



**FEDERAL REPUBLIC OF NIGERIA**

# **NATIONAL INTEGRATED INFRASTRUCTURE MASTER PLAN**



FEDERAL MINISTRY OF FINANCE, BUDGET AND NATIONAL PLANNING

October 2020



# Foreword

I am delighted to present the Revised National Integrated Infrastructure Master Plan (2020-2043) produced by the Federal Ministry of Finance, Budget and National Planning. The Revised National Integrated Infrastructure Master Plan (NIIMP) gives update on some of the infrastructure development activities, spending, and progress achieved on the capital projects executed across the seven key infrastructure asset classes namely: Transportation; Energy; Social Infrastructure; Information and Communications Technology; Housing; Agriculture, Water & Mining; Security and Vital Registration. The NIIMP provides the roadmap for building a world-class infrastructure that will guarantee sustainable economic growth and development. It would enable the nation to take advantage of the vast opportunities in the domestic and global economies to enhance the nation's competitiveness and improve the quality of life of the citizenry. In recent years, the Federal Government adopted different strategies in addressing the huge infrastructure gap in all the sectors of the Nigerian economy. Some of these strategies include the Nigerian Vision 20:2020, the National Integrated Infrastructure Master Plan (NIIMP) and the Economic Recovery & Growth Plan (ERGP) that form the basic government blueprint for building world-class infrastructure required to grow the economy and improve Nigeria's global competitiveness.

The revised NIIMP provides an integrated view of infrastructure development in Nigeria, with clear linkages across key sectors. It identifies and elaborates on enablers for successful implementation in line with the current economic realities. It takes stock of existing infrastructure and identifies the required investments to bring infrastructure to the level desired by Nigerians in line with the country's growth aspirations. The document also specifically sets out the goal of raising Nigeria's infrastructure stock to at least 70.0 per cent by the year 2043. When this goal is achieved, its impact on nation-building cannot be overemphasized as it will stimulate desired economic growth and development in social and human capital of the nation. It is, therefore, plausible to say that the growth of any nation's economy is largely dependent on the state of its infrastructure. In order to close the huge infrastructure deficit, Government has to invest more in infrastructure development such as roads, electricity, housing, agriculture, water, healthcare, and education amongst others, across all sectors of the economy. This investment will usher in the country's desired economic growth levels, provide employment for our teeming youths and create wealth for all. The involvement of the private sector is also very important in improving and increasing the infrastructure stock.

In conclusion, the Revised National Integrated Infrastructure Master Plan is a product of wide consultations with stakeholders drawn from the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), Academia, the Private Sector and Federal Ministry of Finance, Budget and National Planning (FMFBNP). While commending the efforts of all concerned towards the achievement of this great milestone, I would like to further urge all stakeholders involved in the implementation of this blueprint to relentlessly work towards its actualisation so as to ensure that the desired maximum impact on the economy and the livelihood of the people is attained.

Once more, I have no doubt that with careful implementation of the revised NIIMP, the country is on a predictable and irreversible path to collective prosperity. I would therefore like to say thank you all for the support and dedication towards building a secured future for a greater Nigeria.

**Muhammadu Buhari, GCFR**

President, Commander-In-Chief of the Armed Forces,  
Federal Republic of Nigeria

# Preface

The National Integrated Infrastructure Master Plan (NIIMP) is Nigeria's blue-print for boosting and modernizing the nation's stock of infrastructure, over the next 23 years. The document was first drafted in 2012 and approved in 2014. Ever since, the Federal Government had followed through the implementation of the Plan with varying degrees of success. Amongst others, Government had set up the Infrastructure Delivery Coordinating Unit (IDCU) within the Infrastructure Department of the Federal Ministry of Finance, Budget and National Planning in line with the NIIMP framework to coordinate the implementation of the Programme.

More than ever before, the Buhari Administration had given a renewed vigour to infrastructural development and the implementation of the NIIMP. This has reflected in the execution of the priorities of the Economic Recovery and Growth Plan (ERGP) and improved budget allocations. Taking account of Government efforts in infrastructure delivery over the years as well as new developments within the domestic and global environments, the Federal Ministry of Finance, Budget and National Planning felt the need to review the document to reflect these developments. Consequently, the Ministry initiated the review process in 2019 and this document is the outcome of that exercise.

The NIIMP, therefore, is set to liberate the economy from the shackles of weakening infrastructure and the bottlenecks it portends to an enviable height in the future and place it on a solid growth path. It provides the framework that will guide interventions, investments, as well as budgetary allocations to the sector in the next 23 years (2020-2043).

The Reviewed NIIMP has taken stock of the existing infrastructure, and future stock requirements, including total resource requirements, across key sectors of the economy and has identified critical enablers for the promotion of private sector investment. The document presents a strong platform for improved Public and Private sector partnership and Donor support for boosting infrastructural development and empowering Nigerians.

There is no doubt that the estimated resource requirement for NIIMP's implementation is enormous. We are not unmindful of the challenges that lay ahead. However, we are optimistic that, with the various bankable projects identified under the NIIMP and investment by both international and domestic investors in the Nigerian economy, the NIIMP objectives are attainable.

I must acknowledge that a lot of work went into the crafting of this document and I thank all those who contributed to the successful development of this policy document, particularly members from the Central Bank of Nigeria, National Bureau of Statistics, the Academia, Organized Private Sector and staff of the Federal Ministry of Finance, Budget and National Planning for their commitment and hard work, especially in the inclusion of the macroeconomic framework. I also acknowledge the effort of the Editorial Committee, who painstakingly worked to ensure that the final document is of impeccable quality.

The Federal Ministry of Finance, Budget and National Planning is committed to coordinating the implementation of the NIIMP and the provision of necessary support to stakeholders to ensure that the noble objective of the document is effectively realised.

**Zainab Shamsuna Ahmed (Mrs.)**

Honourable Minister of Finance, Budget and National Planning  
Federal Ministry of Finance, Budget and National Planning

# Acknowledgement

The revised National Integrated Infrastructure Master Plan (NIIMP) is a product of wide consultations with stakeholders drawn from Federal Ministries, Departments and Agencies (MDAs), Sub-National Governments, Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), Academia, Private Sector, and Development Partners. Based on these consultations, consistent macroeconomic parameters and projections were developed, while investment requirements by asset classes and region, with estimates for the national and sub-national levels of government and medium and long-term sector targets to guarantee consistency of the document, were revised.

My sincere gratitude goes to the President, Federal Republic of Nigeria, Muhammadu Buhari, GCFR, the Vice President, Federal Republic of Nigeria, Prof. Yemi Osibanjo, GCON and the Leadership of Sub-National Governments. The commitment of the Federal Government of Nigeria in addressing the huge infrastructure gap in all the sectors of the economy is a welcome development. This is evident in the allocation of 30 per cent of total budget appropriation to the implementation of capital projects by key infrastructure MDAs.

This work would not have been possible without the support of the Honourable Minister, Federal Ministry of Finance, Budget and National Planning, Zainab Shamsuna Ahmed (Mrs); her support is highly appreciated. It is practically impossible to overlook the immense support by all the Honourable Ministers and the Honourable Ministers of State in the successful review of the NIIMP. Let me also appreciate the commitment of the Permanent Secretary (MBNP) who chaired the Technical Committee on the Reviewed NIIMP. My sincere gratitude goes to the Technical Team on the Review of NIIMP, the management and staff of the Infrastructure Department of the Ministry that had worked tirelessly to ensure the timely revision of the NIIMP.

While commending all efforts towards the achievement of this great milestone, I seek the support of Stakeholders at all levels of Government, the Private Sector, and Development Partners to assist in the full implementation of the revised NIIMP for the actualization of the plan targets and objectives for sustainable infrastructure development in Nigeria.

Thank you all.

God bless the Federal Republic of Nigeria

## **Prince Clem Ikanade Agba**

Honourable Minister of State for Budget and National Planning  
Federal Ministry of Finance, Budget and National Planning

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# Acronyms

AfDB	-	Africa Development Bank
AIB	-	Accident Investigation Bureau
AIDI	-	Africa Infrastructure Development Index
BPO	-	Business Processing Outsource
BRICS	-	Brazil, Russia, India, China and South Africa
BSG	-	Business Support Group
BUDFOW	-	Business Development Fund for Women
CBN	-	Central Bank of Nigeria
COREN	-	Council of Registered Engineers in Nigeria
COVID-19	-	Corona Virus 2019
DisCos	-	Distribution Companies
ERGP	-	Economic Recovery and Growth Plan
EMDEs	-	Emerging and Developing Economies
ESP	-	Economic Sustainability Plan
ECOWAS	-	Economic Community of West Africa States
FDI	-	Foreign Direct Investment
FGN	-	Federal Government of Nigeria
FERMA	-	Federal Road Maintenance Agency
FMWR	-	Federal Ministry of Water Resources
FAAN	-	Federal Airport Authority of Nigeria
FAO	-	Food and Agriculture Organization
FMARD	-	Federal Ministry of Agriculture and Rural Development
FMBN	-	Federal Mortgage Bank of Nigeria
GAT	-	General Aviation Terminal
GDP	-	Gross Domestic Product
GW	-	GigaWatt
GenCos	-	Generation Companies
I&E	-	Investors and Exporters
ICT	-	Information, Communication and Technology
IMF	-	International Monetary Fund
IPPs	-	Independent Power Plants
ISO	-	Independent System Operators
ICAO	-	International Civil Aviation Organisation
JCU	-	Job Creating Unit
CAO	-	International Civil Aviation Organisation
ITU	-	Telecommunication Union
InfraCos	-	Infrastructure Companies
Km	-	Kilometre
KWh	-	Kilowatt-hour
LV	-	Low Voltage
MTSS	-	Medium Term Sector Strategy
MDAs	-	Ministry, Department and Agencies
MFBNP	-	Ministry of Finance, Budget and National Planning
MINT	-	Mexico, Indonesia, Nigeria and Turkey
Mpd	-	Million barrel per day
MDGs	-	Millennium Development Goals
MW	-	Mega Watt
MV	-	Medium Voltage
Mcfpd	-	Million cubic feet per day
NBS	-	National Bureau of Statistics
NV20:2020	-	Nigeria Vision 20:2020
NIIMP	-	National Integrated Infrastructure Master Plan
NAMA	-	Nigeria Airspace Management Agency

NCAA	-	Nigerian Civil Aviation Authority
NIMET	-	Nigerian Metrological Agency
NCAT	-	Nigerian College of Aviation Technology
NRC	-	Nigerian Railway Corporation
NIWA	-	National Inland Waterways Authority
NPA	-	Nigerian Ports Authority
NITT	-	National Institute of Transportation Technology
NNPC	-	Nigerian National Petroleum Corporation
NGN	-	Nigerian Naira
NIPP	-	National Independent Power Project
NBET	-	Nigerian Bulk Electricity Trading
NREEP	-	National Renewable Energy and Efficiency Policy
NNBP	-	Nigeria National Broadband Plan
NITDA	-	National Information Technology Development Agency
NIPOST	-	Nigeria Postal Services
NCC	-	Nigerian Communication Commission
NGC	-	National Gas Company
NDE	-	National Directorate of Employment
NGSA	-	Nigeria Geological Survey Agency
NYSC	-	National Youth Service Corp
NEMA	-	National Emergency Management Agency
NMRC	-	Nigeria Mortgage Refinance Company
NIDP	-	National Irrigation Development Programme
OPEC	-	Organization of the Petroleum Exporting Countries
PPP	-	Public-Private Partnership
PSRP	-	Power Sector Recovery Plan
PMS	-	Premium Motor Spirit
PEWASH	-	Partnership for Expanded Water, Sanitation and Hygiene
PIB	-	Petroleum Industry Bill
PIGB	-	Petroleum Industry Gas Bill
PHCN	-	Power Holding Company of Nigeria
PAGMI	-	Presidential Artisanal Gold Mining Development Initiative
PPPAC	-	Policies, Programmes, and Projects Audit Committee
RBDAs	-	River Basin Development Authorities
SPVs	-	Special Purpose Vehicles
SURCON	-	Surveyors Registration Council of Nigeria
SCPZ	-	Staple Crop Processing Zones
SMDE	-	Solid Minerals Development Fund
SDGs	-	Sustainable Development Goals
SMEs	-	Small and Medium Enterprises
STBs	-	Set-Top Boxes
TRACON	-	Total Radar Coverage of the Nigerian Airspace
TEUs	-	twenty-foot equivalent units
TFC	-	Trillion Cubic Feet
USD	-	United States Dollar
TCN	-	Transmission Company of Nigeria
Tcfpd	-	Trillion cubic feet per day
TRIMING	-	Transforming Irrigation Management in Nigeria Project
WAN	-	Wide Area Network



## Executive Summary

The National Integrated Infrastructure Master Plan (NIIMP) is government's strategic document which was initially developed in 2012 to guide Nigeria's infrastructure investment, add value to the national economy and in particular enhance private sector participation in infrastructure development. Between 2012 to date, a lot has happened, including some important progress towards improving the quality and stock of the nation's infrastructure. Several important reforms have also been launched across the various spectrum of infrastructure in recent years. The macroeconomic fundamentals and landscape have changed significantly, making previous estimates, targets and assumptions largely unrealistic. Generally, developments within the domestic and global environments necessitated the need for a revision of the Master Plan.

In this revised version, the Plan has been updated to reflect current realities, particularly the COVID-19 pandemic and expected future demands through inputs from the Medium-Term Sector Strategies (MTSS) of each Ministry, Department and Agencies (MDAs), their mid-term reports, and other relevant sector reports. However, the overall objectives and philosophy of the Plan remain unchanged. As with the previous edition, this revised document provides the roadmap for building standard infrastructure that will guarantee sustainable economic growth and development. It provides an integrated view of infrastructure development in Nigeria, evaluates current stock of infrastructure, establishes sector targets and identifies the investments required to achieve the country's growth and development aspirations over the next 23 years (2020-2043). The Plan also identifies and elaborates on critical enablers for its successful implementation.

Unlike the previous version, this revised edition contained a consistent macroeconomic framework that indicates the impact of infrastructural spending on the future path of economic growth and unemployment. Taking account of fiscal realities and developments within the domestic and external environments, a more realistic infrastructure investment path over the next 23-years (2020-2043) is considered. Given the anticipated increased role of the private sector in infrastructure development, the NIIMP identifies potential sources of finance for the required infrastructural investments and enablers. Out of the total infrastructure investment of USD 2.3 trillion required over the next 23 years, about USD 150 billion is needed annually (by both the private and public sectors) to finance infrastructure investment over the medium-term period of 2021-2025. Over this period, the share of the private sector in total investment requirement is higher at 56 per cent while the public sector (Federal and States) accounts for the remaining 44 per cent.

At the sectoral levels, USD46 billion is an estimated annual investment in Vital Registration & Security, USD115 billion in Social Infrastructure, USD253 billion in ICT, USD253 billion in Housing & Regional Development, USD299 billion in Agriculture, Water & Mining, USD575 billion on Transport and USD759 billion in Energy over the plan horizon.

Although, for the next five years (2021 – 2025), the estimated annual investment requirement for Vital Registration & Security is USD3.0 billion; Social Infrastructure is USD7.5 billion; ICT is USD16.6 billion; Housing & Regional Development is USD16.5 billion; Agriculture, Water & Mining is USD19.5 billion; Transport is USD37.5 billion; and Energy is USD49.5 billion.

The largest investment needs are in energy (N1.2 trillion) and transport (N900 billion) sectors both of which represents more than 50.0 per cent of the required infrastructure investments over the plan period. Since transport and energy play crucial enabler roles for practically all other sectors, investment in these areas should be accorded the highest priority. This will provide a solid stock of supporting infrastructure in place for other sectors such as Water, Agriculture, and Mining, and lay a foundation for subsequent growth in these sub-sectors.

In the first 5 years of the reviewed Plan, investments in Energy, Transport, Social Infrastructure, and Housing will be accorded priority due to their current relative level of under-investment. The priority project portfolios identified include ‘quick wins’ that would receive urgent attention over the first five years of this Plan. To guide MDAs and States in the prioritization of capital projects, the NIIMP provides an investment prioritization framework in the following areas.

- **Energy:** Priority would be given to generation capacity and expansion of transmission infrastructure. There is the need to also ensure that the Power Distribution Network, which is regarded as the “last mile”, is improved as well. Priority would also be given to the construction of supporting gas infrastructure. Increased refining capacity to meet national demand for petroleum products is to be accorded high priority.
- **Transport:** Close to 50.0 per cent of investments would be directed at both energy and the roads infrastructure. Investment in road will cover the refurbishing of cross-national highways and expansion of the regional road network and linkages to other modes of transportation. Investments are also required in the rehabilitation of major rail links, renovation, and upgrading of main airports and aviation facilities and systems, inland waterways, and urban transportation in major cities.
- **Information and Communication Technology:** Expansion of mobile network capacity and the broadband fibre-optic network would be the priority. This will, among others, leapfrog the unlocking of digital access in Nigeria as it will provide (and enhance) broadband in both the urban and rural areas of the country.
- **Water, Agriculture, and Mining:** Priority would be given to investments in water supply and irrigation. Also, the development of the agriculture sector will require investments in staple crop processing zones, agro-industrial parks, as well as agricultural processing facilities. In the mining sector, investments would be targeted at reviving the basic mining infrastructure.
- **Housing:** Priority would be given to increasing the number of housing units to close the current and projected housing deficit estimated at 17 million housing units.
- **Social Infrastructure:** Priority investments would be in the construction of facilities for education, hospitals, women and youth development, and sports.
- **Vital Registration and Security:** Priority would be accorded to investments in the national vital registration system and construction and rehabilitation of facilities for all security institutions.

With regard to the financing sources for public sector infrastructure investment, four options have been identified. These include: (a) Government budget (Federal and States) which would finance up to USD 66 billion of infrastructure investment over the period 2020-2025; (b) public debt or government borrowing which would finance up to USD 29.33 billion over the same period; (c) other government-controlled sources such as the Sovereign Wealth Fund, or Pension Funds, which would provide a further USD 36.67 billion of financing; and (d) PPPs which is expected to finance about USD 84 billion in participation from the private sector. Expectedly, the increased private sector participation would require a supportive environment with stable and transparent government policies, rules and regulations, fiscal and monetary incentives to investors, long-term financing mechanisms, and strengthened PPP management capabilities.

The NIIMP outlines the required short to medium term measures needed to ensure effective implementation of the Plan. The immediate changes required include: (a) Strengthening the legal framework to allow for private participation in infrastructure investment; (b) Strengthening the Infrastructure Department within the Federal Ministry of Finance, Budget and National Planning to enable it take responsibility for coordinating the required activities, monitoring progress and managing the process to overcome issues; (c) Ensuring financing for priority projects; and (d) Launching a broad communication effort to reach all priority stakeholders.

Finally, the Medium-term measures that are required as enablers would include the: (a) optimisation of the end-to-end infrastructure governance model; (b) promotion of private sector alignment and support; (c) development of large-scale training programmes to bridge the capability gaps in building, maintaining and operating the NIIMP infrastructure; and (d) strengthening engineering infrastructure. In line with the NIIMP, the State governments in collaboration with the Infrastructure Department of the Federal Ministry of Finance, Budget and National Planning are expected to develop the State Integrated Infrastructure Master Plans (SIIMPs) based on their various priorities.

# 1 Introduction

## 1.1 Background and Context

There is widespread consensus that inadequate infrastructure is one of the major constraints to sustained economic growth and development in Nigeria. Consequently, Nigeria’s various development plans such as National Vision 20:2020 (NV 20:2020) and the Economic Recovery and Growth Plan (ERGP), 2017-2020, consistently point to weak infrastructure as one of the factors that seriously undermined the country’s economic performance over the years. Significant efforts have been made to address these challenges. One of the main objectives of the ERGP is building a globally competitive economy by improving the quality and stock of the nation’s infrastructure. Among the five key execution priorities in the ERGP include expanding the power sector infrastructure to achieve at least 10 GW of operational capacity, and investing massively in transportation infrastructure.

However, despite some noticeable effort and progress made over the last few years - including allocation of at least 30 per cent to capital projects in the Federal Annual Budgets since 2016 - government still acknowledged that substantial infrastructural deficit remains across the country. As the 2019 Global Competitiveness Index Report reveals, Nigeria scored 48.33 points out of 100 and ranked 130th of 141 countries surveyed for the overall quality of infrastructure, well behind Egypt (52nd), South Africa (69th), and Algeria (82nd). The 2020 Africa Infrastructure Development Index (AIDI) produced by the African Development Bank to monitor and evaluate the status and progress of infrastructure development across the continent, also placed Nigeria (with an index of 23.27) at the bottom of the pyramid behind 23 other African countries (Figure 1.1). Although Nigeria’s index indicates a gradual improvement since 2014, it also underscores the profound infrastructural challenges within the country.

