities and seven leading to reduction in CO_2 emission to the tune of 29,774 tons per year and contributing to the attainment of SDGs 3, 4, 7 and 8.
- Afforestation Program aimed at re-establishing forest cover of 131,000 ha in 25 pilot states across the country consequently contributing to biodiversity conservation and climate change mitigation efforts, principally through carbon sequestration with an expected contribution of reduction of 12,869 tons/per annum of in CO_2 emission and contributing to SDGs 2,8,13,15.

EXAMPLES OF GREEN BONDS AND SDGS ACROSS THE GLOBE

Examples of Green Bond funded projects directly helping to achieve the SDGs include:

Goal 6; Brazil - Espirito Santo Integrated Sustainable Water Management Project (P130682 | FY14): improve sustainable water resources management and increase access to sanitation.

Goal 7; MOCUBA SOLAR – Mozambique's power generation capable of generating 187 gigawatts (GW) of power. This includes an estimated 23 GW from renewables, mostly from unexploited solar power

Goal 11; The City of Buenos Aires. Project aimed at avoiding 794 tons of CO_2 emissions annually (670 from Colon-Alem BRT and 124 from bus interconnection terminals) not including emissions saved through bicycle sharing program.

Goal 13; China New Energy- Expansion of a China-based integrated solar system solution provider, engaged in solar PV manufacturing and solar power generation enabling the company to develop solar power generation projects in emerging markets outside of China (South-South investment).

Goal 14; Indonesia - Coral Reef Rehabilitation and Management Program- Coral Triangle Initiative (P127813 | FY14): protect and sustainably manage unique coral ecosystems in selected districts and provinces

Goal 15; Tunisia - Fourth Northwest Mountainous and Forested Areas Development (P119140 | FY11): better protect and manage natural resources through conservation of soil and water resulting from improved agriculture and pasture practices and to improve access to potable water for rural communities

CONCLUSIONS AND POLICY RECOMMENDATIONS

The deleterious effects of climate change have placed climate change at the centerstage of national, regional and global policy debate and development discourse and are manifestly clear in almost every facet our lives today. That concerted efforts and action are needed at all levels therefore, cannot be gainsaid. Indeed, the international community has committed, via the Paris Agreement, to keep global warming well below 2 degrees on pre-industrial averages and, ultimately, achieve net-zero emissions in the second half of this century. Nigeria's NDC outlines her own commitment to this global aspiration consistent with her own development objectives and challenges. Across the globe, new and emerging climate businesses are creating boundless business and investment opportunities.

The needs for climate-smart investments are enormous and beyond the capacities of many governments and thus the urgent need to mobilize resources from other players, including the private sector. The recently-launched Green bonds programme, through which the Government intends to raise a total of Naira 150 billion presents a viable and sustainable financing mechanism for mobilizing resouces from the private sector for sustainable development, in general, and, specifically, climate change mitigation and adaptation.

But for Green bonds to serve as the driver of climate change adaptation and mitigation; economic growth and the sustainable development agenda in the country, there is a need to effect a number of policy, legal, and administrative reforms, including the following:

- As a necessary first step, there is need to promote the further development of Nigeria's capital market, of which the bond market is part, which has been adjudged to be under-developed and small in relation to the size of the economy and remains vulnerable and highly exposed to global economic shocks thus limiting its overall potential for growth and contribution to economic and sustainable development.
- As the Green bond portfolio grows, there is a need to put in place measures to create a conducive investment environment and attract additional investors – domestic and foreign - through, *inter alia,* the maintenance of a stable macroeconomic environment; promotion of the rule of law and enforcement of contracts; determination of appropriate risk adjusted returns especially in high risks business such as energy storage; and promoting greater transparency and accountability in the operations of the stock market.
- The need for clarity in the definition of what exactly constitutes 'green projects' which qualify for funding through Green bonds, avoiding potential controversial and 'non-green' projects.
- As relatively new instrument operating in a relatively under-developed market, there is need more sensitization and awareness raising and interest among the general public, potential investors and the policy and decision makers, including Parliamentarians, on importance of and the need for their active participation in this financing instrument.
- There is need strict adherence to the Green bond principles and laid down

procedures and guidelines in issuance of and application of proceeds from Green bonds, as well monitoring of projects in order to promote transparency and accountability for results.

- There is need to strengthen national and local level capacities for policy formulation and implementation of environmental programmes in general and climate change projects in particular.

REFERENCES

AFRICAN DEVELOPMENT BANK: Green Bonds. (2014). *Africa Research Bulletin: Economic, Financial and Technical Series*, 51(6), pp.20456C-20457C.

Berensmann, K. and Lindenberg, N. (2016). Green Finance: Actors, Challenges and Policy Recommendations. *German Development Institute/Deutsches Institut für Entwicklungspolitik*, [online] 23. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2881922.

Boulle, B. (2013). Overview: The Dawn of an Age of Green Bond? *The climate bonds initiative*. [online] Available at: https://www.climatebonds.net/2014/05/2013-overview-dawn-age-green-bonds [Accessed 25 Jul. 2018].

Development Research Center of China (2013). *How to grow green bonds in China*. [online] Available at: https://www.climatebonds.net/resources/publications/china-report [Accessed 25 Jul. 2018].

Duru, U. and Nyong, A. (2016). Why Africa Needs Green Bonds. *Africa Economic Brief*, 7(2).

Green Finance; What can stock exchanges do? (2015). *World Investment Forum*. [online] Available at: http://www.sseinitiative.org/wp-content/uploads/2016/07/Green-Finance-Policy-Brief.pdf [Accessed 25 Jul. 2018].

International Capital Market Association (2017). *The green bonds principles. Voluntary Process Guidelines for Issuing Green Bonds*. [online] Paris: ICMA. Available at: https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GreenBondsBrochure-JUNE2017.pdf.

International Finance Corporation (2017). *Green Bond Impact Report*. [online] Washington: IFC Investor Relations. Available at: http://file:///C:/Users/fatima.umar/Documents/201710-IFC-Green-Bond-Impact-Report-FY17-v2.pdf.

International Finance Corporation (2016). *Climate Investment Opportunities in Emerging Markets, An IFC Analysis*. Washington: IFC.

Intergovernmental Panel on Climate Change (2015). Climate Change 2014: Synthesis Report. Geneva.

TD Economics (2013). *Green Bonds: Victory Bonds for the Environment*. [online] Available at: https://www.td.com/document/PDF/economics/special/GreenBonds_Canada.pdf.

United Nations Framework Convention on Climate Change 2011 Factsheet Fact sheet: Climate change science - the status of climate change science today: available at https://unfccc.int/files/press/backgrounders/application/pdf/press_factsh_science.pdf

Unfccc.int. (2018). *The Paris Agreement | UNFCCC*. [online] Available at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement [Accessed 25 Jul. 2018].

The World Bank (2010). The Euromoney Environmental Handbook. Washington: The World Bank.

The World Bank (2017). *Green Bond Impact Report*. [online] Washington: Investor Relations, Capital Markets Department. Available at: http://file:///C:/Users/fatima.umar/Downloads/report-impact-green-bond-2017.pdf.

Timbers, A., Ackerknecht, L., Edwards, K., Knight, K., Kononenko, R. and Nielsen, W. (2014). GREEN BONDS IN BRIEF: RISK, REWARD AND OPPORTUNITY. *Cornell Institute for Public Affairs*.