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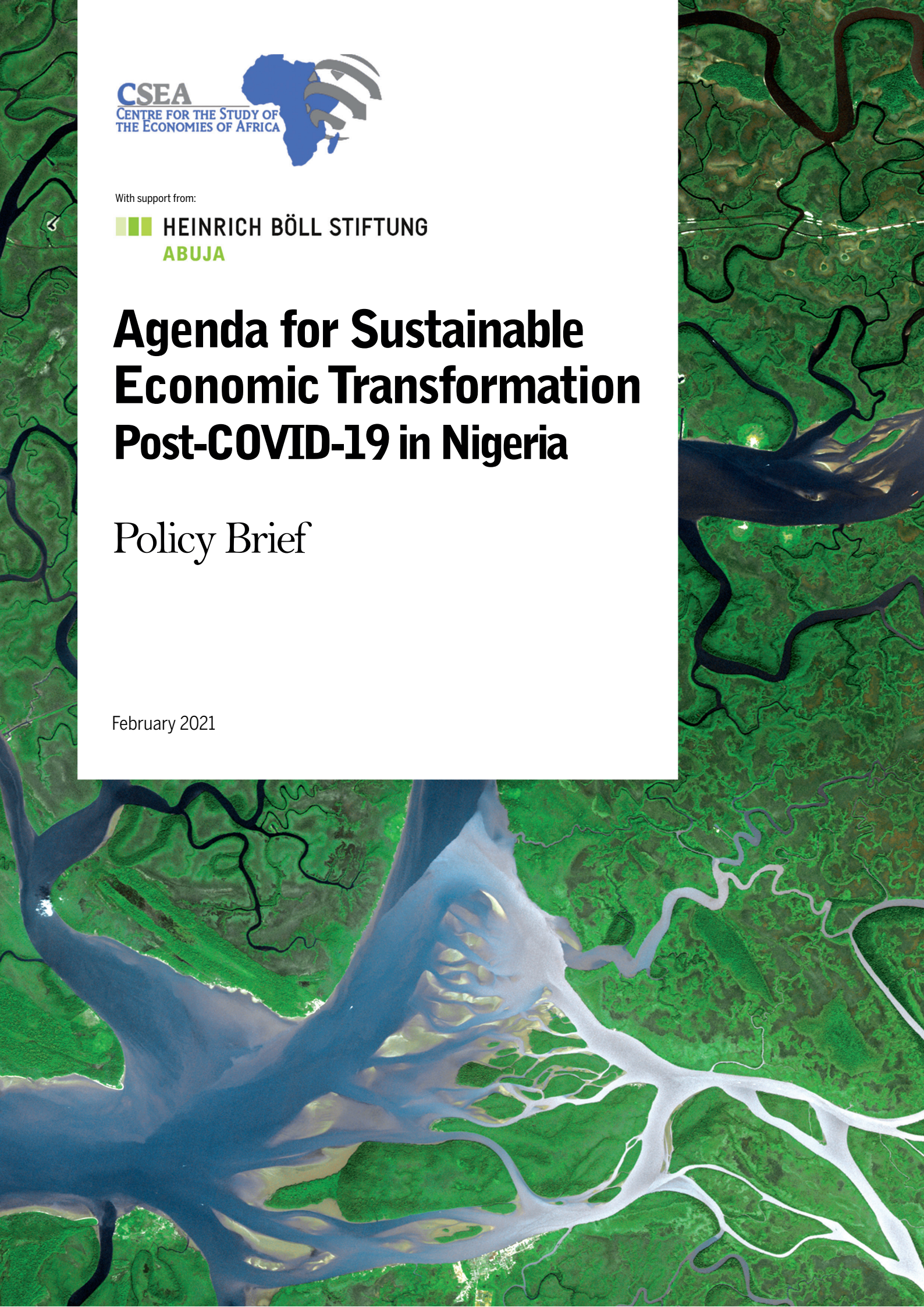
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Agenda for Sustainable Economic Transformation Post-COVID-19 in Nigeria

Policy Brief

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1 Introduction

The COVID-19 pandemic has had a debilitating effect on the Nigerian economy. Specifically, the combination of lockdown measures and the global slowdown of economic activities led to the contraction of Nigeria's GDP by 6.1% in the second quarter of 2020, thus inducing the country's second recession within five years (NBS, 2020). Nevertheless, it is noteworthy that the pandemic occurred amid prevailing economic vulnerabilities.

Nigeria's economy has been widely recognized as a mono-product and ecologically unsustainable economy, largely due to its high dependence on oil (see Okonkwo & Uwazie, 2015). Oil revenue continues to account for a considerable share of government revenue and exports, as it constituted 70% of government revenue and 77% of exports in 2019 (NBS, 2019). The situation is made worse considering the changing dynamics in the global energy market, with renewable energy outpacing conventional energy sources in efficiency and cost-effectiveness. Beyond the economic implications, from a climate change perspective, the reliance on fossil fuels as the dominant source of energy for electrification—accounting for 75% of on-grid capacity—is in stark contrast to the objectives of the Paris Agreement and Agenda 2030, to which Nigeria is a signatory (SEforALL, 2020). Consequently, Nigeria's oil dependence is at odds with its long-term economic and environmental ambitions.

Furthermore, the informal sector remains a large contributor to Nigeria's economic output and employment as it accounted for 65% of the country's GDP in 2017 (BOI, 2018). A survey by the National Bureau of Statistics (NBS) finds that agriculture, trade, accommodation and food services account for the majority of informal sector output (NBS, 2016). Given that the informal sector is characterised by low-wages and the absence of social security coverage, a considerable share of workers and micro-entrepreneurs in Nigeria operate at a survivalist level. Essentially, the COVID-19 crisis - through the reduction in global demand and the restrictions to movement - has exacerbated the existing structural and systemic problems, especially the heavy reliance on oil and the presence of a large informal sector.

However, the crisis marked by an unprecedented need for government intervention - also presents an opportunity to test Einstein's famous assertion that, "In the midst of every crisis, lies great opportunity". The increase in spending plans and the adoption of policy measures present an opportunity for the country to take a more appropriate strategic direction and address its long-acknowledged structural weaknesses. If, rather than focusing on a short-term relief strategy aimed at restoring the pre-pandemic status quo characterized by oil dependence, lack of export diversification, and high poverty rates, the policy responses are designed to achieve economic and environmental sustainability, the COVID-19 pandemic could be a pivotal moment.

Against this background, the policy brief examines the pre-existing economic vulnerabilities, evaluates the Nigerian government's responses to the pandemic with

regards to achieving a green and more-diversified economy, and develops a new agenda and strategies for sustainable growth and economic transformation.

The policy brief is structured as follows. Section 2 presents an analysis of the Nigerian economy's pre-pandemic structural shortfalls, and how COVID-19 has exacerbated their damaging impacts. This is followed by an evaluation of how the government has intervened, fiscally or otherwise, to mitigate some of the worst impacts of the pandemic in Section 3. Section 4 presents coherent and forward-looking economic strategies focusing on diversification through agroecology, renewable energy, and the use of debt relief to stimulate a green transition. The final section summarizes and concludes.