**Figure 1.1: Africa Infrastructure Development Index (AIDI)**

		2020	2019	2018	2017	2016	2015	2014
1	Seychelles	96.73	94.97	94.32	94.11	93.93	93.71	89.57
2	Egypt	88.39	87.23	85.85	85.35	85.66	85.62	81.12
3	Libya	82.97	81.89	81.41	79.27	77.79	77.67	73.45
4	South Africa	79.34	78.43	78.53	79.63	75.52	75.90	73.81
5	Mauritius	79.12	77.50	76.79	75.49	74.08	74.28	71.21
6	Tunisia	70.57	69.30	68.98	66.97	66.26	66.20	61.89
7	Morocco	66.53	64.87	64.88	62.00	62.41	61.41	56.66
8	Algeria	57.87	57.08	55.79	54.04	53.39	52.99	49.91
9	Cabo Verde	48.88	47.96	47.96	50.43	49.43	48.96	46.20
10	Botswana	37.50	36.96	36.79	36.61	35.63	35.64	34.76
11	Gabon	31.29	31.17	30.67	28.08	27.75	27.98	26.97
12	Ghana	30.13	29.51	28.84	27.38	26.10	25.44	23.75
13	Namibia	29.98	28.96	28.65	28.64	28.80	28.74	28.27
14	Gambia, The	29.54	28.97	28.61	28.16	27.61	27.46	26.36
15	Senegal	29.22	28.30	25.97	25.26	24.71	24.59	23.07
16	eSwatini	28.21	27.11	25.76	25.43	24.63	24.70	23.40
17	Sao Tome and Principe	27.54	27.14	27.14	27.18	27.38	27.33	26.05
18	Kenya	26.09	25.92	25.60	24.93	24.37	24.00	21.85
19	Zimbabwe	25.54	24.42	24.52	24.43	24.15	24.17	23.86
20	Djibouti	24.65	23.90	24.46	24.30	23.93	23.95	23.44
21	Cote d'Ivoire	24.18	23.28	21.96	19.66	19.06	18.85	18.14
22	Comoros	24.13	23.62	23.50	22.15	22.12	22.03	21.64
23	Zambia	23.97	23.22	22.29	22.12	21.55	21.55	20.87
24	Nigeria	23.27	22.76	22.37	21.64	20.60	20.45	19.35
25	Uganda	21.97	21.17	20.62	20.18	20.00	19.81	18.61
26	Malawi	21.79	20.81	21.02	18.44	18.45	18.01	17.14

Source: African Development Bank (2020).

Over the next 10 years, Nigeria's population is expected to expand significantly from its current estimate of about 190 million people to almost 264 million. This is likely to exert profound future demand for infrastructure expansion to reduce congestion and strain on existing networks. Without drastic improvements in Nigeria's core infrastructure, the prospects for economic growth and development will be severely compromised.

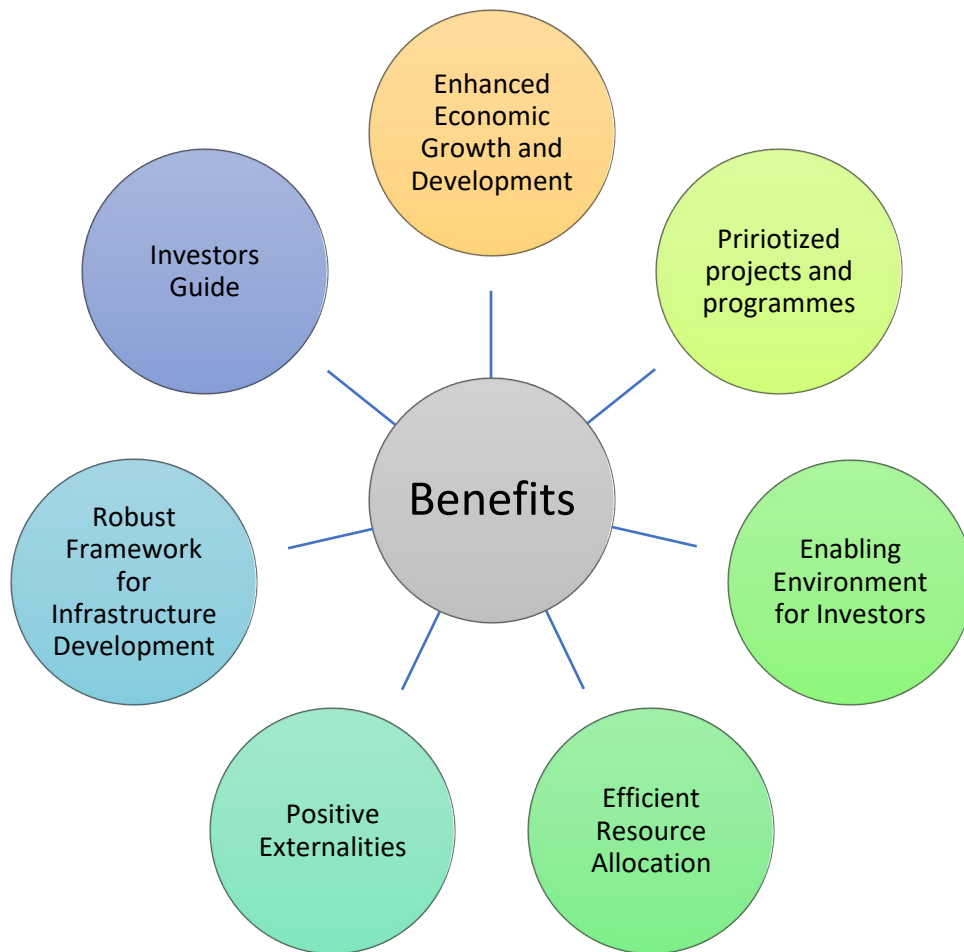
Looking forward, although the ERGP is ending in 2020, expanding the stock of Nigeria's infrastructure will remain a key objective in the government's successor development plans such as the Medium-Term National Development Plan (MTNDP) 2021-2025 and Long-Term Plan Called Nigeria Agenda 2050. However, building quality infrastructure is widely known to be expensive and takes time as well. The Global Infrastructure Hub estimated that Nigeria's cumulative infrastructure spending need between 2016 and 2040 was about US\$ 878 billion, translating to about US\$35 billion per year. It is apparent to many that the Federal Government cannot provide all the needed resources, more so as government revenue is still heavily dependent on the oil and gas sector which are vulnerable to shocks in the international energy markets. The sharp crash in oil prices between 2014 and 2016 highlighted this vulnerability that eventually pushed the economy into recession. The slump in oil prices by early 2020 to historic lows of \$14 per barrel following the outbreak of Corona Virus (COVID-19) has also significantly reduced government projected revenue leading to a downward revision of the 2020 Budget. A well-coordinated and strategic approach is required to harness sufficient resources to increase the stock of Nigeria's critical infrastructure. Besides investment by sub-national governments, the private sector is expected to play an increasing role either directly or in collaboration with the government through the public-private partnership (PPP) arrangements.

The National Integrated Infrastructure Master Plan (NIIMP) is government's strategic document which was developed in 2014 to guide Nigeria's infrastructure investment, add value to the national economy and enhance private sector participation in infrastructure development. The NIIMP was developed through an elaborate and inclusive process including the work of the Ministerial Steering Committee, eleven Technical Working Groups and Business Support Group (BSG), which provided private sector perspective and expectations. Besides, the views of International Development Partners were equally harvested. The outcome of that process was validated at national and sub-national levels.

Between 2014 to date, a lot has happened, including some important progress towards improving the quality and stock of the nation's infrastructure. A number of important reforms have also been launched across the various spectrum of infrastructure in recent years. The macroeconomic fundamentals and landscape have changed significantly, making previous estimates, targets and assumptions unrealistic. Generally, developments within the domestic and global environments necessitated the need for a revision of the Master Plan.

In this revised version, the Plan has been updated to reflect current realities and future demands through input from the Medium-Term Sector Strategies of each MDA, their mid-term reports and other relevant sector reports. However, the overall objectives and philosophy of the Plan have not changed. Like in the previous edition, this revised document provides the roadmap for building standard infrastructure that will guarantee sustainable economic growth and development. It provides an integrated view of infrastructure development in Nigeria, with clear linkages across the key sectors. The Plan also identifies and elaborates on enablers for its successful implementation. Figure 1.2 provides an overview of the expected benefits of NIIMP.

**Figure 1.2 Expected Benefits of NIIMP**



**Source:** NIIMP Review Team.

Specifically, the objectives of the NIIMP are to:

- i. Adopt a coordinated approach to infrastructure development;
- ii. Strengthen the linkages between components in the infrastructure sector and the national economy;
- iii. Preview, upgrade and harmonise existing sub-sector master plans and strategies in the infrastructure sector, to ensure consistency with national development aspirations;
- iv. Prioritise projects and programmes for implementation in the short-term to medium-term;
- v. Promote private sector participation in infrastructure development;
- vi. Strengthen the policy, legal and institutional frameworks for effective infrastructure development; and
- vii. Enhance the performance and efficiency of the economy.

Consistent with the original version, this document covers asset classes commonly referred to as ‘core infrastructure’ (Transport, Energy, ICT and Water) and others (Agriculture, Mining, Social Infrastructure, Housing, Vital Registration and Security) called ‘non-core infrastructure’. It does not include equipment, personnel, etc. For each asset class, a definition of what is considered in scope has been developed for the Plan [Table 1.1].

**Table 1.1: Concept of Infrastructure - Definition of Scope for the NIIMP**

<b>Asset Class</b>	<b>In scope (examples)</b>	<b>Out of scope (examples)</b>
<b>Transport</b>	<ul style="list-style-type: none"> <li>• Road, Rail, Seaport and airport: include investment in building the asset (e.g. construction equipment cost)</li> </ul>	<ul style="list-style-type: none"> <li>• Asset usage equipment (e.g. buses, cars, railway wagons, aircraft, water ships)</li> </ul>
<b>Energy</b>	<ul style="list-style-type: none"> <li>• Generation, transmission and distribution (includes power equipment like BTG)</li> <li>• Refineries, oil and gas pipelines</li> </ul>	<ul style="list-style-type: none"> <li>• Generators</li> </ul>
<b>ICT</b>	<ul style="list-style-type: none"> <li>• Investment in telecom lines and transmission towers</li> </ul>	<ul style="list-style-type: none"> <li>• Equipment, including computers</li> </ul>
<b>Social Infrastructure</b>	<ul style="list-style-type: none"> <li>• Public utility buildings (schools, hospitals)</li> </ul>	<ul style="list-style-type: none"> <li>• Human capital (e.g. teachers, nurses, doctors)</li> </ul>
<b>Housing and Regional Development</b>	<ul style="list-style-type: none"> <li>• Low-income (social) housing</li> </ul>	<ul style="list-style-type: none"> <li>• Luxury housing</li> </ul>
<b>Security and Vital Registration</b>	<ul style="list-style-type: none"> <li>• Public utility buildings (police offices, barracks, fire stations)</li> </ul>	<ul style="list-style-type: none"> <li>• Asset usage equipment (e.g. police cars, tanks)</li> </ul>
<b>Agriculture, Water and Mining</b>	<ul style="list-style-type: none"> <li>• Water treatment plants, sanitation plants</li> <li>• Irrigation systems</li> <li>• Rail and waterway mining infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Asset usage equipment (e.g. tractors, mining equipment)</li> </ul>

**Source:** NIIMP (2015).

## **1.2 Structure of the Plan**

Following this introduction, the rest of this revised Master Plan is structured as follows:

Chapter 2 presents the Macroeconomic Framework underpinning the Plan. It shows the impact of infrastructural development on the Nigerian economy especially with regards to the growth of GDP and employment. It sets out the overall direction for the plan and outlines the overall investments requirements over the next 23 years.

Chapter 3 shows the sector-specific strategies for each of the asset classes (Transport, Energy, ICT, Agriculture, Water and Mining, Housing, Social Infrastructure and Vital Registration and Security). The chapter also describes the current state of infrastructure at a detailed sector level, and lays out the objectives of each sector and its infrastructure stock targets. The required infrastructure investments for each sector over the plan horizon are also indicated.

Chapter 4 articulates regional strategies. It describes the current state and economic priorities of the six geopolitical regions and how these translate into infrastructure investment targets.

Chapter 5 outlines short-term, medium-term and long-term strategies required to ramp-up infrastructure development under respective asset classes. It identifies quick-win projects to prioritise over the next five years in order to stimulate growth in the stock of infrastructure.

Chapter 6 shows the Financing Plan for the NIIMP. This includes the capacity of the Government to finance investments through current accounts or public debt, and a potential approach to increase the share of private sector investments through PPPs by creating a supportive enabling environment.

Chapter 7 deals with the plan implementation. It describes the actions required to successfully implement the Master Plan. This covers short-term and medium-term initiatives such as the required legal and regulatory changes as well as the monitoring and evaluation mechanism to track the progress of plan implementation.



## 2 Macroeconomic Framework and National Infrastructure Targets

### 2.1 Introduction

The backbone of any national economy is its stock of infrastructure. Sound transport networks and modern ports reduce transportation costs. High-capacity telecommunication networks facilitate vast and fast communication and efficient flow of information. Pipelines for oil and gas ensure constant energy supply and export, while ample generation capacity and functioning transmission and distribution networks secure disruption-free production of goods and provision of services. All these components of infrastructure also contribute significantly to the well-being of the population, the productivity of the workforce, and facilitate broader access to education and health services.

According to international benchmarks, more developed countries typically have ‘core infrastructure’ stock (roads, rail, ports, airports, power, water and ICT) equal in value to about 70.0 per cent of GDP, with power and transportation infrastructure usually accounting for at least half of the total value. With economic performance more and more closely tied to global competitiveness, building infrastructure that meets global standards has become a primary requirement for achieving ambitious growth targets. While the availability of high-quality infrastructure is expected to promote growth, a stable macroeconomic condition with revenue-based fiscal consolidation is also necessary for economic growth and investment in infrastructure.

This chapter presents the macroeconomic framework underlying the revised National Integrated Infrastructure Master Plan (NIIMP) for Nigeria, which spans 2020 to 2043. Given that business cycles and uncertainties usually characterised the evolution of economic variables, the importance of long-term projections are still debatable among economists hence the need to stress medium-term initiatives. Consequently, the NIIMP macro framework is divided into two components – the forecast horizon covering 2020 to 2030 and set targets for 2031 to 2043. The framework shows the impact of infrastructural development on the Nigerian economy, as well as the internal consistency between the real, fiscal, monetary and external sectors. To provide the background/macroeconomic context for the framework, the chapter starts with a brief review of developments in the global and domestic environments.

### 2.2. Macroeconomic Context

The macroeconomic context is derived from an eclectic framework which is not only consistent but also allows for investment in infrastructure from the private and public sectors of the Nigerian economy. The framework also allows for investment in infrastructure from multilateral and bilateral institutions

#### 2.2.1 Global environment

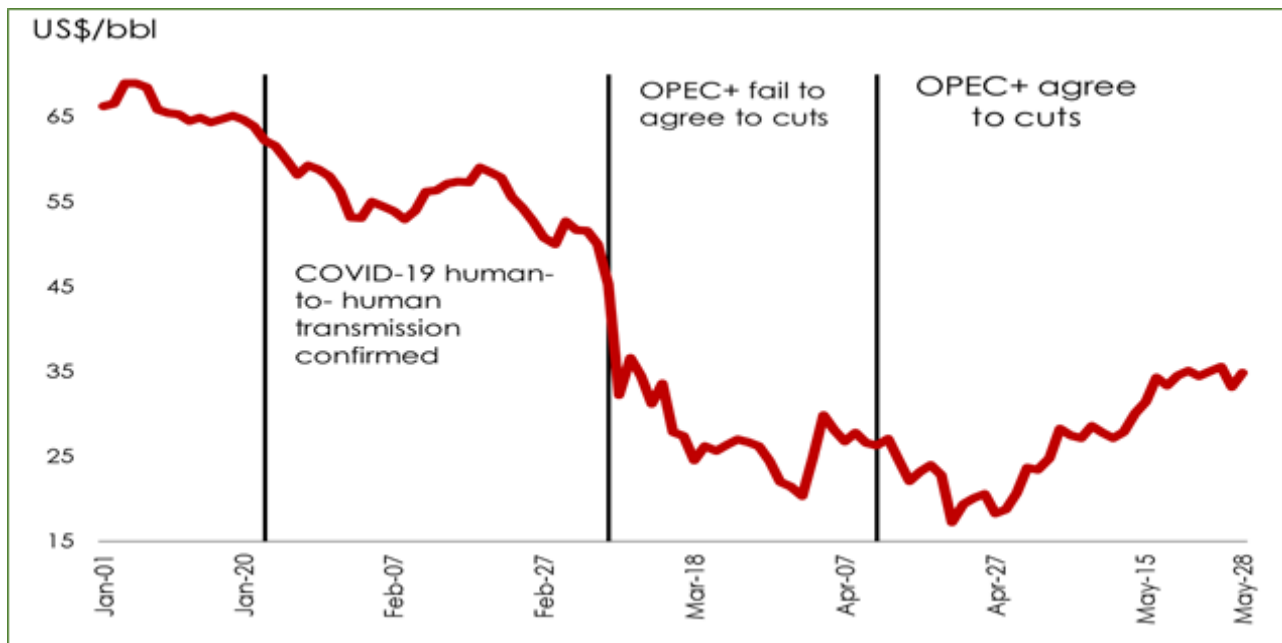
The overall medium-term outlook for the global economy remains broadly uncertain due to the outbreak and spread of the novel Coronavirus (COVID-19) pandemic that has thrown the world into

a historic crisis. As at June 14, 2020, over 7.6 million cases of COVID-19 had been reported worldwide, including 426,317 deaths. These figures are still rising by the day and may even be underreported due to limiting testing capacities in a number of countries.

Attempts to prevent further spread of the virus has seen countries shifting away from open economic systems and multilateralism to protectionist policies. They have responded by implementing several containment measures like lockdowns to limit the spread of the virus within their economy, regardless of the spill-over effects on the rest of the world. Consequently, there has been significant disruptions to global supply and demand, especially in the tourism, hospitality services, and transportation sectors.

In some parts of the world, where the economic indices were already fragile before the pandemic, the crisis further complicated their challenges. The dramatic decline in economic activities and prolong lockdowns have precipitated unprecedented collapse in oil demand, a surge in oil inventories and the steepest historic decline in oil prices (Figure 2.1). The collapse of oil price particularly in March also follows the failure of OPEC+ coalition to reach agreement on how to react to the weak oil demand outlook. A renewed OPEC+ agreement in April proved somewhat insufficient to bolster prices to its previous levels, bringing significant fiscal challenges to oil dependent economies.

**Figure 2.1: Brent Crude Oil Price (Jan-May 28, 2020)**



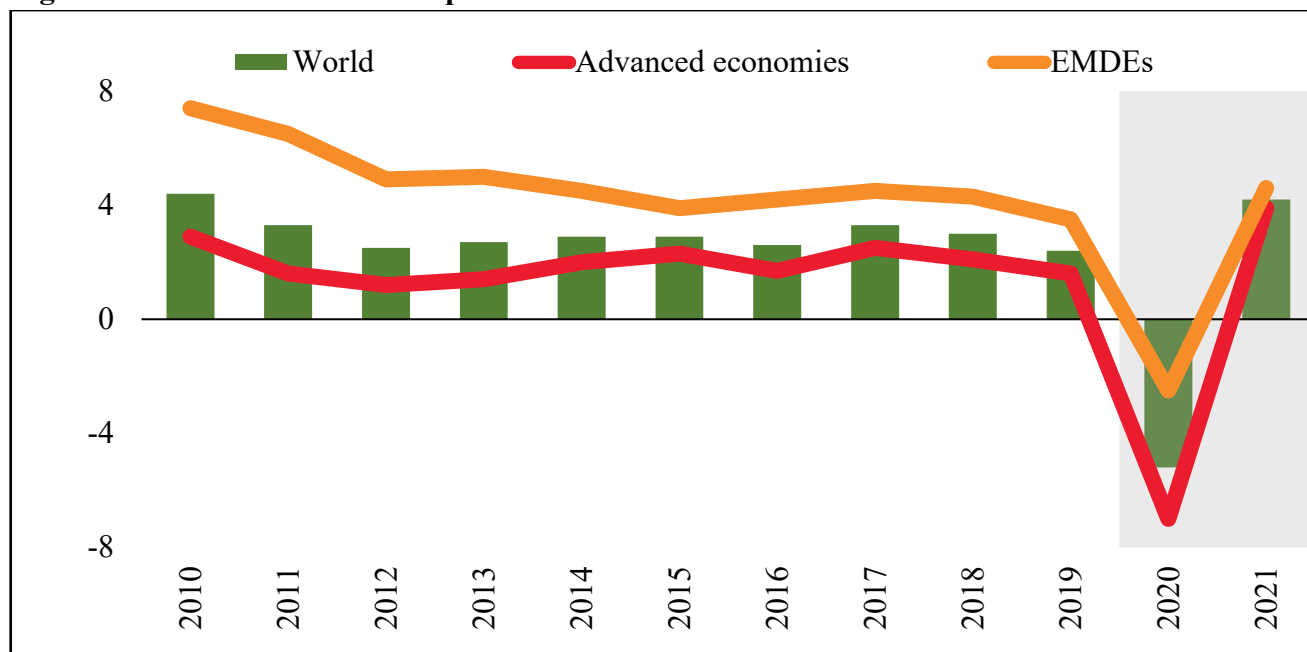
Source: Bloomberg; World Bank.

*Note: Vertical lines denote January 22, 2020; March 9, 2020; and April 13, 2020, respectively. Last observation is May 28, 2020.*

Given the uncertainties around the depth and duration of the crisis, there are concerns that the overall economic damage could turn out to be more severe than currently anticipated. Policymakers have been caught in the dilemma of easing the lockdown to revive growth prospects or maintaining it to safeguard lives. Whatever actions are taken, the signs indicate that the global economy is already at

the threshold of a deep recession in 2020, heightening fears for a surge in unemployment and poverty rates in many economies. The World Bank envisions a 5.2 per cent contraction in global growth in 2020 – worse than what was seen during the Global Financial Crisis of 2008 (Figure 2.2). Output in advanced economies as well as emerging and developing economies (EMDEs) are expected to contract sharply during the year to 7.0 per cent and 2.5 per cent respectively. However, depending on how fast the pandemic would be curtailed, the spate of unprecedented policy support across many economies is expected to bolster a recovery of global growth to 4.2 per cent in 2021.

**Figure 2.2: Global Growth Prospects**



Source: World Bank, 2020. *Global Economic Prospects*, June 2020. Washington, DC.

In Sub-Saharan Africa, output is projected to shrink by 2.8 per cent in 2020 as economic activities collapsed in the first half of the year. The effect of COVID-19 shock has been exacerbated by heightened investor risk-aversion which has spurred large capital outflows from the region and sharp currency depreciations. Inflation is expected to edge up due to these distortions while fiscal deficits are projected to deteriorate in many countries, reflecting sharp fall in revenue.

Growth in the region is however expected to rebound to 3.1 per cent in 2021 subject to substantial downside risks and uncertainties, including the assumption that the outbreak will abate by the second half of the year. A wide range of monetary and macro-prudential policies have been implemented to help support recovery of economic activities. Commodity prices are also expected to pick up to bolster growth. However, without substantial external assistance, constrained domestic fiscal space could further deepen contraction and delay expected rebound.

Indeed, the COVID-19 pandemic has left lasting scars in an already-fragile global economy through multiple channels including lower investment confidence, retreat from global trade and supply linkages, rising corporate debt in the advanced economies and public debt in some Emerging Market and Developing Economies (EMDEs) as well as escalation of unemployment and poverty. Comprehensive reform drive, stabilization of the macroeconomic environment and investment in infrastructure are needed to reduce the existing vulnerabilities, improve business confidence, support growth recovery and tackle unemployment.

Available statistics indicate that global infrastructure needs are huge. According to *World Economic Forum*, worldwide investment in infrastructure is expected to be US\$79 trillion by 2040, while the actual global investment need is closer to US\$97 trillion. This leaves an infrastructure gap of US\$18 trillion. To bridge this gap, average annual global infrastructure investment is expected to increase by around 23.0 per cent per year. When viewed in the context of anxiety-induced issues like surging demographics, rising cyber threats and terrorism, urbanisation and climate change, global demand for infrastructure remains huge.

The challenges in the global economy as a result of both the COVID-19 pandemic, the uncertainty and volatility of oil revenue have impact on the Nigerian economy which was already in stagflation before the twin crises.

### 2.2.2 Domestic environment

The Nigerian economy faces a perfect storm of both domestic shocks (health crisis, necessary but painful shutdowns to prevent spread of COVID-19) and external shocks (shrinking trade, capital outflows, falling oil prices). Most immediately, the unprecedented slump in oil price including the glut in the global oil and gas markets, has exerted profound revenue challenges to the country. Depressed global demand and glut has seen Nigeria’s reference crude, the Bonny Light crude oil price crashing from USD\$69.31 in January 3, 2020 to an extremely disappointing low of USD\$14.67 by April 27, 2020. Consequently, government revenue is expected to fall from an already low of 8.0 per cent of GDP in 2019 to a projected 5.0 per cent in 2020.

After taking steps through the ERGP to exit recession in the second quarter of 2017, the COVID-19 pandemic is fast reversing the gains. The country’s already fragile growth and other socio-economic indicators have been worsened by the necessary but anti-growth containment measures adopted. Available data from the National Bureau of Statistics (NBS) showed that annual GDP growth had declined from 2.10 per cent in Q1 2019 to 1.98 per cent in Q1 2020 (Figure 2.3). While the uncertainty over the impact of COVID-19 persists, many analysts believed that the economy may experienced significant downturn in the next quarter and heads towards another recession within the year.

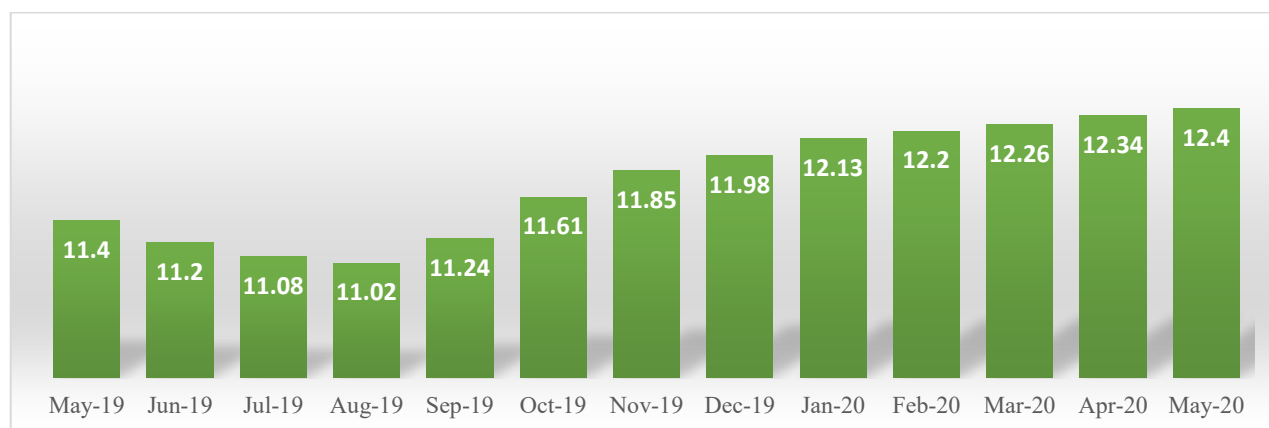
**Figure 2.3: Real GDP Growth Rate (Q1 2017-Q1 2020)**



Source: National Bureau of Statistics (NBS).

Headline inflation (year-on-year) had continued its upward trend which started since September, 2019, when the land borders protection coupled with other structural factors brought pressures on food and commodity supplies. For the ninth consecutive times, inflation rose from 12.34 per cent in April 2020 to 12.40 per cent in May 2020, far from the ERGP target of 9.90 per cent for 2020 (Figure 2.4). Current uptick was driven primarily by disruptions in food supply chains occasioned by the restrictions imposed across the country to curb the spread of the coronavirus pandemic.

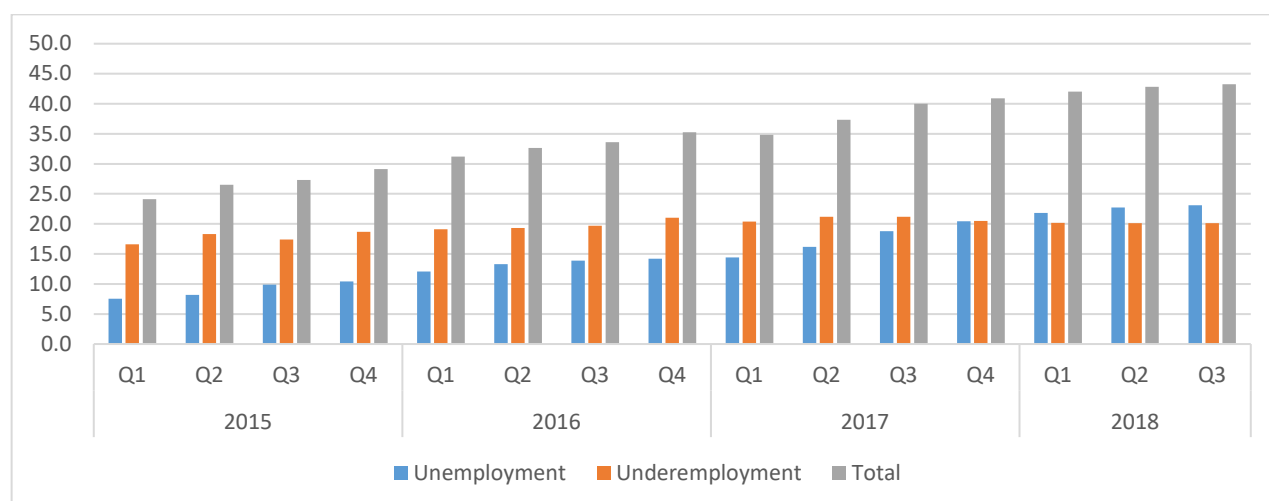
**Figure 2.4: Headline Inflation (year-on-year)**



Source: NBS.

With a high population growth rate estimated between 2.6 per cent and 3.2 per cent, Nigeria’s current growth performance is insufficient to make an impact on unemployment and poverty rates. Available data from NBS showed that unemployment remains high, increasing from 18.8 per cent (16 million) in Q3 2017 to 23.1 per cent (20.9 million) in Q3 2018. Under-employment rate, however, declined slightly from 21.2 per cent to 20.1 per cent over the same period. Overall, combined unemployment and underemployment rates increased from 40.0 per cent (34.02 million) in Q3 2017 to 43.2 per cent (39.14 million) in Q3 2018. In terms of poverty, current report by NBS indicates that 40.1 per cent or 82.9 million Nigerians (excluding those in Borno State) are poor as at 2019.

**Figure 2.5 Unemployment and Under-employment Rates in Nigeria (2015-2018)**



Source: NBS.

**Table 2.1: Poverty and Inequality Indicators in Nigeria (2019)**

	Poverty Headcount (Per cent)	Poverty Gap Index (Per cent)	Gini Coefficient
<b>Urban</b>	18	4.5	31.9
<b>Rural</b>	52.1	17.4	32.8
<b>Total</b>	40.1	12.9	35.1

Source: NBS.

In response to these concerns, government has embarked on several initiatives including provision of direct and indirect employment through the Social Investment Programme. Robust intervention in the Agricultural sector is also stimulating job creation in the sector. There are also efforts to improve the business climate and boost the employment generation capacity of the private sector. But a lot remains to be done, as the COVID-19 pandemic has far reaching implications for jobs and poverty. It has been estimated that about 10 million Nigerians could slip into poverty in 2020 due to the pandemic (AfDB, 2020).

From the monetary side, the CBN has stepped up its role as the bigger ‘fire-fighter’ in an economic crisis by providing strategic liquidity backstops in an attempt to safeguard the health of the economy and the financial system. Interest rate on all applicable CBN interventions had been reduced from 9.0 per cent to 5.0 per cent while additional one-year moratorium period has been granted for all CBN intervention loans. The Bank also created a ₦50 billion targeted credit facility (for households and SMEs) and injected about ₦3.6 trillion into the banking system, including ₦100 billion to support the health sector, ₦2.0 trillion to the manufacturing sector, and ₦1.5 trillion to affected industries in the real sector.

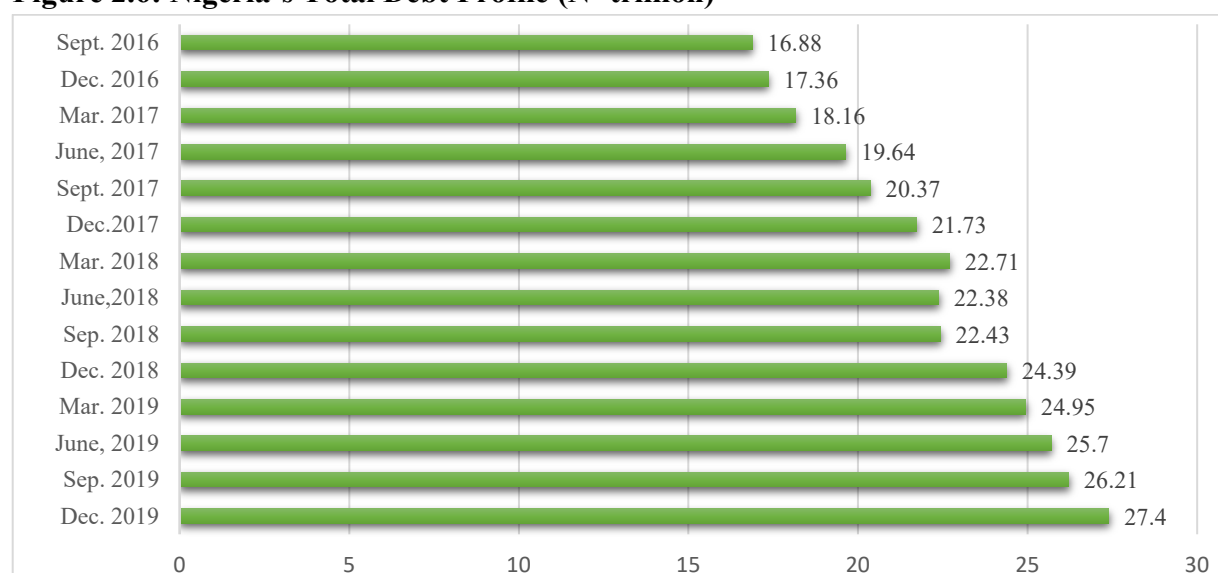
Regulatory forbearance has also been introduced to restructure loans in impacted sectors. The apex bank is also coordinating a private sector intervention initiative targeting N120 billion to fight the pandemic. Furthermore, the Bank had reduced the Monetary Policy Rate (MPR) from 13.5 per cent to 12.5 per cent by late May, 2020 to support the recovery of output and avert a recession.

On the external front, there has been significant threat to capital flows, external reserves position and exchange rate stability as a result of the slump in oil prices and uncertainties induced by the pandemic. While the external reserves have experienced downward trend, the CBN had adjusted the official exchange rate upward by 15.0 percent and attempt a unification of the various rates under the investors and exporters (I&E) window, Bureau de Change, and retail and wholesale windows. However, demand pressures across the various segments of the market have continue to introduce volatility in the rates.

The country’s Debt Stock (Federal and States) as at December 2019 stood at ₦27.40 trillion up from ₦24.39 trillion as at December 2018 (Figure 2.4). This leaves the Debt/GDP ratio at 18.81 per cent, although well below the 25.0 per cent limit. A remarkable feature of Nigeria’s debt stock was the introduction of project-tied financing products (Sukuk and Green Bonds) in the second half of 2017. However, with recent challenges in oil prices and disruption of economic activities, the Federal Governments has lost massive projected revenue, particularly for 2020. It should be noted that the

debt/Revenue ratio indicates the need to borrow without tears. The COVID-19 pandemic has magnified existing debt vulnerabilities due to widening financing needs. It is therefore important to deal with the challenge of low revenue which is highlighted by the country's high debt-service to revenue ratio. While this ratio has improved from 99.0 per cent as at end of March 2020 to 72.0 per cent by May 2020, it remains higher than desirable and undermines government ability to inject sufficient resources to infrastructure development.

**Figure 2.6: Nigeria's Total Debt Profile (₦ trillion)**



Source: Debt Management Office (DMO).

While the overall long-term impact of the COVID-19 pandemic is still uncertain, the effectiveness of government response is critical to determine the speed, quality and sustainability of Nigeria's economic recovery and competitiveness. The crisis presents great opportunities to build a strong and resilient economy, especially by fixing the infrastructural challenges. Increasing investment in critical infrastructure would fast-track growth recovery and sustainability as well as generate employment.

In recent years, the Federal Government has made moderate progress in delivering infrastructure such as improved budgetary allocation, completion of the Abuja to Kaduna rail line, tangible progress on development of the 2nd Niger Bridge and commencement of the Mambila Hydropower Project, which had stalled for over 30 years. Government has also designed various incentives as well as special purpose vehicles (SPVs) to attract private sector investment to deliver on this objective.

Current trend showed that Federal Government actual investment in infrastructure between 2009 and 2018 stood at ₦5.99 trillion. This represents 72.0 per cent of the budgeted amount over the 10-year period. Further breakdown indicates that the bulk of the investment was on transportation infrastructure (37.4 per cent) followed by Vital Registration and Security (21.5 per cent) and Agriculture, Water & Mining (15.8 per cent), Social Infrastructure (12.3 per cent) and Energy (10.8 per cent).

**Table 2.2: Summary of Federal Government Infrastructure Expenditure per Asset Class in (₦) Billion, 2009-2018**

Asset Class	Budget	Actual	Percentage (per cent)
Vital Registration and Security	1,522.20	1,289.15	21.49
Housing	175.59	97.70	1.63
Social Infrastructure	1,013.38	740.39	12.34
Energy	918.16	649.40	10.83
Agriculture, Water, Mining	1,347.49	945.11	15.76
Transport	3,355.75	2,243.29	37.40
ICT	45.76	32.83	0.55
<b>TOTAL</b>	<b>8,378.33</b>	<b>5,997.85</b>	<b>100.00</b>

Source: FG Budget Implementation Reports 2009 to 2018, Budget Office of the Federation.

However, in spite of these efforts, the country’s stock of infrastructure as a percentage of GDP remains lower than the international benchmark of 70.0 per cent. Previous estimates indicate that Nigeria’s core stock of infrastructure was 35.0 per cent of GDP as at 2015, lower than other comparator countries (Figure 2.7). However, current estimate suggest that the country’s infrastructure stock has improved to 40 per cent of GDP. In spite of this, if “non-core infrastructure” (social housing, security, mining, agriculture) is included, the gap still remains wider.

**Figure 2.7: Infrastructure stock in selected countries (% of GDP), 2016**

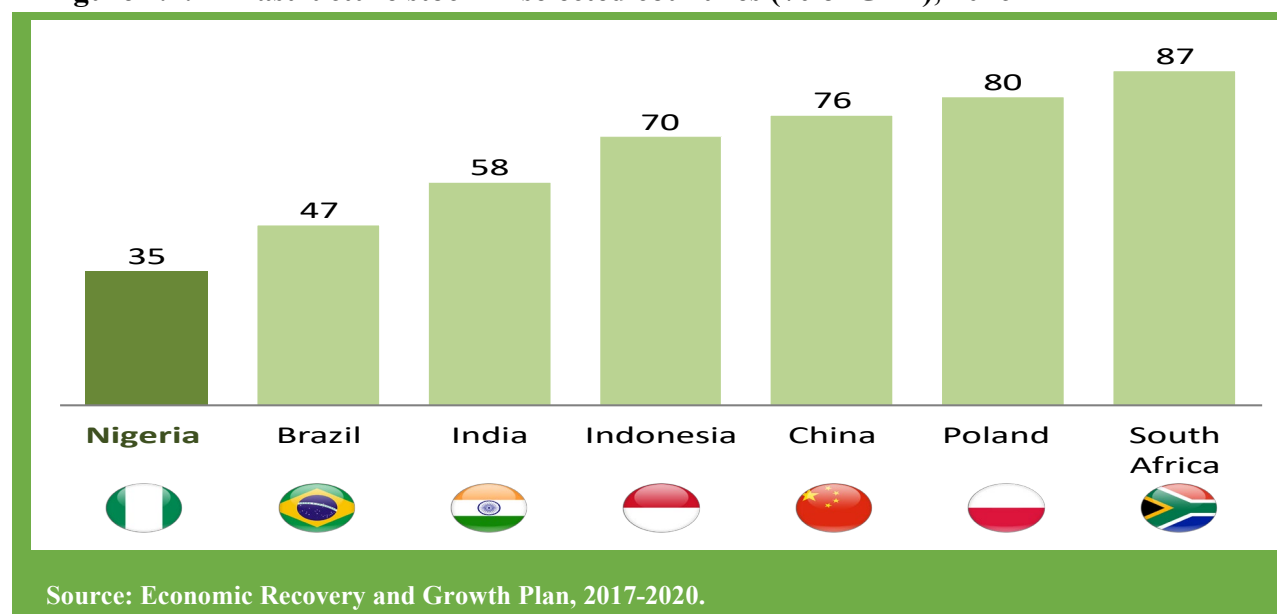
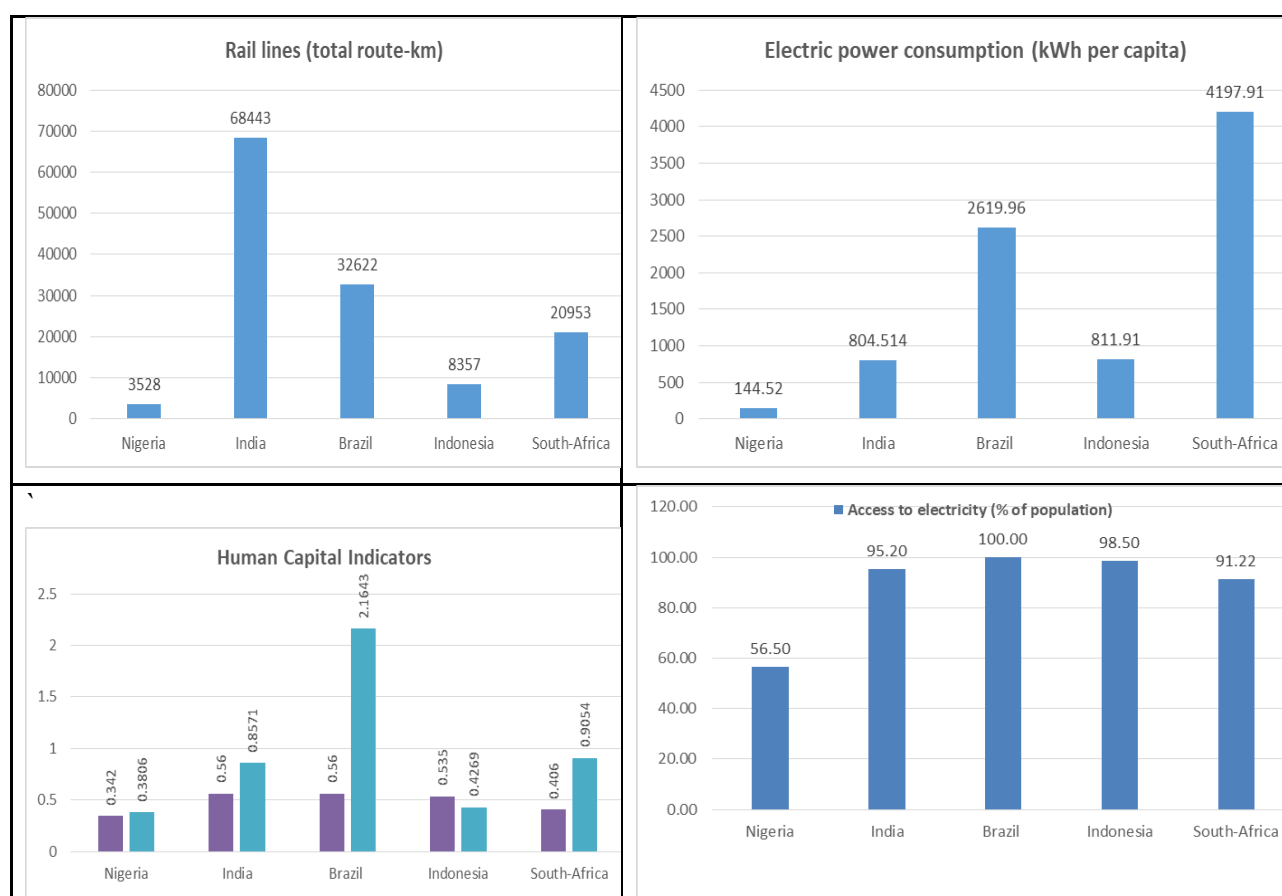


Table 2.3 shows that Nigeria is doing well in road connectivity at 77.5 of 100 and very poor on exposure to unsafe water which stood at 75.6 per cent of the population as at 2018. According to the 2019 Global Health Security Index, Nigeria ranked 96 among 195 countries surveyed, reflecting the poor state of the country’s health sector. As shown in Figure 2.8, Nigeria’s human capital index (0.342) compares poorly with other comparator countries like South-Africa (0.406), India (0.56), Brazil (0.56) and Indonesia (0.535). Effect of weak infrastructure is most striking in the energy



sector – the country’s per capita electric power consumption of 144.52 kWh is lower than that of Brazil (2619.96 kWh) and South-Africa (2619.96). Proportion of the population with access to electricity stood at 56.50 per cent compared to over 90.0 per cent in the selected comparator countries. Other indicators like the rail lines are far less than adequate and compare poorly with other countries in the sample.