2 Prevailing Economic and Structural Vulnerabilities

While the pandemic and the lockdown measures have certainly had an adverse impact, there are existing structural weaknesses that increased the economy's vulnerability to negative shocks. In this section, these pre-existing deficiencies including economic unidimensionality, large informal structure, agricultural deficiencies, and high debt levels, alongside the extent to which the pandemic has exacerbated the situation are discussed.

2.1 Poor Economic Diversification

The Nigerian economy's reliance on crude oil for revenue and export earnings is a key source of vulnerability. While crude oil accounted for only 9% of GDP in 2019, it accounted for 94% of exports in 2018 (NBS, 2019; WITS, 2018a). The skewed composition of national exports despite past attempts to promote and diversify exports away from petroleum has made Nigeria remain mostly a mono-product economy and is a cause of constant macroeconomic and societal disturbances. Furthermore, the dominance of the oil sector reflects a high dependence on the inherently unpredictable revenue the sector provides. According to the National Bureau of Statistics, the oil sector contributed to 70% of government revenue and 90% of foreign exchange earnings in 2019 (NBS, 2019). As the decline in oil prices that followed the onset of the COVID-19 pandemic highlights, such a high level of dependence is a threat to meeting current financial obligations and the prospects for long-term socio-economic progress.

The situation is made worse considering that the COVID-19 crisis has led to a growing international recognition of the unsustainability of the oil industry in its current form.

As a recent report by global consulting firm McKinsey puts it, “On its current course and speed, the [oil] industry could now be entering an era defined by intense competition, technology-led rapid supply response, flat to declining demand, investor scepticism, and increasing public and government pressure regarding impact on climate and the environment” (Barbosa et al, 2020). Consequently, the climate crisis is likely to take a more central role in government policies globally, as decarbonisation increasingly becomes a strategic goal of industry players. While this is a necessary development as the world addresses climate change, it also places Nigeria in a precarious situation given its heavy reliance on crude oil, underscoring the intense need for greater diversification.

Past and current administrations recognise the need for diversification; however, it has proven difficult given the implications of oil dependence - macroeconomic volatility, crowding-out of investments in other sectors, and the deterioration of security and quality of governance (Ross, 2017). For example, excessive reliance on volatile commodities curtails economic progress and diversification by deterring private investment (Aghion et al, 2006; Blattman, et al, 2007). The impact of the heavy reliance on natural resources is further explained by the crowding-out of other tradable sectors associated with the Dutch Disease phenomenon. This is the “phenomenon whereby a boom in one traded goods sector squeezes profitability in other traded goods sectors, both by directly bidding resources away from them and by placing upward pressure on the exchange rate” (Corden & Neary, 1982:iii). Thus, diversification is less attainable due to currency appreciation and a loss of competitiveness in other tradable sectors.

The crowding-out effect is especially undesirable if, as is the case for oil, the prioritised sector tends to have little spill-over benefits in terms of both physical and human capital accumulation as the industry requires skills that tend to have limited applicability in other industries. As such, the possibilities of ‘learning by doing’ – considered a key mechanism to prompt diversification – are therefore limited. Since countries tend to diversify by moving from their specialized products to other industries that employ similar capabilities, the crude oil industry’s very low skills transferability makes it the single most difficult category of goods to diversify away from (Ahmadov, 2014). Consequently, on the Economic Complexity Index¹ (ECI), which is designed to indicate the level of difficulty countries that specialize in a given export face when diversifying into other categories of exports, Nigeria ranked third from bottom in the ECI global rankings² in 2018.

Moreover, in recent years the literature on the underdevelopment of growth-enhancing sectors in Nigeria has also highlighted the existence of the ‘Nigerian Disease’ as a contrast to purely economic theories relating to the Dutch Disease (see Rosser, 2006). Nigerian Disease theorists argue that the abundance of natural resources hampers effective development-focused policymaking through the creation of poorer governance and violent conflicts. Heavy reliance on oil and the associated revenue instability, have been linked in many studies to higher levels of corruption, more rent-seeking activity,

1. Also considered a valuable indicator of economic diversity (Morrison et al, 2017), further underscoring the unidimensionality of Nigeria’s economy.

2. Particularly problematic given the ECI’s strong predictive power on a country’s level of income, economic growth, and income inequality, among other things (Hartmann et al, 2017; Hidalgo & Hausmann, 2009).

greater civil conflict, and erosion of social capital with the effect of creating a government with little incentive for institution-building and the implementation of pro-development reforms (Arezki & Bruckner, 2011; Caselli & Michaels, 2013; Rosser, 2006; Sala-i-Martin & Subramanian, 2012). Along these lines, Mustapha and Masih (2016) find Nigeria is more affected by the Nigerian Disease than the Dutch Disease, implying that beyond the economic effect, reliance on oil has an effect on social and political dimensions as well as institutional quality.

2.2 High Informality

The overwhelming dominance of the informal economy in Nigeria contributes to the slow process of diversification and has deterred the coverage and targeting of government interventions during the COVID-19 pandemic. Although estimates of its actual contribution to the national economy vary widely year-on-year (and based on different methodologies and definitions of informality), there is a uniform acceptance that the informal economy is central to the Nigerian economy, with the IMF (2017) estimating its size to be approximately 65% of GDP, and the ILO (2018) indicating 93% of employment to be informal.

It is noteworthy that the informal economy is not necessarily a detriment to economic development. Several theories have emphasised the positive effects of an informal economy in areas ranging from providing incomes to maintain families in low-income areas; contributing to economic growth via increasing purchasing power and effective formal-informal industry integration; to engendering cost-effective production chains. However, during a period of economic crisis, the predominance of the informal sector exacerbates the adverse effects of the economic downturn. Due to its nature, informal employment is largely precarious and dependent on daily interface for its income. However, the reduction in demand for non-essential commodities, uncertainty surrounding future prospects, and the temporary restrictions on movement that were initially imposed, affected the ability of groups depending on daily commerce to generate income. Worse still, informal businesses are less likely to adapt to the new virtual means of doing business, increasing the likelihood that they are unable to earn an income during the pandemic.

Moreover, the fact that informal businesses are informal, and thus largely unregistered and unknown to the authorities, poses complications in designing a recovery strategy to support them. Their 'hidden' nature can create an issue in identifying them, thus complicating the process of targeting cash relief delivery to the most vulnerable during this crisis. Furthermore, access to programs that the government implements can often hold hidden barriers for informal, low-skill businesses. For example, the lower levels of literacy and limitations to accessing banking services for poor households and businesses in the informal sector hamper their ability to access formal credit facilities. As such, the likelihood of the Nigerian economy emerging from the crisis in an equitable and sustainable manner is threatened, and the ability of the government to target interventions in a manner that aligns with broader policy objectives such as diversification and green transition is undermined.

2.3 Low Productivity in Agriculture Sector

Agriculture remains a key sector in Nigeria as it is the largest contributor to the nation's GDP (24.6% in Q2 of 2020), the highest non-oil export earner, and absorbs the majority of the workforce (48% of Nigerians were employed in the sector in 2018) according to National Bureau of Statistics (2019). However, the sector remains overwhelmingly informal and has had challenges adapting to modern practices in a manner that contributes to the country's diversification drive, while simultaneously combatting the adverse effects of climate change. As a result, domestic agricultural produce has been unable to keep up with the country's vertiginous population growth, resulting in progressively increasing reliance on imports totalling around USD 8 billion yearly over the last few years (USDA, 2020).