**Figure 2.8: Infrastructure stock: Nigeria and Comparator Countries (as at 2018)**



Source: World Development Indicators, 2019.

**Table 2.3: Nigeria Infrastructure Statistics, 2018.**

Quality of Infrastructure (1-100)	39.7
Infrastructure Gap (% of GDP)	1.2
Infrastructure Investment (% of GDP)	4.0
Quality of Road Infrastructure (1-7)	2.5
Efficiency of Train Services (1-7)	1.8
Efficiency of Air Services (1-7)	3.4
Efficiency of Seaport Services (1-7)	2.5
Electricity Access (% of Population)	59.8
Quall of Elect Supply (% of Output Loss)	15.0
Reliability of Water Supply (1-7)	2.1
Exposure to Unsafe Water (% of Pop)	75.6
Ratio of Urbanisation (% of Pop)	50.0

Road Connectivity (0-100)	77.5
Digital Adoption Index (0-1)	0.4
Mobile Broadband Subscription (per 100)	30.7

Source: Global Infrastructure Hub 2018.

Given the current realities and cash position of the Nigerian government, developing Nigeria's infrastructure will require significant private sector funding, strong collaborations between government and the private sector, and a medium to long term view on the benefits and economic returns on investments to the country.

Government had unveiled an Economic Sustainability Plan (ESP) as a short-term measure to mitigate the impact of the pandemic on the economy while the development of a successor plan to the ERGP is underway. While the Federal Executive Council had approved the sum of N2.3 trillion for the implementation of the ESP, the IMF had approved the country's request for emergency financial assistance of US\$3.4 billion to help limit the decline in external reserves and support the implementation of critical infrastructural projects in the 2020 Budget.

To prepare for a post-COVID-19 economy and increase the resilience of the country against future shocks, Nigeria has to address the structural bottlenecks that make the country more vulnerable. Accelerating structural reforms to increase the country's productive base will also require addressing obstacles in the business environment, particularly ensuring macroeconomic stability and building the stock of infrastructure, including the healthcare system.

## 2.3. Macroeconomic Framework

### 2.3.1. Basic Assumptions and Scenario Analysis

The projections are guided by the current state of the Nigerian economy as at Q1 2020 and the assumption that the COVID-19 pandemic will be contained by Q3 2020. The current stock of Nigeria's infrastructure is estimated at 40.0 per cent of GDP, with the target of raising it to 70.0 per cent in 2043. The expected infrastructure investment across the asset classes are weighted as shown in Table 2.4.

**Table 2.4: Expenditure Allocation across the Asset Classes**

Sector	Percentage
Energy	33
Transport	25
Agriculture, Water and Mining	13
Housing	11
ICT	11
Social Infrastructure	5
Vital Registration & Security	2

Source: MFBNP.

Three possible scenarios on future path of infrastructural investment and macroeconomic dynamics have been considered – Baseline, Conservative and Optimistic. Each scenario has different

implications for the economy, particularly in terms of growth, unemployment and poverty reduction as well as global competitiveness.

- a) **Baseline Scenario:** Under this scenario, investment in infrastructure is assumed to follow the pattern in the previous year. Thus, public sector investment in infrastructure is expected to increase by the average growth rate of 2019. Projections under this scenario indicates that Real GDP would grow by 4.19 per cent on the average over the period 2020-2030, with a contraction of 0.17 per cent in 2020. Unemployment rate would average 24.18 per cent. With a sluggish GDP growth path in the face of a growing population, per capita income will remain low while the country would continue to lag behind her peers in the global infrastructure competitiveness index.
- b) **Optimistic Scenario:** This scenario assumes an accelerated development path targeting faster Real GDP growth along the lines proposed during the initial development of the NIIMP document in 2012. This will require an aggressive ramp-up of infrastructure investment by an average of ₦36 trillion (US\$ 100 billion) per year. Real GDP is projected to recover from a contraction of 0.43 per cent in 2020 to 4.87 per cent in 2021 and peaking at 11.13 per cent in 2030. This will generate considerable reduction in unemployment rate to an average of 5.95 per cent over the period. To deliver on these, it is also assumed that Government will be able to secure fundamental external support to bridge the widening fiscal deficit or financing gap while the epidemiological path of COVID-19 pandemic would be flattened earlier than expected to restore macroeconomic stability. Oil prices are expected to recover to at least US\$70 per barrel. Implementation of robust structural reforms to diversify the economy from crude oil over-dependence over the medium term, is also assumed.
- c) **Conservative Scenario:** This scenario takes a conservative approach and considers the prevailing realities of the Nigerian economy, particularly the uncertainties arising from the COVID-19 pandemic, with oil price assumed to hover around US\$40 per barrel. However, government is expected to undertake critical reforms in rationalizing its fiscal strategies towards reducing excessive recurrent spending in favor of capital investment. Consequently, public investment in infrastructural development is assumed at ₦3.6 trillion (US\$ 10 billion) per year distributed equally over the forecast horizon. This represents 10.0 per cent of the value estimated earlier in the Master Plan. Following this path, Real GDP would decline by -0.19 per cent but rebound to 3.85 per cent by 2021 and 10.68 per cent by 2030. Overall, an average Real GDP of 6.22 per cent is estimated over the forecast period. Unemployment rate is expected to average 19.89 per cent for the period 2022-2030. This is still higher than desired in view of the expected surge in jobs losses due to the dislocations of economic activities by COVID-19 pandemic. A re-doubling of investment in infrastructure above current estimate may be required to bring significant impact on employment creation.

The dynamics of key macroeconomic outcomes under the three scenarios are summarized in Table 2.5.

**Table 2.5: Selected Macroeconomic Indicators under Different Scenarios**

	2019	2020	2021	2022-2030
<b>Scenario I: Baseline</b>				
Real GDP growth	2.26	-0.17	2.87	5.03
Unemployment Rate	23.2	25.52	22.05	24.76
<b>Scenario II: Optimistic</b>				
Real GDP growth	2.26	-0.43	4.87	8.48
Unemployment Rate	23.2	22.68	16.65	3.40
<b>Scenario III: Conservative</b>				
Real GDP growth	2.26	-0.19	3.85	7.64
Unemployment Rate	23.22	24.86	20.80	19.89

Source: MFBNP, NBS, AND CBN.

The macroeconomic forecast for the revised Master Plan is based on the conservative path, which takes due account of current fiscal realities, impact of COVID-19 pandemic, prospects and other structural concerns. Table 2.6 presents the key projections of under this scenario.

**Table 2.6: Macroeconomic Projections of Key Indicators (2020-2030)**

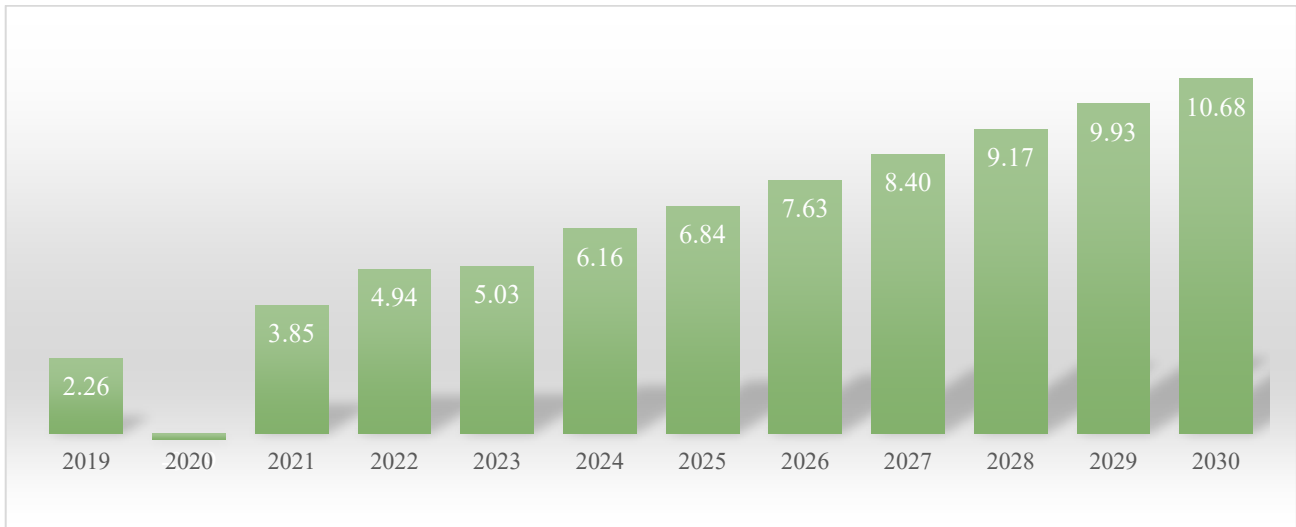
SELECTED ECONOMIC INDICATORS (In per cent of GDP, unless otherwise stated)												
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>REAL</b>												
Real GDP Growth Rate (%)	2.26	-0.19	3.85	4.94	5.03	6.16	6.84	7.63	8.40	9.17	9.93	10.68
<b>Sectoral Growth Rates:</b>												
Agriculture, Water and Mining	2.38	2.13	1.99	1.89	1.78	1.64	1.51	1.38	1.24	1.11	0.97	0.84
Energy	4.16	13.36	9.31	11.61	9.07	10.45	9.73	10.07	9.91	9.98	9.95	9.96
ICT	9.22	23.03	13.04	13.87	15.58	16.35	16.43	16.36	16.31	16.30	16.30	16.31
Transport	11.24	4.49	6.07	8.71	7.11	7.04	7.39	7.34	7.27	7.29	7.31	7.30
Social	0.69	7.66	10.01	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03	10.03
Housing	-2.17	-5.79	-3.52	-0.83	1.37	3.04	4.31	5.28	6.02	6.58	7.01	7.33
Headline Inflation (%)	11.98	13.80	12.02	10.47	9.48	8.66	7.97	7.38	6.87	6.43	6.04	5.70
Oil Price Benchmark (US\$)	60.00	28.00	35.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Oil Production (mbpd)	2.30	1.80	1.93	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22
Unemployment Rate (%)	21.01	20.36	20.80	20.84	20.67	20.46	20.23	19.96	19.68	19.38	19.07	18.75
<b>FISCAL</b>												
Revenue	7.00	6.85	8.46	10.35	10.80	12.60	14.42	16.12	18.43	20.92	23.69	26.93
Expenditure	10.95	14.15	14.19	14.86	15.32	15.73	16.28	16.79	17.31	17.87	18.43	19.02
Non-debt Recurrent	5.83	6.63	6.43	6.60	6.86	6.94	7.12	7.30	7.45	7.63	7.81	7.99
Capital	3.35	3.25	2.95	2.85	2.50	2.29	2.10	1.90	1.74	1.58	1.44	1.31
Debt Service	1.76	3.61	4.21	4.71	5.55	6.40	7.37	8.56	9.89	11.43	13.23	15.29
Primary Balance	-2.21	-3.06	-0.75	1.02	1.02	3.27	5.50	7.89	11.01	14.48	18.48	23.21
Overall Balance	-3.97	-6.66	-4.96	-3.69	-4.52	-3.13	-1.86	-0.67	1.12	3.05	5.25	7.91
Financing:												
Domestic	0.08	2.95	2.01	1.52	2.11	1.99	2.05	2.30	2.37	2.51	2.69	2.83
Foreign	3.89	2.67	2.01	1.52	2.02	1.91	1.93	2.11	2.15	2.23	2.35	2.43
Divesture/Privatisation/Ot	0.41	1.05	0.93	0.65	0.89	0.88	0.90	1.02	1.07	1.14	1.24	1.32
<b>EXTERNAL</b>												
Exchange Rate	305	360	360	360	360	360	360	380	380	380	380	380
Exports	29.53	29.42	29.51	29.35	29.22	28.99	28.56	28.04	27.36	26.58	25.70	24.73
Imports	5.04	4.20	3.60	3.10	2.60	2.21	1.85	1.55	1.30	1.07	0.89	0.73
Trade balance	24.49	25.22	25.91	26.25	26.62	26.78	26.71	26.48	26.07	25.50	24.82	24.00
<b>MONETARY</b>												
Broad Money (M3)	24.10	46.83	46.18	45.53	45.14	44.30	43.23	42.01	40.64	39.14	37.49	35.73
Net Domestic Credit	25.04	38.71	38.17	37.63	37.32	36.62	35.73	34.72	33.60	32.35	30.99	29.53
Government	6.75	6.35	6.10	6.19	6.03	5.95	5.79	5.65	5.45	5.25	5.03	4.80
Private	18.29	32.36	32.07	31.44	31.28	30.67	29.94	29.07	28.15	27.10	25.96	24.74
Income Velocity (M3)	4.10	2.14	2.17	2.20	2.22	2.26	2.31	2.38	2.46	2.56	2.67	2.80
Monetary Policy Rate	13.50	12.50	12.50	12.50	12.50	12.00	12.00	11.50	11.50	11.00	11.00	11.00

Sources: MFBNP, NBS, and CBN.

### 2.3.2. Real Sector

Real GDP growth is expected to contract by 0.19 per cent in 2020 as a consequence of the COVID-19 pandemic. However, a rebound is expected in 2021, reflecting the effects of the various fiscal and monetary stimuli, and in particular the implementation of the NIIMP. Moreover, with the gradual recovery of oil price, exchange rate stability, re-opening of major economies and trading routes, Nigeria is expected to register 10.68 per cent real output growth in the next ten years, with an average of 7.64 per cent over the forecast period. Oil production is expected to stabilise on the back of sustained peace in the Niger Delta, while oil price is expected to hover above the conservative benchmark of US\$40 per barrel used in the forecast.

**Figure 2.9: Real GDP Growth Rates (2019-2030)**

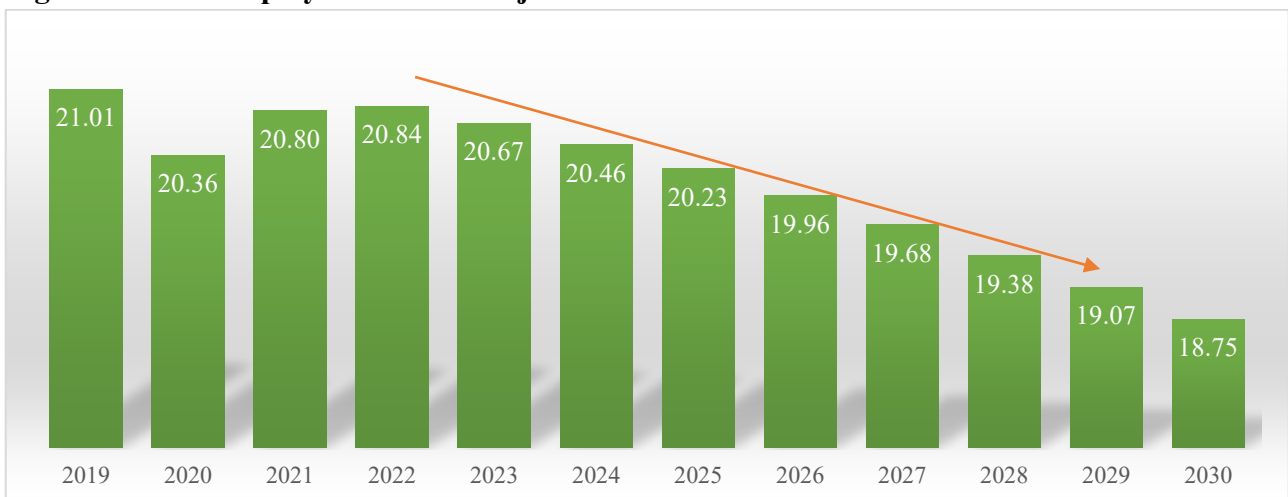


Source: MFBNP, CBN and NBS Projection.

While the oil and gas sector will continue to be significant in the growth dynamics, growth is also expected to be driven, largely, by public and private investment in core infrastructure. At the sectoral level, ICT, housing, social sector, transport, and energy are expected to be key drivers of growth. Efforts to continuously improve the ease of doing business will boost manufacturing sector activities, including light manufacturing. An increase in non-oil revenue through the implementation of the reforms in the new Finance Act is also expected over the plan horizon. Accommodative monetary policy as well as CBN interventions in growth-stimulating sub-sectors will also be central in overall GDP growth.

Significant improvement in infrastructural stock and removal of other structural constraints, particularly factors that affect domestic food prices are expected to drive down inflation from 13.80 per cent in 2020 to 12.02 per cent in 2021 and further to 5.07 per cent by 2030. Overall, the expansion of the economy through significant investment in infrastructure will lead to employment creation, especially in the ICT and Housing sectors. It is projected that unemployment will reduce to 18.75 per cent by 2030 (Figure 2.10).

**Figure 2.10: Unemployment Rate Projections**



Sources: MFBNP, CBN and NBS.

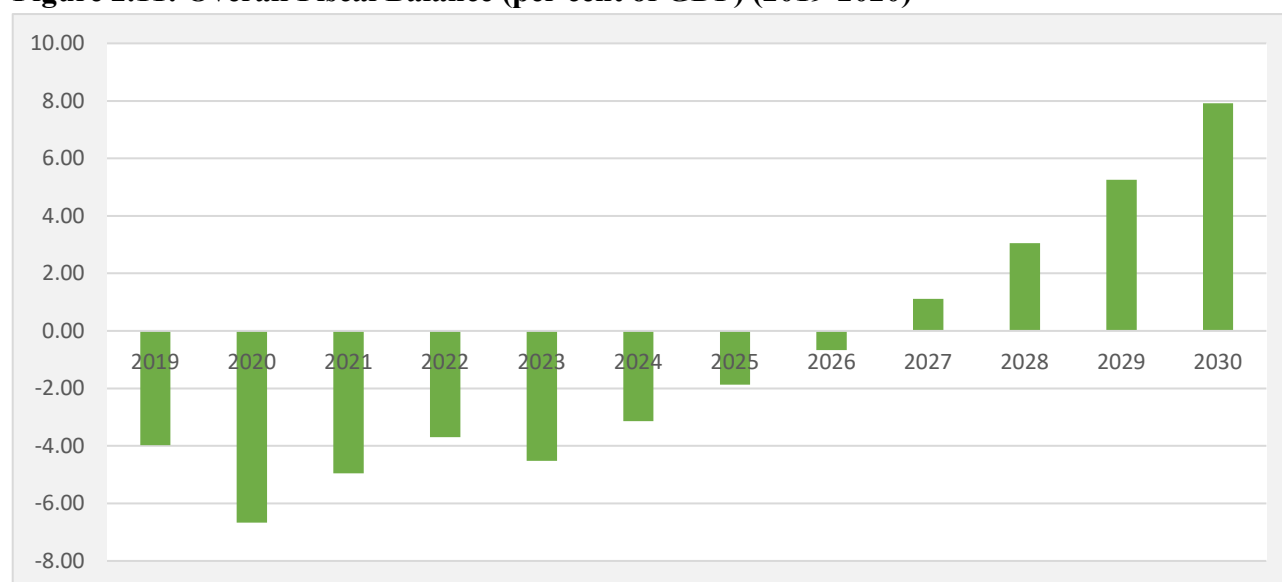
### 2.3.3. Fiscal Sector

Efforts to contain the COVID-19 pandemic and revive output growth to starve off recession is expected to trigger expansionary fiscal policy response amidst worsening fiscal positions. Consequently, fiscal deficit is projected to widen significantly from 3.97 per cent of GDP in 2019 to 6.66 per cent in 2020. The widening fiscal deficits is also explained by deterioration of government revenue, particularly from the oil and gas sector.

However, with the expected recovery of the economy in 2021, and progress in domestic revenue mobilization following the implementation of the new Finance Act, diversification of the economy, and other public sector reforms, fiscal deficit is expected to narrow over time.

Government revenue to GDP ratio is projected to remain volatile and subject to COVID-19 shock for most part of 2020. This is expected to shrink from 7.0 per cent in 2019 to 6.85 per cent in 2020, before picking up from 2021 as the economic conditions improve. Expectedly, the COVID-19 pandemic will further exacerbate the country's debt vulnerabilities. The changing composition of the nation's debt portfolio towards foreign currency denominated and commercial debt such as Eurobonds, makes it riskier than before, leading to expected surge in debt service to GDP ratio from 1.76 per cent in 2019 to 3.61 per cent in 2020 and thereafter to 11.43 per cent in 2030. The burden of higher debt service obligations imply that government is faced with difficulties in channelling available resources to cushion the effect of the COVID-19 pandemic. Freeing the fiscal space for appropriate response will require debt service relief as well as commensurate support from international development partners.

**Figure 2.11: Overall Fiscal Balance (per cent of GDP) (2019-2020)**



Sources: FMFBNP, CBN, and NBS.

### 2.3.4. The External Sector

With diminished prospects for 2020 due to global headwinds and domestic imbalances, the external sector faces significant threats in the short term. Pressures are weighing on external reserves and exchange rates, while exports and import flows have been disrupted. However, with the stabilising measures by the Central Bank of Nigeria, and the assumption that the COVID-19 pandemic would not last beyond Q3 2020, the performance of the external sector is expected to pick up gradually.

Marginal growth in exports are expected to increase over the medium term as the economy recovers from the shock of the pandemic. On the other hand, growth in imports is assumed to remain muted in the short-term due to border protection and exchange rate depreciation effects. The outlook in the near-term, would be reinforced by the Government initiatives towards the diversification of the export base, including the various interventions in the agricultural value chains.

### **2.3.5. Monetary Sector**

Monetary aggregates are expected to be accommodative over the time path. Furthermore, monetary policy stance is expected to be less restrictive going into the future, however, non-inflationary as indicated by the gradual decline in the policy rate over the horizon. In addition, the credit expansion initiative of the monetary authority through the increase in loan-to-deposit ratio from 60.0 per cent to 65.0 per cent, as expressed in its 5-Year Policy Thrust would facilitate domestic investment.

### **2.3.6. Downside Risks to Macroeconomic Projections**

The macroeconomic framework underlying this document is subject to several downside risks and uncertainties, both within the local environment and the global economy. Some of them include:

- (i) Uncertainties about the duration of the COVID-19 pandemic and the price of oil in the international market. A prolonged disruption of economic activities by COVID-19 and any further negative shock to oil prices would significantly reduce growth projections and worsen external sector positions. To mitigate this risk, conservative oil price benchmark of US\$28, US\$35 and US\$40 per barrel are used in the framework for 2020, 2021 and 2022-30 projections, respectively. Government is also expected to build fiscal buffers when oil price rises over the underlying benchmark.
- (ii) Exchange rate risks could pose considerable challenges to realising the projections shown in the framework. Given that over 80.0 per cent of Nigeria's foreign exchange earnings emanate from crude oil production, any prolonged oil price shock below the benchmark, will lead to a steep depreciation of the Naira against the US Dollar. This in effect, will constrain businesses given the reliance on imports of capital goods and other production inputs. It is expected that the Central Bank of Nigeria (CBN), as it has done in the past, will continue to mitigate such future risks by building up enough external reserves as well as effectively manage the demand for forex through pragmatic and proactive approach as dictated by both domestic and global developments.
- (iii) The rebalancing in the debt management strategy towards external borrowing implies an increase in exposure to foreign exchange risk as debt service obligations rise. This risk is however being addressed by favouring borrowing at concessional rates under long-term borrowing arrangements.
- (iv) Risk of domestic oil production shock in an event of any resurgence of hostilities in the Niger-Delta. A twin track approach of dialogue with key stakeholders in the region and deployment of military forces in the event of major security threats, are expected to mitigate this risk. At present, Nigeria's oil production is below target. It is also expected that when the Petroleum Industry Bills is signed into law, deferred investments in the industry would materialise and



result in increased production. Efforts to clean up polluted communities in the Niger Delta region will also contribute to production increases. Overall, no major disequilibrium in production is expected in the medium-term.

- (v) Global economy is characterised by uncertainties. Possible slowdown in the world economy than currently anticipated could affect the country's momentum in achieving the target GDP growth, especially through dampening exports growth. To mitigate these risks, government current development strategy is to balance an outward-looking export-led growth strategy with policies and programmes designed to take advantage of Nigeria's potentials by stimulating domestic economic activity to address domestic demand.
- (vi) Upsurge in terrorism and other security threats could cause a drag to growth from its projected path by discouraging capital flows and investment into the country. To mitigate this potential risk, Government would continue to increase funding to upscale the security infrastructure in the country as well as improve the vital registration facilities nationwide.

## **2.4. National Aspirations, Infrastructure Targets and Investments (2020-2043)**

### **2.4.1. Required Infrastructure Investment**

Nigeria is ranked among the fastest growing population in the world. According to United Nations estimates, the population of Nigeria will rise to 411 million by 2050, making Nigeria the third most populous nation on earth, behind only China and India. A rising population suggests an increasing need for infrastructure to cater for the population. Therefore, infrastructural needs of Nigeria are linked to both economic and population or demographic variables behaviour. As the economy develops and population grows, there will be need for more infrastructure stock in the areas of Roads, Airports, Seaports, Water, Railways, Power and Telecommunications to support businesses and human activities.

While building and maintaining national infrastructure is capital intensive and comes with a huge cost, it requires substantial and sustainable investments in the identified infrastructure sectors to increase Nigeria's competitive strength and comparative advantage. With economic performance more and more closely tied to global competitiveness, investing in the building and maintaining of core infrastructure that meets global standards in line with the seven core infrastructure sectors, is a necessary requirement for achieving ambitious economic growth target.

The end target of the Plan is to achieve annual GDP of at least US\$2.7 trillion by 2043 and accelerate the country's stock of core infrastructure to 70.0 per cent of GDP. In order to close its current infrastructure gap and reach the desired national targets and aspirations, Nigeria must aggressively increase infrastructure spending as a percentage of GDP. Spending would need to ramp up fairly quickly over the 23-year period. Given Nigeria's high GDP growth projected for the period, such ramp-up is particularly challenging.

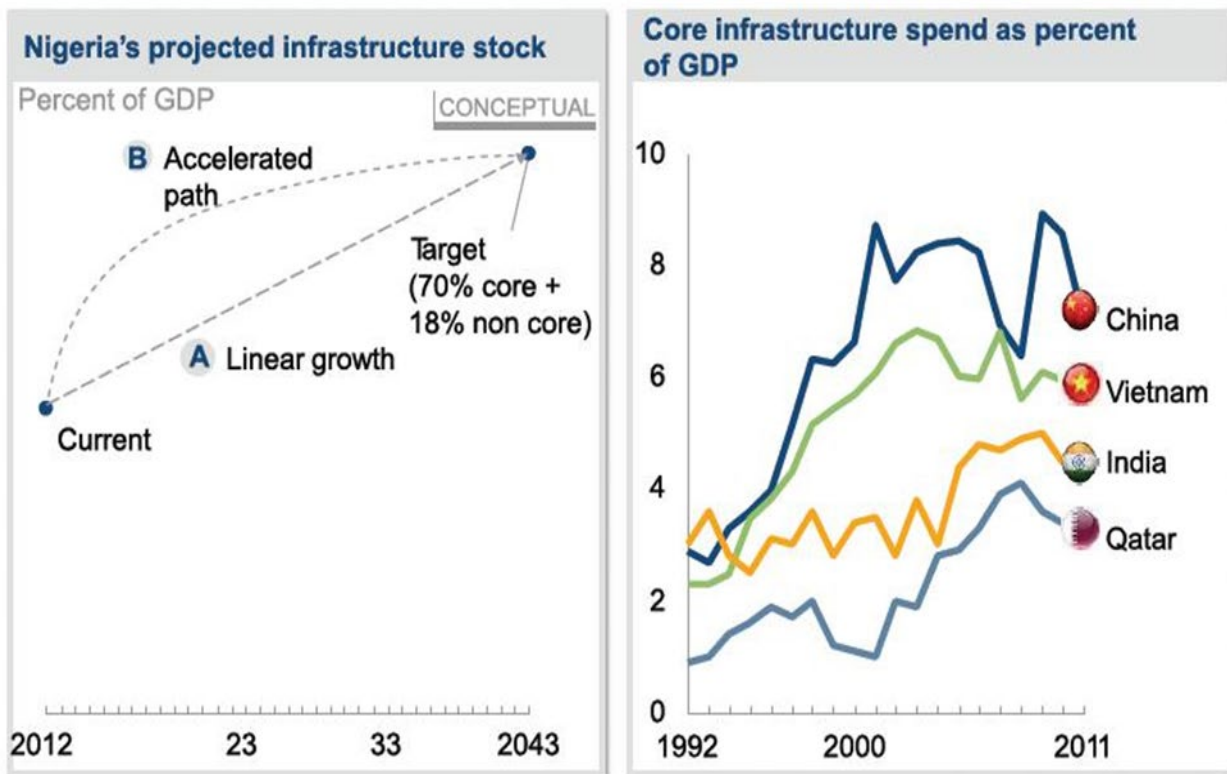
Moreover, maintenance costs will grow significantly, as infrastructure stock increases. According to global benchmarks, maintenance spend should amount to about 2.0 percent of GDP, which translates

into a total of about USD 644 billion from 2020 to 2043, or USD 28 billion per year. This is more than double the current yearly total expenditure on infrastructure in Nigeria.

To fund the infrastructure needs of its growing economy over the next 23 years, Nigeria would need to spend about USD 2.3 trillion. This investment would allow Nigeria to close its infrastructure gap both in core asset classes (bringing it to the desired 70.0 per cent of GDP level) and in other key asset classes. Over the next ten years of the plan, this would require US\$100 billion in investments on annual basis.

The initial edition of the Plan envisaged such an aggressive and ambitious scenario in which Nigeria accelerates spending very quickly to achieve the national targets (see Figure 2.12). An accelerated development path offers early momentum and faster time to impact in terms of economic and social development. Based on this path, funding needs in the first 5-10 years was estimated to be very high, and building the required local capabilities was expected to prove a huge challenge. Following this path, the country was expected to invest about US\$33 billion in the first five years of the Plan (2014-18 and then growing to US\$ 170 billion per year for the last five years (2039-43).

**Figure 2.12: Ramp-up Paths for Infrastructure Spending**

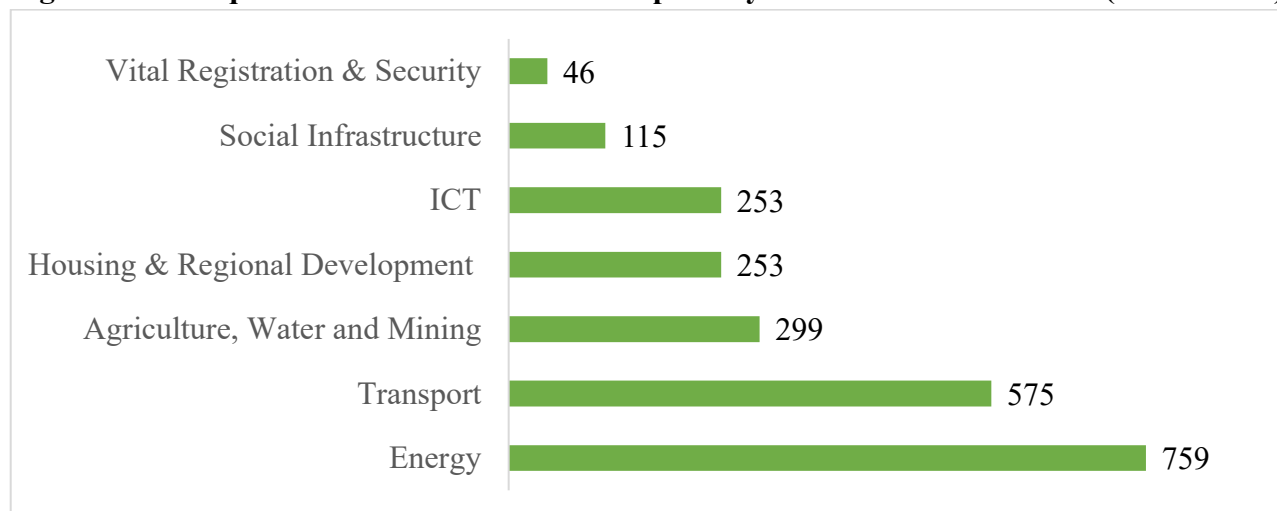


Source: NIIMP (2015:16).

However, fiscal realities and developments in the economy have proved that such path was overly ambitious and unrealistic. Within this context, this revised plan considers what is more realistic, but a slower ramp-up scenario based on linear growth of spending over the next 23-year time span. Within this context, the Federal Government need to commit on annual basis, at least 10.0 per cent (₦3.6 trillion) of the desired amount (₦36 trillion or about USD 94.73 billion) to move a bit closer

to the desired targets over the long term. This implies that the remaining sum would have to come from other sources including the private sector and the sub-national governments. In the next 23 years therefore, Nigeria needs about USD 2.3 trillion to close its investment gap. These figures include spending on physical infrastructure (e. g., roads and buildings) and the associated maintenance costs, but they do not include the operational cost of using the infrastructure (e.g., school teachers; firemen and fire trucks for fire stations) which will require additional investments. The expected investment by the Federal Government across the various asset classes is as shown in Figure 2.13.

**Figure 2.13: Required Annual Infrastructure Spend by FG across Asset Classes (USD billion)**



**Source:** Technical Review Team.

The largest investment needs are in energy (USD759 Billion) and transport (USD575 billion) sectors, representing more than 50.0 per cent of the required infrastructure investments over the 23-year period. Since transport and energy play crucial enabler roles for practically all other sectors, investment in these areas should be prioritised by means of allocating larger shares of the investment volumes to these two sectors. This will put a solid stock of supporting infrastructure in place for other sectors such as Water, Agriculture and Mining, and lay a foundation for subsequent growth in these sub-sectors.

## 2.5. Additional Factors to Consider in the Long-Run

### 2.5.1. Climate Change Considerations

As Nigeria seeks to achieve its vision for the nation’s development over the next 23 years through the NIIMP, one important factor that will affect the country’s development journey is climate change. Climate change could make food, energy, and water security more difficult for Nigeria to achieve. It could also affect the nation’s infrastructure and make future investments costlier or require other types of investments to make the infrastructure climate resilient.

Agriculture in Nigeria depended mostly on rainfall, making its output highly susceptible and vulnerable to weather patterns and conditions. With a stagnant or low crop yield and a growing population, Nigeria dependence on food imports to make up for food shortages. Furthermore, livestock, a major source of livelihood in the northern states of Nigeria, are exposed to rising

temperatures and declining pasture productivity. These climate risks are further compounded by Nigeria's rapid population growth, which, coupled with high poverty rate, reduces the nation's resilience to multiple climate risks.

The World Bank has described the issues and opportunities that exist for Nigeria in several detailed reports. According to the World Bank, climate change will increase Nigeria's vulnerability to weather swings and limit its ability to fulfil its development objectives. Potential impacts include:

- A 20.0 -30.0 per cent reduction in crop yields
- Lower livestock productivity
- Increased need for food imports
- Lower food security, particularly in the North and Southwest
- Reductions in GDP.

The World Bank's analyses confirm the fact that Nigeria cannot ignore its current climate situation or put off preparing for the likely change in climate in the future.

Climate change must be considered particularly when planning future infrastructure investments. For example, investment decisions (particularly for irrigation and hydropower) that are made using historical climate data may be incorrect, as climate change might result in under- or over-designing the required infrastructure. This could lead to capital costs or foregone revenues of 20.0 -40.0 per cent of the initial capital invested.

Adequate planning of irrigation infrastructure is largely dependent on the expected climate. For example, a drier climate will require more water storage. This makes planning and designing difficult, as it is not possible to predict the future climate of a region with certainty. Using historical climate data to make these investment decisions might result in losses where the investment is undersized if the climate is drier than expected, or oversized if the climate is wetter than expected. The World Bank states these losses can be as large as 40.0 per cent of investment costs. However, losses can be reduced by 30.0 -50.0 per cent where the investment strategy focuses on minimising the risk of misjudgements across multiple future climate outcomes, as opposed to solving for a specific climate outcome.

Climate variability in addition has a strong effect on Nigeria's power sector. Hydropower accounts for one-third of grid supply. Therefore, poor maintenance of the nation's dams and variability in rainfall result in power outages that affect Nigeria's energy security and growth potential.

Given the uncertainty of future precipitation and river run-off, climate change should be considered when planning hydropower infrastructure. A drier climate could result in a hydropower plant delivering less than the intended amount of power. As with irrigation, designing a dam without considering climate change could lead to losses of up to 25.0 per cent of capital costs, but designing to increase the storage capacity in anticipation of a potentially drier climate could reduce possible losses to 5.0 per cent.

Beyond the uncertainty of the future climate situation, Nigeria's infrastructure will also need to be climate resilient. Floods are the most common and recurring type of disaster in Nigeria. Given the

unpredictability of Nigeria's future climate, steps should be considered for building more climate-resilient infrastructure.

Damage to existing infrastructure from extreme climate events such as flooding reduces the expected durability of assets like housing, roads and dams. Building climate-resilient infrastructure, e.g., flood-proof housing, may increase costs but will also extend the asset's durability and lifespan. Furthermore, a potentially harsher climate in the future (that is not adequately planned for) will require higher maintenance.

The cost-benefit analyses of investing in climate-resilient infrastructure must be made on a project-by-project basis. But given the cyclical nature and prevalence of certain extreme climate events, the upfront costs of building more durable infrastructure are likely to be lower than the forestalled maintenance and replacement costs.

### **2.5.2. Population Management**

Adequate consideration must also be given to Nigeria's population growth and dynamics, which is a crucial determinant of infrastructure demand in the long run. It is projected that by 2030, Nigeria's population would reach 264 million. This presents both threats and opportunities for timely policy action.

On the positive side, Nigeria's booming population brings potential benefits, primarily through a large consumer market and labour pool. However, higher and unchecked population growth rate, would wear off the full benefits of higher growth, cause per capita income to fall or remain flat and exacerbate poverty. Significant pressure will be exerted on public infrastructure, particularly in the urban cities. High urbanisation is expected to increase further demands for investment on roads, rails, security, reliable electricity, water supply and other basic utilities.

While effective implementation of NIIMP 2019-2030 is expected to deliver commensurate infrastructure to accommodate the medium and long-term needs of the country's population, government is also expected to re-design and implement a new national population policy that would moderate the rapid population growth.

### **2.5.3. Ensuring Accessibility for All**

The development of infrastructure must consider accessibility for all citizens, particularly those with disabilities. With the right infrastructure, people with disabilities can exercise basic activities for daily living, such as performing home activities, going to work, to school and using public and private facilities.

The World Health Organization considers a 'disability' to be a multidimensional life condition that consists of impairments, activity limitations and participation restrictions. To the extent that few humans remain healthy and able-bodied their entire lives, all people experience some form of disability at one time or another, whether it be from a broken limb or as an elderly person. Disability is thus an environmental construct in which actual performance depends both on the physical impairment and contextual factors. The contextual factors involved may make it more or less difficult for people with various levels of functioning to manage their lives. Infrastructure can consequently serve a major role in either facilitating or hindering accessibility to basic activities for daily living.

Nigeria's infrastructure needs to take into account the needs of people with disabilities. The solution to addressing these needs should not be to create parallel institutions and processes, but rather to adapt existing services to include people with disabilities. This will help prevent an uneconomical duplication of services.

Accessibility of public and private amenities such as water, transport, education, and healthcare for all citizens is crucial to preventing exclusion and tapping into the full social and economic potential of the populace. Accessibility requires that the entire infrastructural service chain be fully accessible. As an example, in the Transport sector this means that stations, bus stops, airports, etc., should be fully accessible to and usable by people with disabilities.

As Nigeria builds new and rehabilitates existing infrastructure, design-for-all or universal design principles should be a key requirement in order to ensure the accessibility needs of people with disabilities (such as the hearing, seeing or physically impaired) are fully met.

Below are several accessibility guidelines and standards that can be employed in the development and rehabilitation of the nation's infrastructure (the full text of these guides can be freely obtained via the websites of the respective authors):

- **Accessibility for the Disabled: A Design Manual for a Barrier Free Environment** – A comprehensive accessibility guide published by the United Nations.
- **Promotion of Non-Handicapping Physical Environments for Disabled Persons** – Guidelines developed by the United Nations Economic and Social Commission for Asia and the Pacific.
- **Enhanced Accessibility for People with Disabilities Living in Urban Areas** – Guidelines developed by the United Kingdom's Department for International Development with a focus on developing countries.
- **Adaptive Environments Checklist** – A set of standards and tools for universal design used by the United States for implementing the Americans with Disabilities Act.

#### **2.5.4 Market Failure Concerns**

Nigeria, like most developing countries, is confronted with challenges posed by market failure. Effort to increase infrastructure stock sometimes suffer some setbacks due to market failures such as Principal-Agent problems and incentive structure; information asymmetry; regulations and factor immobility among others. Political office holders, often times are confronted with the drive and desire to leave legacy projects behind not minding the cost effects of such infrastructure projects thus making economies of scale to take a back seat in the decision to locate infrastructure in regions.

## 3 Sectoral Overview

### 3.1 Transportation Infrastructure

#### 3.1.1 Introduction

A well-developed transport system is critical for any nation’s growth and development. In particular, transport infrastructure is a critical enabler of development that has a far-reaching impact on all other sectors of the economy. Nigeria’s existing stock of transportation infrastructure is not adequate to support the nation’s expected growth aspirations. Adequate infrastructure planning and increased investment are critical to the realization of the nation’s economic and developmental goals.

Indeed, the transportation sector is one of the sectors that is most affected by the COVID-19 pandemic. The lockdowns including closure of land and sea borders, restrictions to domestic and international flights significantly strained operations in the sector. All modes of transport have experienced significant disruptions leading to drastic revenue plunge. The aviation sector alone is estimated to lose over N21 billion in monthly revenue. On the other hand, most road and rail projects across the country were stalled. With over 80 million people using the transportation sector daily, the sector is fundamental in helping Nigeria rebound from the negative effect of the COVID-19 pandemic. Repositioning the transportation infrastructure for a post COVID-19 economy requires that the right structures be put in place to deliver a modern and safer transport system in the country.

There is a need for increased maintenance and expansion of the existing stock of transport infrastructure alongside the inauguration and completion of new fit-for-purpose transport infrastructure projects. The focus would be on linking the various forms of transport systems to strengthen the inter-modal transport of goods and services as well as improving safety, convenience, travel time, cost of transportation, and reduction of carbon emissions.