Fundamentally, the sector is characterized by low productivity further affecting its ability to meet domestic demand. For example, Nigeria's cereal yield at 1,537 kilograms per hectare compares poorly with 3,725 kilograms per hectare in South Africa and relatively higher levels in the global North (World Bank, 2014). Another critical area is post-harvest losses. Patrick (2013), for example, finds that Nigeria records over 40% post-harvest losses, which is associated with a number of challenges including poor returns to the farmers, food insecurity, and resulting high levels of food importation in the country.

The government has put forward several interventions such as the Green Imperative Program (focused on the provision of tractors) and the Agricultural Promotion Policy (centred, among other things, on improving supply of specialized fertilizers and protection chemicals) to develop the sector. However, this strategy of placing emphasis on intensifying the use of machinery, fertilizers, and pesticides has thus far not only failed to deliver the desired results, but also ignores the important imperative to decarbonise the economy. Agroecological solutions which apply ecological concepts and principles to optimize interactions between plants, animals, humans and the environment, while taking into consideration the social aspects that need to be addressed for a sustainable food system (FAO, 2020) offer untapped potential in a sector that is dominated by small scale farmers. Essentially, the continued insistence on a narrow and ecologically unsustainable development strategy is not in accordance with the long-term objective of building an economy resilient to global economic shocks and the impacts of climate change.

2.4 High Debt Level

Increased borrowing in recent years has caused a high debt burden in Nigeria, with debt-to-GDP ratio estimated at 29% in 2019 and forecasted to rise to 34.8% in 2020 (IMF, 2020). Similarly, the share of government revenue allocated to debt servicing is predicted to rise from 56% to 96% between 2019 and 2020 (IMF, 2020). Understandably, this raises concerns beginning with the demands of debt servicing which stifle government investment in strategic developmental areas. The 2020 budget, for instance, devotes NGN 2.43 trillion to debt servicing, while NGN 706 billion and NGN 464 billion were allocated to the education and health sectors respectively (FGN, 2019). Due to the fiscal shortage,

Nigeria seems to be locked in a debt trap that forces the country to borrow in increasingly larger quantities, as evidenced by the recent USD 3.4 billion assistance package granted from the IMF. Such packages have in the past often been associated with stifling commitments to fiscal conservatism and austerity that are detrimental to the receiving economy in the long-run.

The issue of indebtedness takes on a further political role in that sub-national governments are also severely fiscally challenged. Collectively, Nigeria's 36 states are about USD 23.6 billion in debt, and their reliance on the Federal Government for largely oil-backed funding makes reductions in expenditure very likely (Debt Management Office, 2020). As allocations to sub-national governments inevitably shrink, some states could be faced with a fiscal crisis. The crisis affecting both national and sub-national governments will thus, "worsen poverty, unemployment and insecurity, as well as degrade basic public services and infrastructure",³ but could also fundamentally threaten the fragile political consensus that has allowed the even splitting of the country's oil revenues among all states since 1999.

Moreover, the low ability to adequately mobilise domestic resources does not point to the possibility that increased tax collection might ease debt constraints in the future. In 2020, the total tax collection accounts for 6.3% of GDP which compares unfavourably to neighbouring countries such as Cameroon and Ghana at 14.6% and 14.1% respectively, and OECD countries that collect between 30% and 50% of GDP in taxes (OECD, 2020). The limited ability in mobilizing domestic resources, coupled with the impact of the pandemic on oil price and domestic activities puts Nigeria in a difficult position with regards to meeting debt servicing obligations and other development needs.

Indeed, the World Bank (2019) has stated that high levels of debt can be crippling for developmental prospects of low and middle income countries. Meanwhile, increased investments in green initiatives are being pushed as the most promising path to build back stronger and better post-pandemic. In Nigeria's case, the rising debt paints a bleak picture regarding the government's ability to provide jobs and poverty alleviation programs in the short-term, alongside diversifying the economy and addressing the growing challenges posed by climate change in the long-run.

3. <https://www.chathamhouse.org/2020/05/coronavirus-nigerias-fiscal-flu>

3 A Review of Macroeconomic Policy Responses and Economic Plan in Response to the Pandemic

Policymakers globally have deployed macroeconomic policies and adopted economic plans aimed at stabilizing economic fundamentals, minimizing corporate insolvencies, and sustaining livelihoods. Table 1 shows the fiscal and monetary policies deployed in Nigeria, including exchange rate management during the pandemic. Given the unprecedented scale and scope of these policies, it is important to assess the extent to which these policies achieve long-term economic and environmental objectives including economic diversification, climate resilience, and broader structural changes.

A key policy response by the Central Bank of Nigeria (CBN) is the provision of two-step loans to commercial banks for onward lending to small and medium-sized enterprises (SMEs), the manufacturing sector, the real sector, and vulnerable population groups like the youth. Increased access to credit in these strategic sectors and demographic groups could be viewed as a market-oriented solution to address the limited availability of finance in the private sector. Furthermore, the reduction of interest rate on CBN interventions from 9% to 5% and the one-year debt moratorium offers credit to the real sector at more favourable terms relative to the pre-pandemic period. Affordable and widely available loans to non-oil sectors can influence the diversification of the country's economy away from oil. Consequently, increased production could have an impact on exports, with non-oil sectors taking up a larger share of trade in goods and improving the country's trade surplus and foreign exchange balance. However, an unintended consequence could be the default on loans by large numbers of recipients, leaving the government to absorb the losses.

Since the pandemic, the CBN has devalued the naira as a result of the reduction in foreign exchange inflows, due to the weak global demand for oil. The exchange rate has been adjusted towards the market-determined rate from N307/USD1 to N379/USD1, on the back of the decline in foreign exchange earnings, which could have an effect on the attractiveness of exports (CBN, 2020). Furthermore, the exchange rate at the Investors and Exporters window – the market trading segment for investors, exporters and end users which offers a more market-determined exchange rate – was devalued from N360/USD1 to N387/USD1. The literature posits that exchange rate devaluations are likely to encourage export supply and diversification (see Wondemu & Potts, 2016). However, for an import-dependent economy like Nigeria (imports as a share of GDP is 18% according to WITS, 2018b), the immediate effect of the devaluation is an increase in the prices of commodities, with inflation increasing from 12.26% to 14.23% between March and October, 2020 (CBN, 2020).

The complete deregulation of energy prices is another layer of intervention from the government. Ensuring the appropriate pricing of fossil fuels is likely to disincentivize the use of fossil fuel and incentivize green investments thus putting the country on the path to climate resilience. Other energy sources such as solar and wind are likely to become relatively more affordable, and the removal of the subsidy reduces the crowding out of public spending which could be earmarked towards green investments and adopting climate-friendly policies. Meanwhile, other policy responses such as provision of tax rebates to companies and reduction of the Monetary Policy Rate, on their own, are unlikely to achieve long-term economic or environmental objectives.

Table 1. An outline of Nigeria’s macroeconomic policy responses and their alignment to long-term economic and environmental objectives.