**Table 3.1: Key Elements of the Transportation Infrastructure**

Modes	Infrastructure	Vehicles	Services
<b>Air</b>	Airport infrastructure Aerodromes Air Navigation Infrastructure	Airplanes Helicopters	Airline and air freight services Airport services Training
<b>Land (Road)</b>	Roads Bridges Terminals	Motorized Vehicles Non-motorized vehicles	Passenger services Road Haulage Informal services Training
<b>Land (Rail)</b>	Railways Rail Stations	Trains	Passenger services Freight services (Urban) Mass Rapid Transit Training

<b>Land (Pipelines)</b>	Pipelines	Line Pipes	Pipeline services
<b>Water</b>	Waterways (Inland and Sea) Port Infrastructure Navigation Infrastructure	Ferries Ocean-going vessels	Stevedoring services Shipping/Barge services Training

**Source:** Ministry of Transportation.

Table 3.1 highlights the key elements of the transportation sector and some of the priorities for the sector include:

- Increase emphasis on rail transportation - both passengers and freight;
- Rehabilitating rail network in some of the major cities across Nigeria;
- Building new standard gauge railway lines in some major cities across Nigeria;
- Increasing the capacity of inland waterways transportation – dredge 1000Km plus of inland waterways – build riverbank protection;
- Enhancing the performance and competitiveness of seaports – build three new deep seaports (Lekki, Olokola, and Ibom);
- 2000km of navigable waterways;
- 30,000 operational boats, vessels, and barges;
- 75.0 per cent of total ports operating 24 hours with patrol boats deployed;
- 2.2 km of roads rehabilitated and maintained between ports;
- Rehabilitation of existing airports and construction of a set of four new airport terminal buildings;
- Improving airport and airline safety/security;
- Procurement of private sector contracts based on fair and transparent competition, and decisions on the roles of public and private parties based on value for money;
- Developing a pool of well-trained professional for the transport sector;
- Creating an enabling environment for the emergence of Nigeria as a regional hub in West Africa for the different modes of transportation;
- Having an appropriate balance between public and private provided transport particularly in urban areas; and
- Enhancing inter-modal transportation in Nigeria to ease the load on the road’s mode of transportation.

The specific issues for policy within each of the transportation sub-sectors are discussed below.

### **3.1.2 Road Infrastructure**

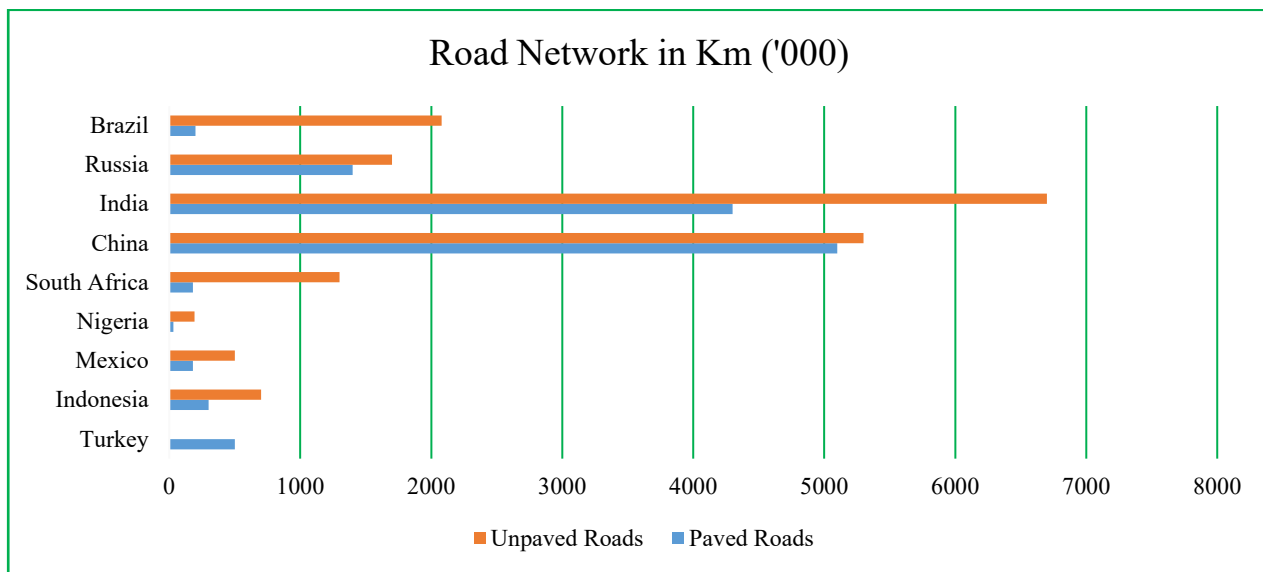
#### **a) Current State of Road Infrastructure**

Adequate road infrastructure is central to Nigeria’s economic growth; it is at the core of good governance and public welfare. Any improvement in road infrastructure positively impacts on the nation’s output. Nigeria has a total road length of 193,200 kilometers, comprising 34,123 km Federal roads, 30,500 km State roads, and 129,577 km Local Government.



Majority of road projects involved the rehabilitation and upgrade of existing roads while trying to construct new ones. In recent times, government has shown commitment to complete major highways through the formulation of policies that allow private sector participants to invest in road projects across the country, including the introduction of infrastructure bonds and Public-Private Partnership models. An overview of road projects undertaken between 2014 and 2020 indicates that some were funded through PPP arrangements supported with budgetary provisions. However, significant challenges remain as the country’s road network compares unfavorably with other comparator countries like Indonesia, Brazil and South Africa (See Figure 3.1).

**Figure 3.1: Comparison of Nigeria Road Network with other Mint and Brics Nations**



**Source:** Central Intelligence Agency – World Fact-book.

It is estimated that 40.0 per cent of the Federal Road network is in poor condition and needs rehabilitation; 30.0 per cent in fair condition and requires periodic maintenance; and about 27.0 per cent in good condition which needs routine maintenance. The remaining 3.0 per cent is accounted for by unpaved trunk roads that need to be paved. In the case of State roads, about 78.0 per cent are in poor condition, with only 22.0 per cent in fair-to-good condition. The local government roads are worse off with 87.0 per cent of the roads in poor condition.

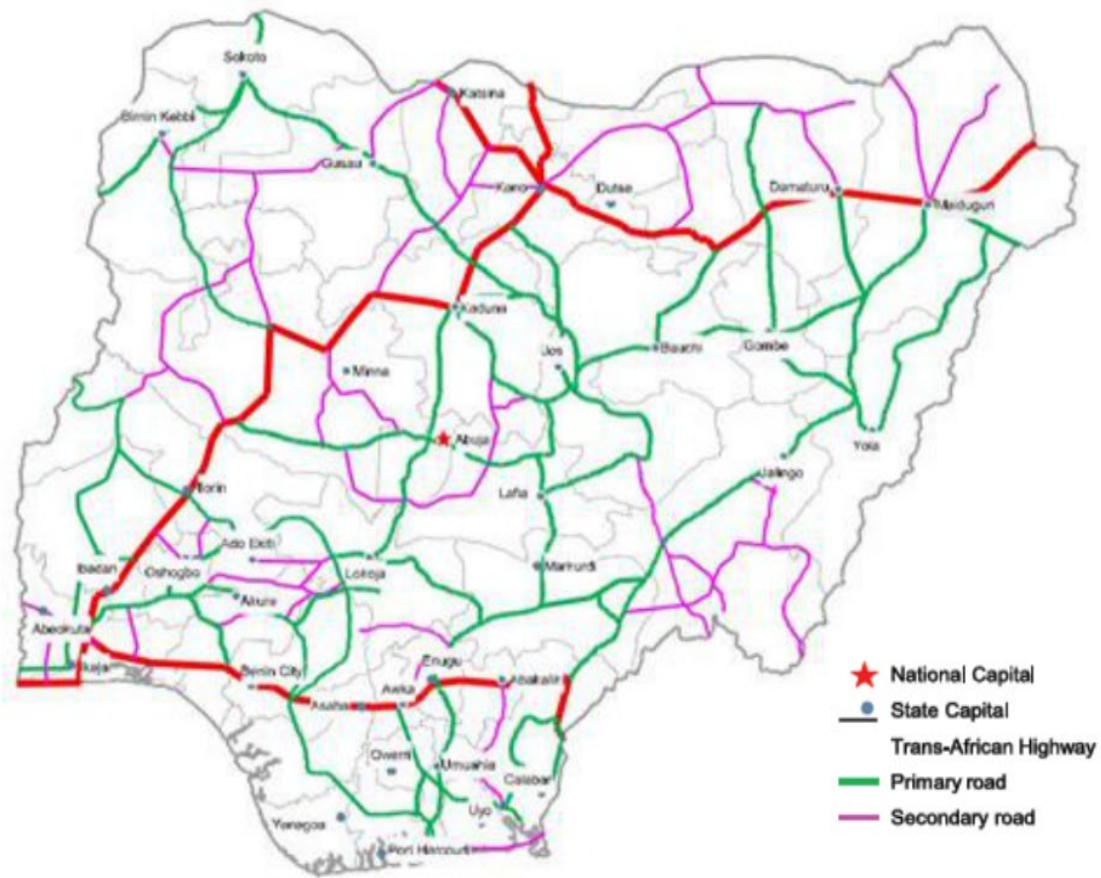
The Nigerian road network from the colonial days to the present day, have been classified into three, namely Trunks A, B and C. roads.

**Trunk A:** These roads form the skeleton of the national road grid. They cut across regional boundaries in the country and even extend to the international borders of neighbour West African countries. These categories of roads are under Federal Government ownership. This means that they are designed, constructed, maintained, and financed by the Federal Government of Nigeria through the Federal Ministry of Works and Housing. The Federal Road Maintenance Agency (FERMA) is however charged with the responsibility of carrying out maintenance of the roads.

**Trunk B:** These roads are the second category of main roads in Nigeria. The roads connect the major cities within States with the State capitals. These roads are designed, developed, financed, and maintained by the State Governments through their Ministries of Works, Transport, or Infrastructure.

**Trunk C:** These roads are local feeder roads constructed and maintained by the Works Department of Local Government Authorities in Nigeria. This class of roads is primarily not concrete asphalted and is often affected by seasonal weather changes. The roads connect villages and communities in the remote parts of each Local Government Area. Figure 3.2 shows the road connections in Nigeria.

**Figure 3.2: Transport: Roads in Nigeria**



**Source:** Natural Earth, African Development Bank.

**b) Institutional Structure**

The Federal Ministry of Works and Housing is responsible for the planning, designing, construction, rehabilitation, monitoring and maintenance of roads and bridges nation-wide, provision of engineering infrastructure and surveying and mapping of the nation’s internal and international boundaries. However, the current institutional structure for the management of roads infrastructure is inefficient. A Federal Road Maintenance Agency (FERMA) was established as an interim measure before instituting more substantive sector reforms, as Nigeria continues to rely on traditional general budget allocations to fund road maintenance and rehabilitation.

### **c) Challenges affecting Nigerian Roads**

Generally, the poor state of Nigerian roads can be attributed to the following challenges:

- Inadequate funding of road maintenance and lack of new investments to expand the existing capacity.
- Lack of attention to inter-modality transportation: The concept of inter-modality which requires that the various means of transportation is interlinked has not been given serious consideration thereby limiting the efficiency of the road sector in terms of convenience, travel time, and cost.
- Lack of reforms: The issue of sector policy, institutional, legal, and regulatory reforms that should accompany a liberalized economy have not been tackled head-on and continue to affect the effectiveness and efficiency of service delivery across the sector.
- Inadequate resources for preventive road maintenance: Current maintenance levels are insufficient to preserve the quality of the existing road infrastructure, resulting in annual deterioration. Ample resources have been allocated to federal road rehabilitation, but not enough of these resources are reserved for preventive maintenance.
- Lack of road maintenance: A historical trend of prioritizing new road construction over maintaining existing roads further exacerbates the deterioration of existing road infrastructure.
- Heavy burden on roads: A shift in inland transportation from rail and waterways to roads has increased the burden on roads as they have become the nation's primary mode of passenger and goods transport. For example, the high volumes of petroleum products transported on the national roadways, which are meant to be transported via pipelines, diminish the already limited lifespan of the roads, resulting in higher maintenance needs.
- Budget Cycle: The budgeting cycle limits the use of funds during the dry season (the season most favourable for construction).
- Overweight and poor drainages: Overloading, blocked drainage structures and the parking of heavy axle vehicles on carriageways contribute to additional deterioration of road infrastructure.

### **d) On-going efforts**

Government is committed to completing the road sector reforms, particularly the establishment of Road Authority and Road Fund to engender best world practice in the administration of road network development and management in the country. The Infrastructure Concession Regulatory Commission Act would be reviewed to resolve areas of conflicting legislation with the Bureau of Public Enterprises and Bureau of Public Procurement and strengthen the Commission's regulatory

mandate to facilitate private investment. Similarly, approval of the Tolling Policy shall also be fast-tracked to pave way for the concessioning of the major dual carriageways. The monies saved from the concessions would be used for the development of other critical road infrastructure in the Federal road network.

The Federal Ministry of Works and Housing is also currently working on the improvement of various sections of the Federal Highway network. This covers about 650 ongoing projects estimated at ₦6.3 trillion (see Table A1 at Appendix). As of August 28, 2020, the total sum of ₦1.991 trillion had already been certified for the works done while the sum of ₦1.6 trillion had been paid to the various contractors. Also, the Public-Private-Partnership Department in the Ministry, has developed Outline Business Cases (OBCs) for viable and bankable major highways (brownfields) and proposed new alignments (Greenfields) to attract the private sector and foreign direct investment (FDI).

### **3.1.3 Aviation Infrastructure**

#### **a) The current state of Aviation infrastructure**

The aviation industry supports USD 2.7 trillion (3.5 per cent) of the world's gross domestic product (GDP). Civil aviation is a critical element in Nigeria's transportation system and indeed its economy.

Nigeria Civil Aviation Authority as at June 2020, revealed that Nigeria has twenty-two (22) Airports and many regulated Airstrips and Heliports; 23 active domestic airlines; 554 licensed pilots; 913 licensed engineers, and 1,700 cabin personnel. Nigeria, being Africa's most populous country, is an important destination for over 22 foreign carriers. Nigeria currently has Bilateral Air Services Agreements (BASA) with over 78 countries. As at 2019, Nigeria had 17 registered air carriers with an inventory of 73 operated registered aircraft, annual passenger traffic on registered air carriers of 3,223,459, and annual freight traffic on registered air carriers of 22,400,657 mt-km.

According to the National Bureau of Statistics, air transport's contribution to the country's Gross Domestic Product marginally increased from 0.12 per cent to 0.14 per cent between 2018 and 2019 respectively. The Aviation industry's contribution to the country's Nominal Gross Domestic Product rose to ₦198.62 billion in 2019. The industry contributed ₦149.35 billion to the GDP in 2018 but increased by 32.9 per cent to ₦198.62 billion recorded at the end of 2019. The aviation sub-sector recorded the fastest growing activities in the transportation sector in the fourth quarter of 2019. Although the COVID-19 pandemic greatly affected the Aviation sub-sector in 2020, government would continue to provide the necessary enabling environment for the sector to continue to thrive post-COVID-19 and during the plan period.

Aviation remains a critical element in Nigeria's transportation system and its contribution to GDP is growing. Aside the state of infrastructure, there is a need to improve management practices, quality of policy initiatives, and ensure enabling business and investment environment. Figure 3.3 shows the number and location of International and Domestic Airports in Nigeria.

**Figure 3.3: Transport – Airports in Nigeria**



**Source:** Natural Earth, African Development Bank (ADB).

**b) Institutional structure**

Nigeria Aviation industry is divided into the following components: Nigerian Airspace Management Agency (NAMA), Nigeria Civil Aviation Authority (NCAA), and Federal Airports Authority of Nigeria (FAAN). FAAN is statutorily responsible for managing all Commercial Airports in Nigeria and provide service to both passenger and cargo airlines. NAMA is responsible for the safety of all airplanes and forestalls the intrusion of unauthorized planes (civil or military) into the country. It provides navigational facilities, air traffic services, aeronautical information services, aeronautical search, and rescues services.

Nigerian Civil Aviation Authority (NCAA) is responsible for the safety and economic regulation of the aviation industry; ensuring compliance with government policies and the International Civil Aviation Organisation (ICAO) standards and recommended practices. Other agencies in the aviation industry include the Nigerian Meteorological Agency (NIMET), Nigerian College of Aviation Technology (NCAT) and Accident Investigation Bureau (AIB).

### **c) Challenges of the sector**

The poor state of Nigeria's Airports can be attributed to the following challenges:

- Need to modernize and upgrade infrastructure and equipment such as terminal buildings, control towers, conveyor belts, instrument landing systems, communication equipment, runway lighting, fire tenders, etc;
- Manpower development and training on equipment handling and maintenance;
- Multiple entry points given to foreign airlines by the Nigerian government by granting multiple frequencies to foreign airlines without benefits to local carriers and the aviation industry;
- Difficulties in accessing foreign exchange by operators;
- Rising price and scarcity of Jet A 1 (Aviation Fuel); and
- Import duties on Aircraft engines and spares.

### **d) On-going efforts on Aviation**

Government has taken some initiatives to improve domestic capacities for air traffic management and safety. These include:

- Plans to establish Aviation University to promote research, development, and production of higher-level management manpower for the industry.
- Total Radar Coverage of the Nigerian Airspace (TRACON) project, the Mobile Tower project, and capacity building.

The objective of the TRACON project is to provide total radar coverage for the Nigerian Airspace to enhance civil and military surveillance of aircraft operating into the Nigerian Airspace. TRACON comprises of 4 primary and 5 secondary radars co-located in Nnamdi Azikiwe Abuja, Murtala Mohammed Lagos, Malam Aminu Kano, and Port Harcourt International Airports. It also has provision for 5 stand-alone Secondary Surveillance Radar to be in Talata Mafara, Maiduguri, Numan, Obubura, and Ilorin. The international airports will have a combination of primary and secondary radar and Lagos will have a simulator centre for on-the-job training of Air Traffic Controllers and Engineers. The architecture of TRACON comprises Voice Communication Systems, Voice Recording Systems, VHF transceivers, Fibre Optic, Display Consoles, Integrated aircraft billing systems, and spares. The Primary Surveillance Radar has coverage of 65 Nautical Miles while the Secondary Surveillance Radar has a range of 250 Nautical Miles. The aim is for the coverage areas to overlap and provide total coverage. TRACON works by intercepting signals emitted from moving aircraft which is relayed back to the Area Control Centres for the use by the Air Traffic Control Personnel in the identification and monitoring of aircraft movement.

Changes in the scope of the project have resulted in significant delays in implementation. These range from removal of the Primary Radar, Mode of Payment, phasing of the project, an increase in the number of simulator training sites (from 1 to 40), to the construction of a new Area Control/Approach Radar building (rather than refurbishment). Delayed disbursement of project funds also led to delays in implementation. About 65 Air Traffic Controllers and more than 30 Engineers have been trained on the use of TRACON. The completion of this project has significantly enhanced air safety in

Nigeria. Moreover, the subsequent acquisition of the satellite-based integrated flight tracking equipment that allows for both ground-based and flying aircraft to be tracked has further enhanced air traffic control capacities. The latter has replaced the outdated Emergency Locator Transmitter system.

The Nigerian Airspace Management Agency has also acquired motorized air traffic control tower, known as Mobile Tower, for air traffic management under emergencies. Considering that the aviation world is to implement the Global Positioning System for air navigation, NAMA has to configure the Mobile Tower with the state of art Global Positioning System receivers to keep the system current should Nigeria decide to adopt the GPS mode for air navigation. The entire tower system has backup spares to ensure its continuous serviceability. NAMA would acquire additional mobile tower to serve the Northern segment of the Nigerian Airspace.

There are also ongoing efforts to fast-track the completion of airport cargo and passenger handling terminals to increase capacity from 208,424 to 276,848 tons and 15 million to 45 million passengers, respectively, by the end of 2020. Also, efforts are on-going to concession four international airports under the public-private partnership model. The facilities in-scope are the Murtala Muhammed International Airport, Mallam Aminu Kano International Airport, Nnamdi Azikiwe International Airport, and Port Harcourt International Airport. Eleven airports are already undergoing reconstruction nationwide which include Murtala Muhammed International Airport and the General Aviation Terminal (GAT), Lagos; the Nnamdi Azikiwe International Airport, Abuja; Port Harcourt International Airport, Omagwa; the Akanu Ibiam International Airport, Enugu and the Malam Aminu Kano International Airport, Kano. Others are Margaret Ekpo International Airport, Calabar, Yakubu Gowon Airport, Jos; the airports in Yola, Kaduna, and Sam Mbakwe Airport, Owerri.

Other notable achievements in the aviation sector in recent times include the following:

- i. Construction of New Terminal Buildings at Five International Airports, Abuja, and Port Harcourt Building already commissioned.
- ii. Reconstruction of Abuja Airport Runway in 2019.
- iii. Construction of 250 Capacity Cafeteria at NCAT, Zaria at 90.0 per cent completion;
- iv. Reconstruction of the Rehabilitated Akanu Ibiam International Runway Airport was commissioned on August 29, 2020;
- v. Installation of Automated Fire/ Smoke Training Simulator at NCAT, Zaria, 100.0 per cent completion;
- vi. Construction/Refurbishment of CPD lounges at Kaduna, Kano, Abuja and Port Harcourt by NCAA at 100.0 per cent completion;
- vii. Installation of thirty (30) digital screens at CPD lounges/desks at airports across the Country to display passengers' rights and obligations, and other educational / enlightenment information by NCAA at 100.0 per cent completion;
- viii. Certification of Accident Investigation Bureau's (AIB) Flight Safety Laboratory by ISASI Working Group and ICAO Standard at 90.0 per cent completion;
- ix. Signing of Memorandum of Understanding (MoU) between Accident Investigation Bureau (AIB) with the Nigerian Air Force in July 2020;
- x. Installation of additional 63 Automatic Weather Observations Stations (AWOS) across the Country by NiMet;

- xi. Upgrading of three (3) Doppler Radars at Port Harcourt, Lagos and Kano States by NiMet at 95 per cent completion;
- xii. The first (1<sup>st</sup>) Africa Country to achieve: Implementation of Quality Management System leading to ISO 9001: 2015 Certification, the 2010 Certification of the Regional Training School accreditation leading to ISO 29990 and the recipient of ISO 9001: 2015 for Aeronautical Meteorological Services;
- xiii. Construction of National Training Institute in Katsina to complement the Regional Training Centre at Oshodi, Lagos at 99.0 per cent completion;
- xiv. Installation of New Category III Instrument Landing System (ILS) / Distance Measuring Equipment (DME) at Lagos and Abuja. Commissioning of Service Robots (CRUZR) in Abuja and Lagos International Airports, 99 per cent completed; and
- xv. Remodeling of FAAN training School and its certificate as a training institute.

**Table 3.2: Approved Aviation Infrastructural Roadmap for 2020 -2025**

S/N	Key Activity	Status/Expected Timeline of Implementation	
		2020	2021-2025
1.	Concession of Four (4) International Airports	Outline Business Case (OBC) Certificate has been reviewed by the ICRC and Compliance Certificate issued. The procurement Process commenced in Q3, 2020.	Four International Airports Concessed. Full Implementation by 2022 - 2025.
2.	Strengthening and Improvement of Safety and Security	Ongoing Project. Lagos and Abuja Certified.	Assessment of Comprehensive Security Threat and Vulnerability carried out. Full Implementation from 2021 - 2025.
3.	Establishment of National Carrier	Outline Business Case (OBC) completed, awaiting Compliance Certificate from ICRC. Procurement Process to commence in Q4, 2020.	Outline Business Case approved by ICRC. Full Implementation by 2021 – 2025.
4.	Development of Agro-Cargo Terminals	OBC has been submitted to ICRC for review and approval.	Agro-Cargo Terminals commences operations from 2022 – 2025.
5.	Development of Maintenance, Repair, and Overhaul (MRO) Centre	Certificate of Compliance for the OBC has been issued by the ICRC and the procurement process is at an advanced stage.	MRO Centre commences in Nigeria with Full Implementation from 2022 - 2025.
6.	Establishment of an Aviation Leasing Company (ALC)	Certificate of Compliance for the OBC has been issued by the ICRC and the procurement	The Aviation Leasing company starts its operation by 2021, which will be reviewed in 2022



		process is at an advanced stage.	and Full Implementation from 2023 -2025.
7.	Development of Airport Cities (Aerotropolis)	OBC has been submitted to ICRC for review and approval.	Approval of Outline Business Case by ICRC by 2021. Commencement of Procurement Process by 2022. Full implementation by 2023 - 2025.
8.	Development of Five Airports Free Zones	Still at 80.0 per cent completion level. Submitted Feasibility Report (in conjunction with NEPZA) to HMIT&I.	Five Airports Free Zone operating in Nigeria by 2021. Full implementation by 2022 - 2023

**Source:** Federal Ministry of Aviation

### 3.1.4 Rail Infrastructure

#### a) The current state of Rail infrastructure

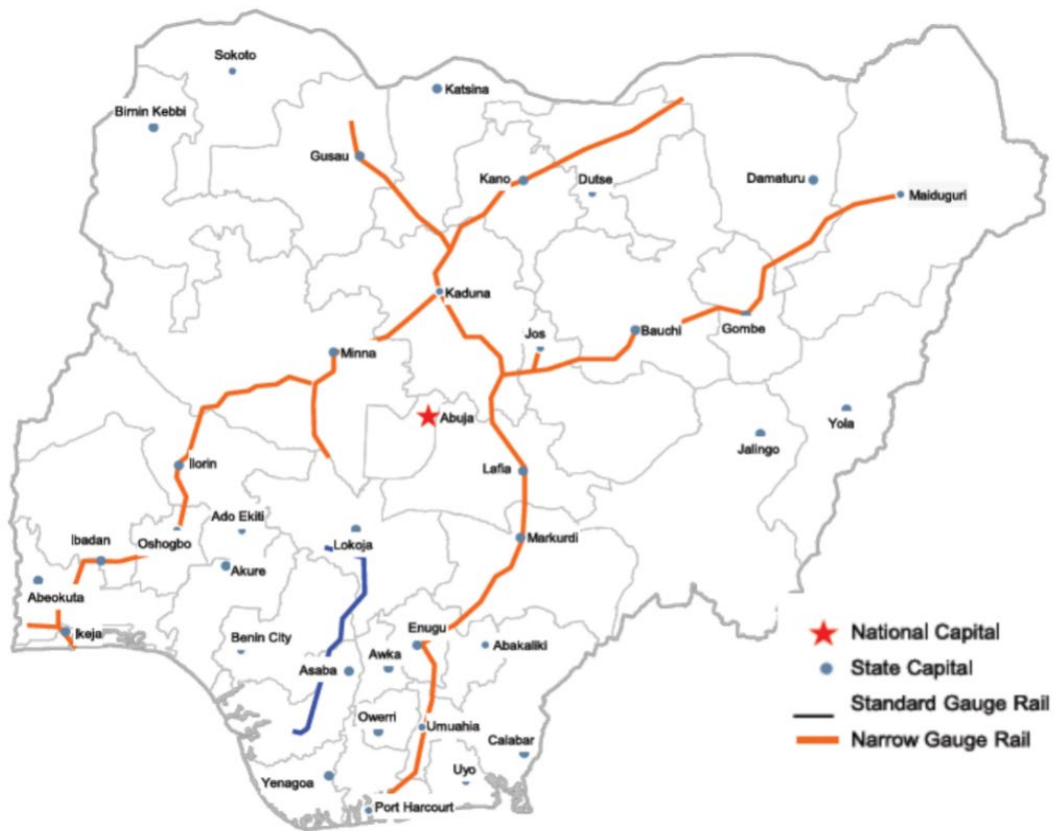
The Federal Government had invested more effort and resources in the last five years than in other years to restore the rail sub-sector through the execution of various railway projects across the country under different financing methods. The investments in the sector are expected to make the railway sub-sector a leading means of transport in the Transportation Sector. Most of the Rail sub-sector projects largely consist of rehabilitation of existing narrow rail gauge lines and construction of new standard gauge rail lines, for instance, the Lagos-Kano and Abuja-Kaduna standard gauge rail lines. Efforts to expand train services to many more parts of the country received a boost with the completion of the Abuja Inter-City Metro railway line and the test running of Itakpe-Warri and Lagos-Ibadan rail lines (see Table 3.3). It is envisaged that full operationalization of the rail lines will further ease the movement of goods and passengers from the North to South and vice versa in Nigeria.

Nigeria rail network consists of 4,332 track km and 3,505 route km, characterized by sharp curves and steep gradients in many sections. Only 137 km of the track is in the form of double track and all of that is in the Western corridor. The Nigerian Railway network runs from the Southwest (Lagos) to Northwest (Nguru) and from the South-South (Port Harcourt) through Kafanchan to the North-East (Maiduguri). The 3,505 km network is built on a Cape Gauge of 1,067 mm.

In summary, the Nigerian Railway Corporation's infrastructure and facilities include:

- 1,496 km of gauge rail line, comprising 827 km of narrow-gauge sidings and loops and 669 km of standard gauge rail line.
- 577 km of branch lines, made up of 304 railway stations (280 narrow gauge and 24 standard gauge) and 273 railway outstations, with 434 railway bridges across the entire track length (371 for narrow gauge and 63 for standard gauge).

Figure 3.4: Transport – Railways in Nigeria



Source: Natural Earth, African Development Bank (ADB).

**Table 3.3 Nigerian Railway System**

S/N	Section	Year Constructed	Distance	Type of Line	Status	Remarks
1	Lagos - Ibadan	1898 - 1901	193 km	Narrow Gauge	operational	Requires maintenance
2	Ibadan - Jebba	1901 - 1909	295 km	Narrow Gauge	operational	Requires maintenance
3	Kano - Baro	1907 - 1911	562 km	Narrow Gauge	operational	Requires maintenance
4	Jebba - Minna	1909 - 1916	225 km	Narrow Gauge	operational	Requires maintenance
5	Port Harcourt - Enugu	1914 - 1916	243 km	Narrow Gauge	operational	Requires maintenance
6	Enugu - Makurdi	1916 - 1924	220 km	Narrow Gauge	operational	Requires maintenance
7	Kaduna - Kafachan	1922 - 1927	179 km	Narrow Gauge	operational	Requires maintenance
8	Kafachan - Jos	1924 - 1927	101 km	Narrow Gauge	operational	Requires Rehabilitation
9	Kuru - Bauchi	1958 - 1961	166 km	Narrow Gauge	operational	Requires Rehabilitation
10	Bauchi - Gombe	1961 - 1963	155 km	Narrow Gauge	operational	Requires Rehabilitation
11	Gombe - Maiduguri	1963 - 1964	302 km	Narrow Gauge	operational	Requires Rehabilitation
12	Itakpe - Ajaokuta	1986 - 2020	277 km	Standard Gauge	operational	Newly Commissioned
13	Ajaokuta - Warri	1991 - 2020	275 km	Standard Gauge	operational	Newly Commissioned
14	Port Harcourt - Onne		19 km	Standard Gauge	operational	
15	Abuja (Idu) - Kaduna	2009 - 2016	186.5 km	Standard Gauge	operational	
16	Lagos - Ibadan (Double-Track)	2017 - date	156.5 km	Standard Gauge	Construction	93% Completed
17	Lagos - Apapa Port	2017 - date	6.516km	Standard Gauge		
17	Ibadan - Minna	To commence 2021	460 km	Standard Gauge	Aerial Survey Ongoing	Design and Preliminary Works ongoing
18	Minna - Abuja	To commence 2021	127 km	Standard Gauge		
19	Kaduna - Kano	To commence 2021	203 km	Standard Gauge		
20	Kano - Maradi (Niger Republic)	To commence 2021	212 km	Standard Gauge		
21	Itakpe - Abuja	To commence 2021	213 km	Standard Gauge		
22	Warri - Warri Town and Port	To commence 2021	214 km	Standard Gauge		
23	Branch line to Port Harcourt to Maiduguri:	To commence 2021				
a	Goniri - Gashua		216 km			
b	Elelenwa - Bonny Port		56 km			
c	Onne - Onne Port		8.7 Km			
d	Elelenwa - Owerri		85.4 km			
24	Coastal Railway Line: Lagos- Shagamu - Ijebu Ode - Ore - Benin City - Sapele - Warri - Yenagoa - Port Harcourt -Aba - Uyo - Calabar and Section from Benin City - Abudu - Agbor - Uko - Ogwashiukwu - Asaba - Onitsha	To commence 2021	1,402 km	Standard Gauge		

**Source:** Federal Ministry of Transportation.

The rail sub-sector, after years of neglect and dilapidation, is being resuscitated. The 25-year railway strategic vision provides the future path for the sector. This is evident in the Government's effort as described below:

- Restructuring of the NRC Management structure.
- Complete rehabilitation of the Western line.
- On-going rehabilitation of the Eastern line.
- Rehabilitation and procurements of rolling stocks, workshop equipment, and machinery.
- Initiation of Public-Private Partnership Opportunities (for instance the 3,505 kilometres narrow gauges rail system, comprising Lagos-Kano; Port Harcourt-Maiduguri, and Zaria-Kaura Namoda) has been slated for a concession to a consortium of reputable international operators.

### **3.1.5 Maritime Infrastructure**

The maritime Sub-sector is the backbone of international trade. A well-developed maritime sub-sector would play a fundamental role in driving the future growth of trade contribution to GDP. The maritime sub-sector was affected by the competitiveness of global maritime businesses and the attractiveness of the sub-sector should at least be the same for any geographically mobile activity. There is a need, therefore, to enhance the competitiveness of Nigerian ports against other ports in the West and Central African sub-region, resulting in the development of deep seaports, driven by the private sector under the appropriate regulatory framework.

Within the country, the dredging of major rivers and construction of river ports and jetties is expected to reduce the cost of business by linking the hinterland and mining and extractive industries to the cities at a much-reduced cost. This will lead to an increase in economic activities in most parts of the country especially in towns and depots along the river and the hinterland. To ensure sustainable development in the sector, a boatyard project at Oron was designed for the building of ships and primarily to provide practical experience for cadets and seamen on building, repairs, and maintenance of Seagoing vessels. When completed it is expected to reduce capital flight, improve manpower development in the sector, and boost local boat building capacity in the country.

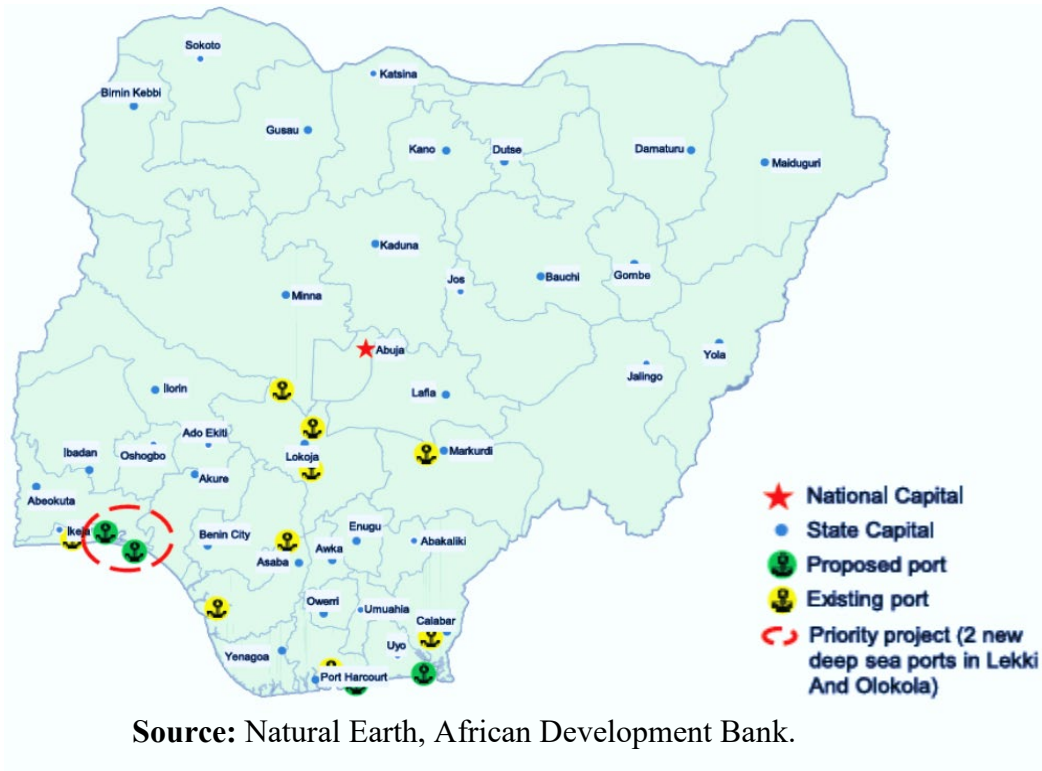
#### **a) Current State of Infrastructure in the Maritime Sub-sector**

Nigeria has significant and diverse marine resources that are its waters and along its coastline of 853 kilometers bordering the Atlantic Ocean in the Gulf of Guinea and a maritime area of 46,000sq.km. Nigeria, with her huge natural maritime resources, is a major hub for local and international trade in Africa. The maritime sub-sector, through its contribution to economic activities and interlinks with various sectors, is fundamental to the Nigerian economy. However, the huge potential remains to be harnessed in this sector. Nigeria has substantial domestic water resources that include rivers, creeks, lagoons and lakes, and an extensive coastline of about 853 km. There are 12 major inland rivers with about 3,800 km that are navigable. The Niger and Benue rivers (including their major tributaries and estuaries) are the principal waterways. These waterways are the major transportation routes linking Apapa, Tin Can, Warri, Port Harcourt, Onne, and Calabar seaports.

Three Deep Seaports, namely the Lekki and Badagry deep seaports in Lagos State and Ibom Deep Seaport in Akwa Ibom State which are projected to have a minimum depth of 16.5 meters with the

capacity to berth large super Panamax vessels, are expected to make the Nigerian Ports a regional hub for cargoes destined for West and Central Africa. These Ports will inevitably cause an increase in revenue generation, employment opportunities, and attracting tonnage for the Nigerian Ship Registry.

**Figure 3.5: Transport –Ports in Nigeria**



At present, the Nigerian seaports comprise 93 general cargo berths, 5 RORO berths, 7 bulk solid cargo berths, 11 bulk liquid cargo, and 63 buoy berths as well as 650 different cargo handling equipment.

**b) Institutional Structure of the Maritime Sub-sector**

The institutional and regulatory structure of the maritime industry is largely divided among two major agencies; Nigerian Ports Authority (NPA) and Nigeria Inland Waterways Authority (NIWA). NPA is vets with the responsibility of maritime transport while NIWA is in charge of inland water infrastructure and regulation of operations on the inland waterways.

NIWA regulatory activities include issuing licenses for inland navigation, piers, jetties, and dockyards; examining and survey of inland watercraft and shipyard operators, granting permits and licenses for sand dredging, pipeline construction, dredging of slot, and approve designs and construction of inland river crafts. NIWA also performs engineering services (such as the construction of inland river-port and jetties. It also undertakes capital and maintenance dredging; engineering design of river ports), environmental services (pursuing an ecologically sound waterway policy), and safety and security of the waterways.

### **c) Challenges**

The poor state of the Nigerian maritime system can mainly be attributed to the following challenges:

- A high rate of sediment build-up along navigable channels;
- Physical obstruction, including wrecks, rocks, outcrops, and aquatic weeds;
- Inadequate government investment in infrastructure for inland water transport, including inadequate river port infrastructure;
- Poor landside connections to river ports;
- Poor communications and navigational aids;
- policy instability;
- The multiplicity of government agencies in the ports;
- Port congestion problems;
- Inadequate power supply for effective port operations;
- Absence of economic regulation; and
- Inadequate infrastructure to accommodate the current and emerging traffic in the seaports.

### **d) On-going Efforts to Improve the Maritime Sub-sector**

Overcoming the challenges in this sector will require a holistic and comprehensive approach that takes into consideration the interrelation of seaports with other sectors of the economy. The planning of port infrastructure and the regulation should be achieved in the context of integration and inter-modalism to accomplish the desired transformation in the sector. It is imperative to ensure that about 3,000 km of seasonally navigable waterways are made operational all year round to make inland water transportation meaningfully impact the national economy, particularly in the area of cheap and affordable transport.

The Federal and State Governments of Nigeria through the Nigerian Ports Authority is partnering with the private investors to develop six (6) deep seaports namely Lekki Deep Seaport, Ibaka Seaport, Age Deep Seaport, Badagry Deep Seaport, Olokola Deep Seaport, and Ogidigbe Port.

The Badagry Deep Seaport project is estimated at ₦216bn (USD1.35bn). The port will stretch across an area of 90 hectares and expected to handle 4mn tonnes of cargo. In its first phase of the three phases, the container terminal at the new port would have two berths totaling 650m, with a draught of 14.5m of water alongside it. Its annual box-handling capacity would be 1mn twenty-foot equivalent units (TEUs) initially and to be expanded in subsequent phases. Further to the container-handling facilities, the new port at Badagry would also be able to handle roll on-roll off (ro-ro) and general cargo and have a small free zone.

The government has embarked on some transformation process to improve inland waterways services as follows:

- Dredging of the lower River Niger from Baro (Niger State) to Warri (Delta State), a distance of 532km, and provision of buoys for the dredged channel;
- Establishment of an Inland Waterways Police Command;
- Procurement of 14 security patrol boats;

- Initiation of the construction of 6 new river ports in Baro, Lokoja, Makurdi, Owerri, Degema, and Oguta;
- Preparation of draft bill for the reform of the National Inland Waterways Authority which is currently undergoing final review; and
- Ongoing year-round maintenance and clearance of all navigable waterways.

### 3.1.6 Urban Transport

Urban transportation in Nigeria is largely an unregulated small-scale market, using a combination of para-transit modes consisting of shared taxis, mini-buses, motorcycles, and converted motorcycles known as ‘Keke NAPEP’. It is in Lagos and Abuja that conventional buses like those in use in modern cities in other parts of the world are used. The use of para-transit modes is dominant in Nigeria. Nigeria is however one of the countries in the world with densely populated cities of over six million people where urban transport system is not fully developed.

Urbanization has been one of the dominant contemporary processes. A growing share of the global population now lives in cities. Considering this trend, urban transportation issues are of foremost importance to support passengers and freight mobility requirements of large urban agglomerations. Transportation in urban areas is highly complex because of the modes involved, the multitude of origins and destinations, and the amount and variety of traffic. Traditionally, the focus of urban transportation has been on passengers as cities were viewed as locations of utmost human interactions with intricate traffic patterns linked to commuting, commercial transactions, and leisure/cultural activities.

Urban transportation takes place on land, waterways, and in the air. The movement on land is characterized by private automobiles, walking, bicycles, motorcycles, tricycles, buses, and coaches. The rail system comprises surface rail, tram, metro lines, subways, and underground while the inland waterways are made up of the lagoons, creeks, ports, and sometimes the lakes on which both ferries and hovercrafts are the major vehicles for mobility within the cities. City transport by air is usually by helicopter, especially in mountainous areas, and by overhead cables. The seaports serve as the interface between the land and the sea.

Nigerian roads are generally narrow, consisting of one lane that is poorly maintained and prone to flooding due to poor drainage. The result is inadequate capacity and poor conditions, leading to traffic congestion, reduced vehicle productivity, loss of man-hour, and increased vehicle operating costs. Nigerian cities also feature inadequate road furniture such as pedestrian facilities and bus stops/shelters/public conveniences and lack of other infrastructures such as towing vehicles and traffic control devices.