	Policy Response	Alignment to greener economy, export diversification, and structural changes based on the inherent features of the interventions.
Fiscal Policies	Conditional cash transfer programme to 3.7 million people and increase of social register by 1 million households	No
	Tax rebate to companies	No
	Increase in VAT from 5% to 7.5%	No
	Creating a N50 billion (\$139 million) targeted credit facility	Yes
	Special Public Works (SPW) Programme for the vulnerable	No
	Removal of fossil fuel subsidies	Yes
	N2 trillion loan to the manufacturing sector	Yes
	N1.5 trillion loan to the real sector	Yes

	N100 billion intervention to the health sector	No
	N3.6 trillion to the banking system	Yes
	N300 billion MSME Development Fund	Yes
	N75 billion Nigerian Youth Investment Fund	Yes
Monetary policies	Reduction of Monetary Policy Rate (MPR) from 13.5% to 11.5%	No
	Reduction of interest rate on CBN interventions from 9% to 5%	Yes
	Provide additional one-year moratorium on CBN interventions	Yes
Exchange rate and balance of payment	Official devaluation of naira from N307/USD1 to N379/USD1	Yes
	Depreciation of the naira at the I&E window from N360/USD1 to N387/USD1	Yes

Source: Authors compilation based on IMF, 2020.

Aside from the macroeconomic policy responses undertaken, the government has also formulated the Economic Sustainability Plan (ESP) 2020-2021 which puts forward 16 strategies that could potentially develop the real sector covering improvements in social and infrastructure services, increased job creation and food security, as well as the use of clean energy (ESP, 2020). Specifically, the ESP seeks to expand labour-absorbing sectors such as the agriculture, mining, construction, manufacturing, and services sectors. This will be achieved through the establishment of new housing and road construction projects (construction and manufacturing sectors), provision of loans and conditional grants (agriculture, manufacturing, and service sectors), use of off-taker schemes (agriculture and manufacturing sectors), and registration of businesses (mining sector).

There is also a focus on expanding SMEs through the provision of financial and technical assistance, and exemption from tax payments; leveraging on the increased use of technology to establish new sectors in the digital economy such as contact centres, document digitization, and software development; and the expansion of Social Investment Programmes such as the cash transfer programme. The support to SMEs will also promote the formalization of informal small businesses, while the emergence of the new tech-related sectors will likely absorb the unemployed population into low- and mid-level skilled jobs. Furthermore, the plan emphasizes on the use of clean energy through the expansion of solar energy systems to power homes.

However, the ESP is an extension of the previous plan, the Economic Recovery and Growth Plan 2017-2020, with minimal revisions. There remains a heavy focus on primary sectors such as the agriculture and mining sectors with no extensive plan to shift the economy to higher productivity sectors. For instance, the national public works programme that has been put forward focuses on providing jobs to build rural roads using locally available materials such as limestone and granite – a low-skill activity. While these are low-hanging fruits, there needs to be a more deliberate effort in creating high-skill and high-technology intensive opportunities in the industry/manufacturing and services sectors. In the manufacturing sector, for instance, producing for exports even for intermediate goods should be considered critically particularly as the government embarks on the African Continental Free Trade Area (AfCFTA) agreement. Moreover, in addition to increasing labour participation across sectors, improving labour and other factor productivity growth is a major enabler to achieving structural change. Presently, the services sector, and particularly financial services, has experienced significant productivity improvements mainly through the introduction of Information and Communication Technologies (ICT). Current and future economic plans should as much as possible replicate such productivity improvements across other sectors.

4 Moving Towards a Sustainable Economic Transformation

Given the challenges in achieving a sustained process of economic diversification and the limitedness of the current economic plan, there is the need to identify sectors and strategies capable of achieving long-term economic and environmental sustainability. This section highlights key sectors in the economy with growth potentials, export capacity, and the ability to absorb a considerable share of the labour force, as well as strategies to realize the sectors' potential. The anticipated aim is to increase productivity, transform the economic structure, and reduce carbon dependency.

4.1 Green Transitions: An Assessment of Priority Sectors

When viewed globally, Nigeria is not a large emitter of greenhouse gases (GHGs), with a contribution of less than 1% of global emissions (total net national emissions of 609,783.8 Gg CO₂-eq in 2016) (FME, 2020). However, the country is the second highest emitter of GHGs in Sub-Saharan Africa, owing mainly to its high population growth, with trends showing potential of a doubling of emissions by 2030 (ILO, 2020).

Latest statistics from Nigeria's submission to the UNFCCC from 2016 (see Table 2) show that 60.1% of total aggregated emissions came from Agriculture, Forest and Other Land Use (AFOLU); followed by Energy with 33.9%, Waste with 3.8%, and Industrial Processes and Product Use (IPPU) with 2.2%. Within the energy sector, transport, electricity and fugitive emissions from oil and gas are the most prominent sources. The statistics also show that CO₂ was responsible for 72.9% of the emissions, while methane and nitrous oxide accounted for 21.2% and 5.8%, respectively. This implies that priority sectors for green transition will have to look into power, agriculture, manufacturing and transportation sectors.

Table 2: National emissions for the year 2016.

Categories	Net Co ₂ (Gg)	CH ₄ (Gg)	N ₂ O (Gg)	Total (Gg CO ₂ -eq)	NO _x (Gg)	CO (Gg)	NMVOCs (Gg)	SO ₂ (Gg)
Total National Emissions and Removal	444,668.7	6,7170.4	114.6	609,783.8	756.1	13,875.9	2,107.0	121.4
1 Energy	124,021.6	3,762.3	11.0	206,452.4	473.6	10,268.0	1,638.4	64.5
2 IPPU	13,254.9	0.6	0.0	13,267.1	0.0	0.0	0.9	0.0
3 AFOLU	307,320.4	1,640.0	80.6	366,733.9	0.2	5.9	0.0	0.0
4 Waste	71.8	767.6	23.0	23,330.3	59.0	835.9	0.0	9.8
5 Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Memo items								
International Aviation (international Bunkers)	1,241.3	0.0	0.0		5.0	0.4	0.2	0.4
International water-borne navigation (international bunkers)	70.0	0.0	0.0		1.8	0.2	0.1	0.4

Source: Third National Communication (TNC) of the Federal Republic of Nigeria, 2020.

4.2 Agroecology

Nigeria's approach to strengthening its agricultural sector has, until now, lacked the creativity and foresight needed to generate an ecologically and economically sustainable agricultural economy. Thus far, government policies have focused entirely on intensification of production through traditional high-external input and resource-intensive agricultural techniques. While these strategies have succeeded in supplying the world markets with enormous quantities of food, they have done so at the cost of nearly irreversible damage to ecosystems through, among other things, vast deforestation, biodiversity loss, water scarcity, soil depletion and high levels of greenhouse gas emissions (FAO, 2018). All of this in an environment of profound global social inequalities that leave some unable to access the enormous volume of production of global and national agricultural systems.

A new approach would take into consideration the growing consensus surrounding the potential for farming to thrive when working in unison with local ecosystems, rather than seeking to combat natural processes – the current orthodoxy, chemical inputs, land clearing practices etc. Agroecology, is an “integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems” (FAO, 2018:1). It therefore centres upon strategies that make the best use of nature's goods and services while not damaging these resources. This approach optimises how various elements in agricultural ecosystems interact, and takes great care to address the social aspects of a sustainable and fair food system that have often been neglected in current agricultural practices.

Fundamentally, the FAO outlines ten components to building agroecological systems that maximize food production while strengthening ecosystems and social interrelations (FAO, 2018). These begin with an emphasis on diversification through techniques like agroforestry and intercropping, and the generation of social networks for the co-creation and sharing of locally-relevant knowledge. Strengthening how communities work together to develop highly context-specific techniques that are optimal for particular environments is both low-cost, and a safe bet in making an inclusive agricultural system a reality.

Agroecology also centres on the notion of building upon natural synergies between different elements of ecosystems. This maximizes efficiency and allows a lower waste in inputs which remains an enormous challenge in modern agricultural practices. Moreover, agroecology makes a concerted effort to develop systems of recycling that not only further enhance efficiency, but also imitate natural processes that do not contemplate the notion of waste.

Besides renewing agricultural techniques, some of the central tenets of an agroecological transition regard the very social fabric of the society within which agriculture is practiced. The FAO's report therefore clarifies that agroecology intrinsically develops human and social values, strengthens responsible governance, and ultimately is a strong contributor to developing a circular and solidarity-driven economy. Developing more agroecologically sound agricultural structures is an integral component of the FAO's

“Common Vision for Sustainable Food and Agriculture” and would put Nigeria in line with global best practices on tackling the deleterious effects of climate instability while simultaneously strengthening social networks. In this sense, developing countries like Nigeria, where intensive agricultural practices are less deeply entrenched than in the Global North, could take the lead in the movement to an agricultural system more fit for the challenges of the 21st century (Pereira et al., 2018). This, however, will require a concerted government effort and public investment conducive to encouraging agroecological transitioning.

An espousal by the Nigerian government to a serious agroecological revolution could consist of a number of policies that might facilitate the transition. Using evidence from other developing country contexts, Sabourin et al (2018) classify pro-agroecology policies in four groups, beginning with innovation and knowledge management instruments which are policies that aim to foster knowledge-sharing and promote the development of traditional low-impact techniques.

Instruments to ensure access to resources are government actions that make sure farmers are guaranteed access to the necessary agricultural and financial tools to facilitate their transition into agroecological production. For instance, the extension of cheap credit facilities to small scale farmers could be key in helping them overcome the potential short-term obstacles to transition.

The third group of public policies conducive to agroecological transitioning is instruments that ensure access to markets and food security. These can encompass the creation of organic certification standards that help elevate agroecologically produced food at a national and international level. However, support to shorter food supply chains through the encouragement of local markets, and public procurement from agroecologically compliant farmers are also easy and efficient ways to promote agroecological farming and ensure food security that strengthens the social fabric of the agricultural sector.

Finally, agroecological practices can also be promoted through the tightening of environmental regulations. While the three types of policies above seek to actively push farmers to adopt agroecological strategies, making old environmentally-degrading practices less attractive (by, for instance, regulating biodiversity requirements, or punishing high use of pesticides and fertilizers) can also serve as incentives for transition. A government policy platform that both actively encourages agroecological strategies to be adopted, and also increases the costs associated with not doing so would be the optimal combination for the Nigerian government to adopt in seeking to develop an agricultural system that is environmentally sound and socially constructive.

4.3 Renewable Energy

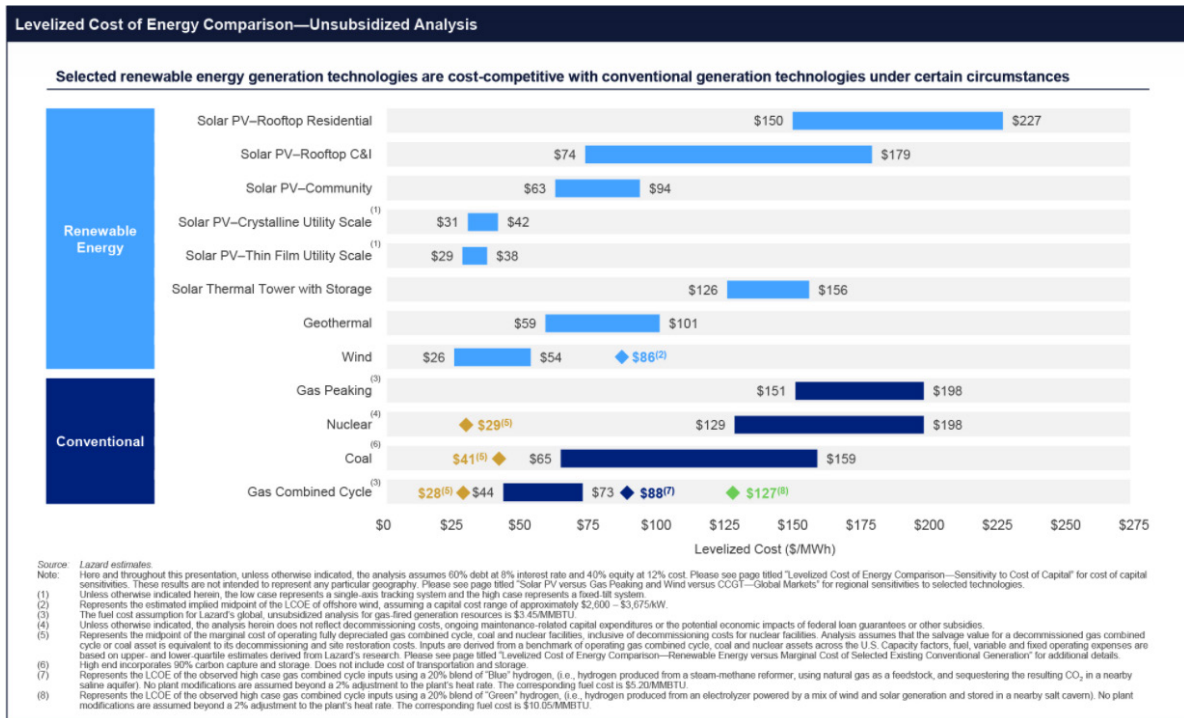
There is a major scepticism on the need for renewable energy transition among developing countries given their low contribution to greenhouse gas emission. Yet, the emerging consensus is that developing countries are the most vulnerable to climate change impacts due to low technological and financial capacities to develop viable mitigation and adaptation strategies. Developing countries taking the lead on climate policy and strategy is therefore required and could help galvanize global efforts. Nigeria, with its prominent role in Africa, could play an important role in the global and regional leadership around climate change.

The high energy poverty in Nigeria and the limitedness of non-renewable energy in meeting this need is another pointer to the urgent necessity for a green energy transition. The current installed generation capacity is set at 12,500MW, with only 3,500MW to 5,000MW available for transmission to the electricity grid for consumption. Nigeria needs well above 31,000MW of additional electricity to adequately cater for the electricity needs in both commercial and residential sectors. In addition, over 70% of the population depend on firewood (Nwozor et al, 2019). This has led Nigeria to be the world's third largest producer of bioenergy in the form of fuel wood, agricultural residues, animal, and forestry waste (USAID, 2019). The reliance on non-renewable energy sources has implications for health, long-term growth and the environment, all of which provide a strong case for a shift towards a green energy transition.

Renewable energy is not only clean, it is fast becoming more cost-effective than conventional energy sources. Figure 1 shows the levelized costs of energy from various sources based on 2020 estimations (Lazard, 2020). Levelized cost comparisons provide the economic assessment of an energy-generating system over its lifetime including initial investment, operations and maintenance, cost of fuel and cost of capital. The analysis shows that some renewable energy (in particular solar PV at utility scale) is already cost competitive with conventional generation. As technology improves and with further significant cost reductions in sight, the deployment of renewable energy solutions in the context of off-grid electricity generation is offering huge potential; especially when the deployment is intentionally coupled with business models that can boost local livelihoods, for example, in agricultural value chains.⁴ A transition to green energy is therefore based on sound economic and environmental rationale.

4. <https://rmi.org/electrifying-nigerian-agriculture-with-clean-minigrids-to-improve-livelihoods/>

Figure 1: Levelized Cost of Energy Comparison.



Source: Lazard (2020).

4.3.1 Opportunities for Renewable Energy Transition Amidst COVID-19 Pandemic

i. Creating job opportunities and developing new sectors

The potential for job creation from investment in renewable energy in the local supply chain is significant. In Africa, every \$1 million dollar investment in large-scale solar generation projects generates about 80 jobs. In addition, decentralized energy solutions (solar home systems or solar mini-grids) connected per 1000 customers support about 25 jobs. According to Sustainable Energy for All, an econometric study of government spending on energy technologies revealed that every US\$1 million spent on renewables creates five more jobs than spending on fossil fuels (SEforALL, 2020). Furthermore, every US\$1 million investment in retrofitting buildings generates between 16-21 jobs. With the enormous job losses arising from COVID-19, developing the renewable energy sector could lessen the demand shock on the labour market.

ii. Expansion of off-grid power

This can bridge the technological divide between urban and rural areas. During COVID-19 induced lockdown, many households could not cope with alternative (digital) platforms due to infrastructural inadequacy typically electricity.

The lack of electricity in Africa is still a critical issue and requires adequate attention. According to SEforALL (2020), about 565 million people in the continent lack access to such a basic necessity for poverty alleviation. This highlights the need for consideration of off-grid energy sources for which renewable energy is more viable.

iii. Renewable energy generated electricity

There has been less consumption of/demand for fossil fuel energy due to COVID-19. Nigerian government removed fuel subsidies and also increased the electricity tariff during the pandemic. Sustaining some of these reforms and shifting support to the renewable sector will be a smart move. Thus, a change in focus towards assembling small and emergent off-grid technology largely powered by solar, hydro, and wind would be an effective way to achieve this goal. The use of decentralized grids would allow for energy to be delivered both near and far. It is also a cheaper means to provide energy when compared to fossil fuels. As a result of technological advances, costs associated with renewable energy have been reduced, which has enabled local renewable energy generation to become both commercially viable and attractive to consumers. The COVID-19 shock clearly illustrates a gradual global shift towards a digital and circular economy. To tap into this economic transformation in Nigeria, quality supply of electricity will be vital. With a significant percentage of the population off-grid, exploring renewable energy becomes not just an alternative but the only viable means of generating the needed electricity.

It should be noted that Nigeria has indeed begun to follow a path towards a greater decentralisation of energy supply. This trend, for instance, is evidenced by the Rural Electrification Agency's (REA) development of mini-grid projects, as well as the inclusion of seven Solar Home System (SHS) suppliers in the subsidisation programs instituted by the Federal Government in the aftermaths of the pandemic. Nevertheless, the pursuit of widespread renewable energy sources remains far below potential, and keeps Nigeria well off the pace to achieve its 30:30:30 - 30GW of energy generated, at least 30% of which through renewables, by 2030 - targets.

4.4 Debt-for-Climate-Protection Swaps

Debt-for-climate swaps are a viable solution to address Nigeria's reduced fiscal space, while investing in environmental protection. The underlying concept is that rather than service existing external debt with foreign currency, governments can make payments in their home currency towards local environmentally-friendly projects on agreed-upon terms with creditors. As such, the government is able to create fiscal space by conserving foreign exchange through the conversion of foreign-currency-denominated debt to local currency while at the same time investing in climate-friendly projects (such as in agriculture or energy as described above). On the other hand, creditors indirectly invest in climate projects with significant returns rather than lose out on debt repayment. Debt-for-climate-protection swaps provide benefits to debtor and creditor countries on both economic and environmental fronts as several countries including Seychelles have had successful debt-for-climate swaps, exchanging existing debt for investments in conservation of biodiversity and forests (Fuller et al, 2018).

Given that debt swaps can only be applied to long-term external debt, Nigeria is uniquely positioned to leverage on the mechanism. The country's external debt stock has risen considerably in recent times, increasing from US\$5.9 billion in 2011 to US\$27.5 billion in 2019 (Figure 2). Considering the high debt level and worsening debt servicing capacity owing to declines in revenue and exchange rate depreciations, the government seeks to

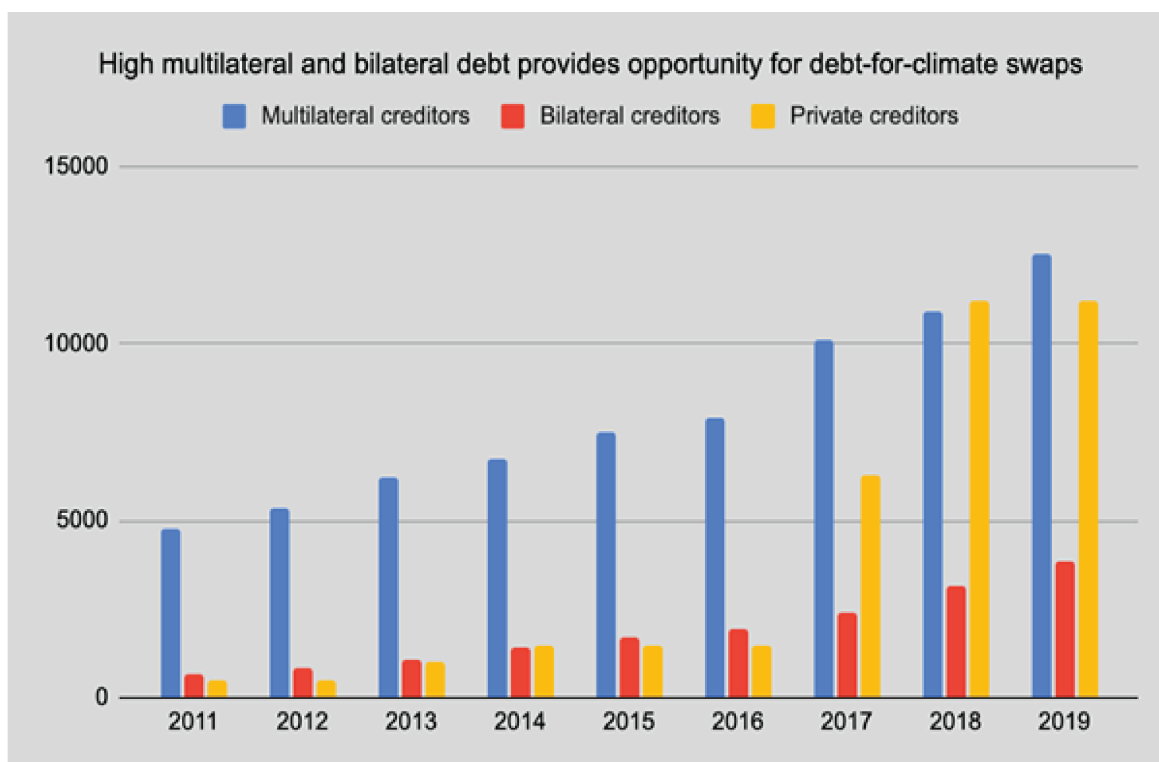
obtain debt service relief from creditors (Alake et al, 2020). Presently, the available debt service relief programme put forward by G20 countries under the Debt Service Suspension Initiative (DSSI) only suspends debt service payments for participating countries without reducing the debt stock. Moreover, private and multilateral creditors as well as non-G20 bilateral creditors have not put forward a proposal for debt relief for middle-income countries like Nigeria.

Additionally, the Nigerian government has institutional knowledge and experience in undertaking debt swaps which can be drawn on. Under the Multilateral Development Relief Initiative (MDRI) in 2005, the government undertook a debt swap where the Paris club offered debt forgiveness valued at US\$ 19 billion in exchange for investments in the Millennium Development Goals (MDGs), in particular poverty reduction efforts. Country experiences with debt swaps point to the need for high-level government support and the adoption of a whole-of-government and whole-of-society approach in designing and implementing the swap. Adequate government buy-in and commitment is required to reprioritize newly available budget resources towards climate projects particularly in a context of sub-optimal budget implementation and budget leakages associated with corruption and poor monitoring. Similarly, support from civil society organizations is essential as the majority of climate adaptation and mitigation programmes involve local communities and stakeholders.

Furthermore, the use of debt-for-climate swaps aligns with the government's plan to develop a green bond market. The government has issued green bonds on two occasions in 2017 and 2019 valued at NGN10 billion (USD27.3 million) and NGN15 billion (US\$41 million) respectively, as part of a 5-year NGN150 billion (USD420 million) Sovereign Green Bond Programme (Department of Climate Change, 2020). The funds are deployed towards the selected Nationally Determined Contributions (NDC) sectors covering afforestation programmes, renewable energy, transportation, agriculture, and water sectors. Consequently, a debt-for-climate swap programme can rely on the strengthened institutional and policy framework for green projects, thus ensuring that selected projects are evaluated in line with globally accepted principles, are regularly monitored and evaluated, and that the swap process benefits from technical oversight from experts. Additionally, the existing green bond issuances have led to the identification of a pipeline of eco-friendly projects which will also be beneficial in the implementation of a swap. Thus, these swaps can benefit from an existing ecosystem of green finance and become a key aspect of the system.

Moving towards achieving its NDCs to the Paris Agreement, the government in 2018 identified 14 climate projects to be implemented with USD500 million. Together, the projects will enable the country achieve its climate pledge to reduce emissions by 20% by 2030. Given that debt owed to multilateral and bilateral creditors accounted for USD12.5 billion and USD3.8 billion respectively in 2019, support from these creditors in a proposed debt swap will exceed the financing cost of these projects and could raise the government's pledge considerably. However, making the case for international support will require building a science-backed debt swap programme with goals anchored in the country's NDCs, as well as well-defined implementation strategies.

Figure 2. Nigeria's external debt by creditors US\$ million; 2011-2019.



Source: World Bank, 2021. International Debt Statistics.

5 Conclusion

This paper lays out an agenda for a sustainable economic growth in the time of COVID-19 which has imposed human and economic costs globally. The unprecedented macroeconomic responses at the global and national level to the crisis have focused on ensuring a swift recovery. However, for a country like Nigeria that is already facing deeper structural problems, focusing alone on recovery will be insufficient. A bolder and broader rebuilding process is required and this crisis is an opportunity to make these reforms.

As the literature on “crisis hypothesis” has strongly demonstrated, major economic crises provide opportunities to implement reforms that are difficult to take during good economic times. Reforms, especially structural reforms, involve the government constraining itself and changing the existing status quo that they benefit from. For Nigeria, COVID-19 represents such an opportunity. The three elements – agroecology, renewable energy, debt-for-climate swaps - in the agenda for reform that has been put forward, although not all-encompassing, can be the starting point for a comprehensive and deeper set of policy and institutional change in Nigeria.

References

- Adekitan, A. I., Adetokun, B., Shomefun, T., & Aligbe, A. (2018). Cost implication of line voltage variation on three phase induction motor operation. *Telkomnika*, 16(4).
- Aghion, P., Bacchetta P., Rancierre, R., and Rogoff, K. 2009. Exchange Rate Volatility and Productivity Growth: The Role of Financial Development. *Journal of Monetary Economics* 56, no. 4: 494–513.
- Ahmadov, A., 2014. Blocking the Pathway Out of the Resource Curse. *Global Economic Governance Working Paper*. University of Oxford.
- Alake T., Olurounbi R., Lacqua F., 2020. Nigeria in Final Stages of Talks for Loan From World Bank. Retrieved from: <https://www.bloomberg.com/news/articles/2020-11-27/nigeria-says-world-bank-loan-discussions-in-final-stage>
- Arezki, R., and Brückner, M. 2011. Oil Rents, Corruption, and State Stability: Evidence from Panel Data Regressions. *European Economic Review* 55, no. 7: 955–963.
- Aubert, B.A., Schroeder, A. and Grimaudo, J., 2012. IT as enabler of sustainable farming: An empirical analysis of farmers' adoption decision of precision agriculture technology. *Decision support systems*, 54(1), pp.510-520.
- Bank of Industry, 2018. Economic Development through the Nigerian Informal Sector: A BOI perspective. Retrieved from: https://www.boi.ng/wp-content/uploads/2018/05/BOI-Working-Paper-Series-No2_Economic-Development-through-the-Nigerian-Informal-Sector-A-BOI-perspective.pdf
- Barbosa F. et al. 2020. Oil and gas after COVID-19: The day of reckoning or a new age of opportunity? McKinsey & Company
- Blattman, C., Hwang J., and Williamson, J.G., 2007. Winners and Losers in the Commodity Lottery: The Impact of Terms of Trade Growth and Volatility in the Periphery 1870–1939. *Journal of Development Economics* 82, no. 1: 156–179.
- Caselli, F., and Michaels, G. 2013. Do Oil Windfalls Improve Living Standards? Evidence from Brazil. *American Economic Journal: Applied Economics* 5, no. 1: 208–238.
- Corden, W.M., and Neary J.P., 1982. Booming Sector and de-Industrialisation in a Small Open Economy. *The Economic Journal* 92, no. 368: 825–848.
- Cramer, C., Di John, J., Sender, J., 2018. Poinsettia Assembly and Selling Emotion: High Value Agricultural Exports in Ethiopia. *AFD Research Papers Series*, No. 2018-78, August.
- Debt Management Office, 2020. Domestic Debt Data for the 36 States of the Federation and the Federal Capital Territory as at June 30, 2020.
- Department of Climate Change, 2020. Green Bonds. Retrieved from: <https://climatechange.gov.ng/2020/09/21/brief-on-green-bonds/>

Environmental Law Institute, 2014. Artisanal and Small-Scale Gold Mining. Recommendations to Address Lead and Mercury Exposure.

Evbuomwan, G., 2016. Diversification of the Nigerian Economy: Agriculture and Solid Minerals as Panacea. Bullion Magazine 40th Anniversary.

FAO, 2018. The 10 Elements of Agroecology: Guiding the Transition to Sustainable Food and Agricultural Systems.

FAO, 2020. Agroecology Knowledge Hub. Retrieved from: <http://www.fao.org/agroecology/overview/en/>

FGN, 2019. 2020 Approved Budget Breakdown Ministry of Finance, Budget & National Planning, Federal Government of Nigeria. Online at: <https://budgetoffice.gov.ng/index.php/highlights-breakdown-of-the-2020-approved-budget/highlights-breakdown-of-the-2020-approved-budget/download>

Federal Ministry of Environment, 2020. Third National Communication (TNC) of the Federal Republic of Nigeria under the United Nations Framework Convention on Climate Change (UNFCCC).

Fuller, F., Zamarioli, L., Kretschmer, B., Thomas, A. and De Marez, L., 2018. Debt for Climate Swaps: Caribbean Outlook. Impact: Science Based Implementation of 1.5 C Compatible Action for LDCs and SIDS, pp.1-18.

Hartmann, D., Guevara, M. R., Jara-Figueroa, C., Aristarán, M. & Hidalgo, C. A., 2017. Linking Economic Complexity, Institutions, and Income Inequality. *World Development* 93, 75–93.

Hausmann, R., and Rigobon, R. 2003. An Alternative Interpretation of the 'Resource Curse': Theory and Policy Implications. NBER Working Paper, no. w9424.

Heinrich Boll Stiftung, 2017. Comparison of Costs of Electricity Generation in Nigeria. Abuja, June, 2017. Online at: https://ng.boell.org/sites/default/files/true_cost_of_power_technical_report_final.pdf

Hidalgo, C. A. & Hausmann, R., 2009. The building blocks of economic complexity. *PNAS* 106, 10570–10575.

IIED, 2012. Renewable Energy Potential in Nigeria. Low-carbon approaches to tackling Nigeria's energy poverty

ILO, 2018 Women and men in the informal economy: a statistical picture (third edition) / International Labour Office – Geneva: ILO, 2018

IMF, 2017. The Informal Economy in Sub-Saharan Africa: Size and Determinants. IMF Working Paper WP/17/156

IMF, 2020. Nigeria Request for Purchase Under the Rapid Financing Instrument – Press Release; Staff Report; And Statement by the Executive Director for Nigeria. IMF Country Report No. 20/142

World Bank, 2021. International Debt Statistics. Retrieved from <https://datatopics.worldbank.org/debt/ids/country/NGA>

IRENA (2016), Solar PV in Africa: Costs and Markets

Lazard, 2020. Lazard's Levelized Cost Of Energy Analysis – Version 14.0. Available at: <https://www.lazard.com/media/451419/lazards-levelized-cost-of-energy-version-140.pdf>

- Morrison, S. V. Buldyrev, M. Imbruno, O. A. D. Arrieta, A. Rungi, M. Riccaboni, F. Pammolli, 2017. On economic complexity and the fitness of nations. *Sci. Rep.* 7, 15332.
- Mustapha, I.M., and Masih, M. 2016. Dutch disease or Nigerian disease: a prima facie? New evidence from ARDL bound test analysis. MPRA Paper No. 69767. Online at <https://mpra.ub.uni-muenchen.de/69767/>.
- NBS, 2016. Formal and Informal Sector Split of Gross Domestic Product 2015.
- NBS, 2019. Foreign Trade in Goods Statistics (Q4 2019)
- NBS, 2019. Nigerian Gross Domestic Product Report (Q3 2019)
- NBS, 2020. Nigerian Gross Domestic Product Report (Expenditure and Income Approach)
- OECD, 2020. Revenue Statistics in Africa 2020 - Nigeria. <https://www.oecd.org/tax/tax-policy/revenue-statistics-africa-nigeria.pdf>
- Okonkwo, O. and Uwazie, U., 2015. Green Economy and Its Implications for Economic Growth in Nigeria. *Journal of Resources Development and Management* Vol. 11
- Onyeator, I., 2019. Glocalizing the Creative Industries Concept: Identifying the Characteristics of the Nigerian Creative Industries. *European Journal of Research in Social Sciences* Vol. 7 No. 3, 2019 ISSN 2056-5429.
- Patrick. I., 2013. Nigeria records over 40 percent post-harvest losses sustainable food security in Nigeria (SUFOS). Pereira, L., Wynberg, R., Reis, Y., 2018. Agroecology: The Future of Sustainable Farming? *Environment*. Volume 60 Number 4. <https://doi.org/10.1080/00139157.2018.1472507>
- PWC, 2016. Entertainment and media outlook report 2016-202 for South Africa, Nigeria and Kenya. Retrieved from <https://www.musicinafrica.net/magazine/pwc-nigeria%E2%80%99s-music-sectorreach-86m-2020-0>.
- Ridwan, A., Akashoro, G., & Ajaga, M., 2013. An empirical study of the trend and pattern of video-film piracy in Nigeria. *European Scientific Journal*, 9(14), 1857- 7431.
- Rosser, A., 2006. Escaping the Resource Curse. *New Political Economy*, Volume 11, 2006 - Issue 4.
- Sabourin, E., Marzin, J., Vazquez, L. 2018. Public Policies to Support Agroecology in Latin American and the Caribbean. CIRAD: Agricultural Research for Development Policy Brief. May 2018.
- Sala-i-Martin, X., and Subramanian, A., 2012. Addressing the Natural Resource Curse: An Illustration from Nigeria. *Journal of African Economies*, ejs033.
- SEforALL, 2020. The Recover Better With Sustainable Energy Guide for African Countries. United Nations Special Representative of the Secretary General
- Uguru, U., Faga, H.P., and Igwe I.O., 2019. Analyzing the Challenges to Diversification of the Economy through

Protection of Intellectual Property Rights in the Entertainment Industry in Nigeria. *Curentul Juridic* p. 13-33.
USDA, 2020. Food and Agricultural Import Regulations and Standards Country Report. Nigeria. FAIRS Annual Country Report

Wondemu, K.A. and Potts, D.J., 2016. The impact of the real exchange rate changes on export performance in Tanzania and Ethiopia.

World Bank, 2014. Agribusiness Indicators: Nigeria. The International Bank for Reconstruction and Development/THE WORLD BANK.

World Bank, 2019. Debt in Low-Income Countries. Evolution, Implications and Remedies. Macroeconomics, Trade and Investment Global Practice, March 2019. Policy Research Working Paper 8794

World Integrated Trade Solution, 2018a, Nigeria Product exports and imports 2018. Retrieved from: <https://wits.worldbank.org/CountryProfile/en/Country/NGA/Year/LTST/TradeFlow/EXPIMP/Partner/WLD/Product/All-Groups>

World Integrated Trade Solution, 2018b. Trade Summary for Nigeria. Retrieved from: <https://wits.worldbank.org/countrysnapshot/en/NGA>

World Integrated Trade Solution, 2018c. Nigeria Minerals Exports by country and region in US\$ Thousand 2018. Retrieved from: https://wits.worldbank.org/CountryProfile/en/Country/NGA/Year/2018/TradeFlow/Export/Partner/all/Product/25-26_Minerals

Wuppertal Institute, 2006. Microfinance and renewable Energy Investing in a sustainable future. *Visions of Sustainability*.



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