Many cities are seriously challenged by growth in the urban population which is rising rapidly. More than half of Nigeria’s population is estimated to live in urban regions. Lagos alone was estimated to grow by over 13.6 per cent between 2017 and 2020 and will continue to be one of Africa’s largest cities.

The rapid growth of the urban population puts serious pressure on existing urban facilities and infrastructure of which physical mobility is included. The challenge, therefore, is how to use the available urban space to meet the conflicting and ever-increasing demands for infrastructure and services and the overall development of the city.

Demand is high in most cities relative to the capacity of the system to accommodate traffic flow. Traffic congestion in cities is widespread, with travel times over two hours in Lagos and Mararaba – Abuja corridor, among others. Traffic control devices need substantial improvement in some cities, due to high congestion levels, with traffic standing still for up to 30 minutes at a time. In Lagos alone, over 1.00 million trips are made daily. Car ownership is low, but congestion levels are still high, implying that saturation levels of car ownership in the cities have been exceeded. Nigeria’s transport infrastructure stock is inadequate for the size of the economy and constitutes a major cost and constraint for both large and small businesses. Investments in strengthening Nigeria’s infrastructure will make a significant contribution to building a competitive economy. Given the scale of the investment required, partnering with the private sector will be critical. Therefore, significant effort will be required to attract private sector investment to ensure that the execution of the agreed priorities are timely and effectively delivered.

Reforms are thus needed in the urban transport sector to institute an effective mass transit system and develop a capacity for public transport planning, operation, and regulation. Furthermore, a key requirement is the development of integrated spatial planning and urban transport policies as the basis for determining infrastructure and public transport service development needs/priorities.

Some of the challenges faced in urban transportation planning include:

- Lack of Legislative and policy frameworks that will enhance the entire transport sector guaranteed safety in every mode of transportation.
- Inadequate result-oriented and didactic training, research, and development in all areas of transportation, including transport policy administration and management.
- Mitigating pollution arising from all the modes of transportation.
- Making transportation affordable and accessible as a social right and to extend its benefit to the disadvantaged – the poor, elderly, school children, the physically challenged.

To address the above, it requires improvement of the virility of the urban transport system, to ensure its people-centeredness, which underlines a strategic conceptualization that sees the Nigerian urban transport system as part and parcel of national development aspiration.

Recently, the government had taken some steps to improve the sector by signing executive order covering the administration of the ports including the water sports and the seaports. The law amongst others provides for:

- Banning illegal reception for non-designated persons at airports.
- Processing of business visas within 2 days and Instant prosecution of bribe-takers
- Commencement of 24-hour operations at the Apapa Port, and
- An outright ban of touting by officials or unofficial persons at all airports, land, and seaports in Nigeria.



### 3.1.7 Specific Challenges across the Sub-sector

#### ■ Air Transport

- i. Poor utilization of the Bilateral Air Service Agreement (BASA) due to the absence of national carrier and the limited capacity of indigenous airlines.
- ii. Most indigenous airlines do not have the required capital base which makes it difficult for them to procure aircraft that meet a world-class standard that will allow them to fly internationally. The absence of a national carrier for the utilization of BASA frequencies in reciprocity is a challenge.
- iii. Exit and reduction in the frequency of foreign airline operations. Some foreign airlines recently withdrew their operation out of the country, while some reduced the frequency of their flights into the country due to difficulties associated with the repatriation of proceeds from ticket sales.
- iv. Also, due to the high cost of aviation fuel, some foreign airlines have resorted to flying to neighbouring countries for technical stops.

#### ■ Inland Waterways

- i. The high rate of siltation and sedimentation has been the main limitation to navigation on the waterways as the required depth of water and average velocity discharge for vessels is drastically reduced by the accumulation of silt/debris (sand, gravels, boulders, etc.) resulting from sediments transported.
- ii. Delay in the passage of outstanding National Inland Waterway Authority Bills at the National Assembly. The low rate of private sector investment in infrastructure development is a fall-out of the delay in the passage of the NIWA Act.

#### ■ Maritime

- i. The collapse of Cargo evacuation corridors leading to difficulties in cargo movement from the ports to their destination thereby resulting in high logistics costs.
- ii. Delay in the passage of outstanding Bills at the National Assembly (National Transport Commission bill, port and harbour bill).
- iii. Lack of berths for cadets' sea time training- This is the major challenge faced by the Maritime industry in bridging the indigenous manpower gap. Eighteen months' sea training is a mandatory requirement for STCW Certification training for cadets. This requirement is lacking because of absence of a training berth.
- iv. Unfavourable Terms of Trade: Currently, our imports are based on Cost Insurance and Freight while exports are based on Free on Board. The implication is that our financial institutions and shipping companies are eliminated from participating in international trade.

#### ■ Land

- i. Uncompleted Narrow-gauge Track Rehabilitation: Several rail track rehabilitation and signaling projects are stalled and not progressing due to low budgetary provision.
- ii. Inadequate rail connections to some of the seaports and non-rail links to the airports.
- iii. Delay in the passage of the Nigerian Railway Authority Bill has slowed down the concession process.
- iv. Non-approval of the National Transport Policy and the National Urban Transport Policy which makes the sector unregulated.

- v. Weak synergy among the Ministries, Department, and Agencies (MDAs) in road planning, designs, funding, construction, and rehabilitation.
- vi. Low patronage from the private and public sectors in the NITT training institution.
- vii. Non-inclusion of the qualification of NITT graduates in the Scheme of Service.

### 3.1.8 Aspiration/Targets for the Transportation Sector

The overall vision of the transportation sector is “to achieve an adequate, safe, environmentally friendly, efficient, affordable, and sustainable integrated transport system within the framework of a progressive and competitive market economy for Nigeria”. This vision has been broken down into the following sub-sector strategic goals.

#### ■ Roads

- i. Develop, operate, and maintain a safe, efficient, and effective road network;
- ii. Facilitate economic and social development through the efficient movement of people and goods;
- iii. Enhance connectivity between economic centres of the country;
- iv. Improve linkages to other transport modes to enhance intermodal transportation; and
- v. Secure and mobilize funds from the private sector, multilateral agencies, and concessionary loans for highway development.

#### ■ Rail

- i. Provide adequate rail infrastructure for even economic development of the country;
- ii. Sustain continued rail network rebuilding and expansion so that rail services are commercially viable, both passenger and freight;
- iii. Develop the capacity to sustain and continuously improve the quality of rail infrastructure; and
- iv. Create an enabling environment for private sector participation in the provision of road and rail infrastructure.

#### ■ Aviation

- i. Provide a safe, secure, and comfortable air transport sector that is self-sustaining and pivotal to socio-economic growth, in line with international best practice.
- ii. Transform the aviation industry into an efficient, profitable, self-sustaining, effective, and preferred mode of transportation;
- iii. Establish Nigeria as the regional aviation hub in West Africa; and
- iv. Fast-track the completion of airport cargo and passenger handling terminals to increase capacity from 208,424 to 276,848 tons and 15 million to 45 million passengers, respectively, by 2021.

#### ■ Maritime

- i. Provide safe, efficient, and cost-effective maritime transport services for the country, ensuring all waterways are fully navigable;

- ii. Significantly increase the capacity of the maritime sector with an emphasis on inland waterways transportation;
- iii. Attain enhanced performance and competitiveness of seaports;
- iv. Improve port productivity and competitiveness;
- v. Implement a port management model that attracts full private sector involvement and promotes market principles; and
- vi. Establish Nigeria as a regional port hub.

#### ■ Urban transport

- i. Develop the capacity to sustain and continuously improve the quality of transport services, access control, and land use policy in major urban areas;
- ii. Set the base for urban rail transport: introduce Rail Mass Transit in urban areas of over 1 million people (urban rail and rolling stock);
- iii. Secure funding from the private sector, multilateral agencies, and concessionary loans to embark on Transit Oriented Development (using Abuja transit-way as a model);
- iv. Develop, operate, and maintain Urban Traffic Control systems; and
- v. Improve public transport planning and regulatory function.

### 3.1.9 Priorities Area in the Transportation Sector

The priorities areas for the Transportation Sector as of 2020 are as follows:

- i. **Priority Area I:** Strengthens of Legal Framework and approval of all Draft Policies within the sector to harmonize standard regulation and opening sector and State and LGA other private participation;
- ii. **Priority Area II:** Complete rehabilitation of all narrow-gauge rail lines and construction of standard gauge rail lines for the carriage of goods and passengers in line with the Twenty-Five (25) year Railway Master Plan;
- iii. **Priority Area III:** Leveraging on Public-Private Partnership (PPP) arrangements for the development of Deep-Sea Ports, Inland Dry Ports and Truck Transit Park (TTP) to facilitate both local and international trade;
- iv. **Priority Area IV:** Security and safety in the Ports and inland waterways nationwide; and
- v. **Priority Area V:** Implementation of the ECOWAS protocol on trade facilitation.

### 3.1.10 Transport Sector Goals

**Table 3.4: Transport Sector Short-term Goals**

Sub-sector	2021	2022
Roads	i. Upscale road infrastructure with most highway roads in a good state;	iii. Restore degraded sections of the Federal highway network to improve connectivity over a distance of 4,000km.

	ii. Enhance connectivity between economic centres of the country/Refurbish and expand cross-national highways.	
<b>Rail</b>	iv. Rehabilitate rail network; Increase emphasis on rail transportation, both passenger and freight.	v. Construct strategic rail projects to connect major economic centres across the country. The target is to complete the construction of the Lagos- Kano, and Lagos - Calabar rail projects.
<b>Aviation</b>	vi. Rehabilitate existing airports; Construct a set of four airport terminal; Improve airport and airline safety.	vii. Offer concessions on the four major airports to improve infrastructure maintenance and boost operational efficiency
<b>Maritime</b>	iii. Increased capacity of inland waterways transportation; Enhance the performance and competitiveness of seaports.	ix. Dredge 1,000km of inland waterways and reinforce riverbanks to increase the capacity of inland waterways.
<b>Urban</b>	x. Develop, operate, and maintain Urban Traffic Control (UTC) systems; Develop the capacity to sustain and continuously improve the quality of transport services.	

Source: Review Team

**Table 3.5: Transport Sector Medium to long-term goals**

Sub-sector	2023 (Medium-term)	2043 (Long-term)
<b>Roads</b>	Rehabilitate/dualize all major economic routes Rehabilitate major link roads Restore 70.0 per cent of Federal and State roads	Dualisation of North-South routes; Dualisation of all East-West routes  Restore 100.0 per cent %+ of Federal and State roads
<b>Rail</b>	Continue network rebuilding and expansion so that rail services are commercially viable	High-Speed rail network between major cities.
<b>Aviation</b>	Upgrade and expand International airports	Establish Nigeria as the regional aviation hub in West Africa
<b>Maritime</b>	Improve port productivity with further reduction in turnaround time for vessels.	A regional port hub in West Africa.

	<p>Enhance competition of the ports.</p> <p>Create a port management model that attracts full private sector involvement and promotes market principles.</p>	<p>All Waterways fully navigable</p>
<b>Urban</b>	<p>Improve synergies between land use planning and transportation planning in all cities.</p> <p>The set base for urban rail transport: Introduce Rail mass transit in urban areas of over 1.0 million people (urban rail and roiling stock) starting with Lagos, Abuja, Port Harcourt, Kaduna, and Kano.</p>	<p>Functioning urban transportation in all major cities.</p> <p>The urban rail network in all with a population greater than 1.0 million people.</p>

### 3.1. 11 Strategic Objectives for Transportation

Nigeria's transport infrastructure is crucial to the development of other sectors of the economy. The current size of the infrastructure stock is inadequate for the size of the economy. Given the size of investments required, partnering with the private sector for investments in the sector is a key strategic objective of the Government.

The key activities enumerated in this regard include:

- Establishment of a robust capital project development framework to encourage and increase PPPs to deliver critical projects, such as roads, rail, seaports, and airports;
- Review of Infrastructure Concession Regulatory Commission Act to resolve conflicting legislation with the Bureau of Public Enterprises and Bureau of Public Procurement Act and strengthen the Commission's regulatory mandate to facilitate private investment;
- Harnessing of the existing pool of sustainable development funds to assess the viability and bankability of critical infrastructure projects;
- Leveraging on the sustainable and alternative mix of funding for critical infrastructure projects, including project financing initiatives, infrastructure bonds, diaspora bonds, and value-capture financing;
- Fast-tracking the completion of airport cargo and passenger handling terminals to increase capacity from 208,424 to 276,848 tons and 15.0 million to 45.0 million passengers, respectively, by 2021;
- Completing the road sector reforms to establish a Road Authority and a Road Fund to enhance best world practice in the administration of road network development and management in the country; and
- Ensuring the approval of the Tolling Policy so that some of the major dual carriageways can be concessioned for maintenance and tolling while the government utilizes the saved funds from the concession for other critical roads in the federal road network linking to the nation's refineries, ports, NNPC depots, and agricultural hubs, etc.

Based on these strategic objectives, a set of objectives have been established for each sub-sector.

#### a) Roads

The dominating pillar of the Nigerian transport sector is the road network. With a road density of 21 km per 100 km<sup>2</sup>, Nigeria is ahead of the West African average but behind international and BRICS benchmarks. Furthermore, most roads are in very poor conditions. Hence improving the condition of most highway roads is a central priority; as is expanding the capacity of the national road network to significantly enhance connectivity between the northern and southern economic centres of the country in the short to medium term. Furthermore, the rehabilitation of all major economic routes is envisaged, with a subsequent dualisation of the major North-South and East-West routes by 2043.

## **b) Rail**

In the short to medium term, the rail network needs to be completely rehabilitated or rebuilt, with significant expansions which will also cover linkages to other modes of transportation such as ports and airports. This will substantially increase the emphasis on rail transport. The long-term vision for 2043 envisages a high-speed rail network between major Nigerian cities, transforming the rail sector into an adequate and viable transport option for passengers and freight, and for rail to connect to neighboring countries to become a viable transport option for the ECOWAS region.

## **c) Aviation**

In the short term, the objective is rehabilitation and scaling up of the existing airport infrastructure, to meet the requirements of increased (and further increasing) air passenger traffic. Further emphasis is placed on improving airport and airline security to align with international standards by 2023 and coupling this with the expansion and improvement of the nation's international airports. The 2043 goal for Nigeria is to become the undisputed aviation hub in the region.

## **d) Maritime**

The aspiration for the maritime sector is to significantly increase its capacity with emphasis on transportation of passengers and freight via inland waterways, expansion of current ports throughout Nigeria, and establish Nigeria as a regional Port hub. This requires investing significantly in port infrastructure, making the inland waterways network navigable all year round, and building human and physical capacity for inland water navigation and deep seaports in the short-term. Ramping up the performance, efficiency, and competitiveness of the ports and inland waterways is also a central priority for 2023. For that purpose, a set of requirements have to be met, in particular, reducing vessel turnaround time, fostering inter-port competition, and improving safety and security at the ports. Nigeria's aspiration in the maritime sub-sector is to be the major seaport hub for West Africa by 2043.

## **e) Urban Transport**

Urban transportation consists of core transport infrastructure (road and rail), public transportation infrastructure (bus lanes, walkways, bus stations), and fleet (buses, taxis, ferries). Urban transportation aspires to develop the capacity to sustain and continuously improve the quality of transport services in urban areas. In the short term, the focus will be to conduct maintenance on roads in urban areas, introduce high-capacity buses to alleviate congestion in the worst areas and modernize terminals, hubs, and motor parks. In the medium term, the focus will be on introducing Rail mass transit in urban areas of over 1.00 million people (urban rail and rolling stock) starting with Lagos, Abuja, Port Harcourt, Kaduna, and Kano. By 2043, the vision is to have functioning urban transportation in all major cities and an urban rail network in all cities with a population greater than one million.

### **3.1.12 Private Sector Expectations and Priorities**

- Addressing the state of undercapitalization, especially within the aviation sub-sector, and the sector's weak corporate governance;

- Reducing the high operational charges and tariffs needed to operate in the transport sub-sectors;
- Developing connectivity to address the limited intermodal connectivity between ports, airports, and roads, and limited connectivity with other African and regional hubs;
- Establishing coherent policies such as road standards, axle load policies, and ease of securing the right of way, to facilitate infrastructure development;
- Improving public contracting, tendering, and quality control;
- Revising laws that place the construction and management of road, rail, aviation, and maritime infrastructure under the exclusive purview of the federal government;
- Establishing fiscal incentives (e.g., pioneer status), particularly for ancillary and rolling stock in all sub-sectors; and
- Increasing the concession management of infrastructure, aligning with bilateral service agreements, reducing agency fees, and improving infrastructure maintenance capabilities.

### 3.1.13 Enablers

- A low-interest rate regime, especially for aircraft leasing and purchase;
- Ancillary infrastructure: power, airport hotels, scanners, radars, lighting on runways, etc., that allow for more efficient operations;
- Rail connections between key intra-city airports to aid transfers;
- Investments to improve aviation security, acquisition of newer planes and local aviation maintenance capability;
- Federal government commitment to adopting a PPP framework for road construction, maintenance, and management;
- Access to concessionary (cheap) financing and long-term capital, right of way and tax exemption and duty waivers;
- Adequate and efficient maintenance of the existing road network;
- Government support in terms of guarantees required to enhance the viability of projects in the sector;
- Reforms like the 2005 port reforms to encourage private sector participation in developing rail infrastructure;
- Reconnecting the railways to the ports and ensuring the provision of serviceable rolling stock;
- Policy stability;
- Reducing the number of government agencies at the ports;
- Improving port infrastructure to accommodate current and emerging traffic at the seaports;
- Continue with the remodeling of airports, focusing on maintaining the highest operating standards;
- Connect all the 3 airports in Lagos with a monorail to allow for ease of access;
- Improve lighting on airport runways;
- Build transit parks for trucks along federal roads;
- Complete key projects in the roads sub-sector including – Lagos-Ibadan road; Second Niger bridge; Benin-Shagamu; East-West Road, Coastal Highway: Lagos, Warri, Port Harcourt, Calabar; Abuja Ilorin; and 4th Mainland bridge;



- Complete key projects in the rail sub-sector including heavy-duty rail projects for cargo traffic; Lagos blue and red line projects; East-west rail line (Lagos-Calabar); Abuja light rail; Lagos Kano rail line (Lagos-Jebba and Jebba-Kano); Lagos-Ibadan rail line; Abuja-Kaduna rail line; Ajaokuta-Warri rail line; and
- For the maritime sector, the priority would be to improve customs performance; tax exemption and duty waivers on equipment; ports infrastructure including greenfield development; deep seaports development; shipyards for shipbuilding and repairs; and inland waterways development to allow for an intermodal transportation system.

A review of the relevant infrastructure-related legislation in the transportation sector also identified the following **key legal enablers** for transportation infrastructure development:

- Federal Highways Act;
- National Railway Corporation Act;
- Nigerian Civil Aviation Authority Act;
- Nigerian Ports Authority Act; and
- Nigerian Inland Water Ways Act.

#### **a) Federal Highways Act**

The Act is investor-friendly as Section 2(4) empowers the Minister to engage other persons for the performance of functions set out in Section 2(1) -(3) of the Act. Furthermore, the Act does not conflict with the constitution, as section 2(9) fully recognizes the jurisdiction of the states to regulate the use of highways but asserts the superiority of the Act over the laws of any state on the subject. The Act is also flexible enough and encourages sub-national participation.

The conflict area in the Act is in the enforcement of the penal enactments in the Act, which is Sections 5-18. There is no provision is made here to specify the court that has jurisdiction to try offenders. The Act cannot be said to be an obsolete law, but there is a need for legislation to ensure and enforce regular maintenance of federal highways. The Act is also flexible for legislative openness, but there is a need to legislate on the duty of government to establish a Fund for and to ensure regular maintenance and reconstruction of the federal highways.

#### **b) Nigerian Railway Corporation Act**

The Nigerian Railway Corporation bill was passed in 2016 to repeal the Nigerian Railway Corporation Act, Cap N129 LFN 2004, and to enact the Nigerian Railway Bill, 2015. The act now empowers the Directorate of the Corporation to implement the National Rail Policy of the Federal Republic of Nigeria; grant concessions and receives concession fees; monitor concessionaire investment obligations; determine public service obligations and payment of subsidies for passenger services; and undertake any other business which in the opinion of the Board is capable of improving the mandate of the Directorate. Subject to the provisions of the Act, the Corporation shall be responsible for the concessions of core operational assets such as rail tracks, stations, and other facilities shall be identified and concessioned to private rail sector operators within the framework of the vertically integrated concession model for proper funding and effective service delivery.

The corporation shall consider for concessioning the railway networks into separate parts as follows:

- (i) Western Railway
- (ii) Eastern Railway
- (iii) Central Railway
- (iv) Lagos Rail Mass Transit.

Subject to the provision of the Act concession may be granted in- commercial operation of the rail services; operation, maintenance, renewal, remodeling of existing railway system; operation of commercial freight and passenger service; operation of passenger service under public service obligation; and making railway infrastructure available to third parties for the operation of passenger service.

The holder of a commercial operator license may carry out commercial business or its ancillary services to passenger or cargo transportation within and outside the country specified in the license. The Corporation may issue Commercial Operation Licenses to: One or more of the commercial operation companies or one or more entities that are not major commercial operation companies within the rail transport sector.

Also, subject to such terms and conditions as the Corporation may fix in the license, and operation maintenance, renewal, remodeling of existing railway system shall authorize the licensee to carry on operations within Nigeria. The operation maintenance, renewal, remodeling licensee may have an obligation to carry out the operation, maintenance, and other ancillary services according to the provisions of the license issued by the Corporation to such licensee.

### **c) Nigerian Ports Authority Act**

The Nigeria Ports Authority (NPA) is established by Section 1 of the Act, and Section 2(i)(e) provides for executive directors of the authority though without specifying their number. Section 7 of the Act empowers NPA to manage, supervise, and control or take part in the management, supervision, or control of any company or undertaking under its purview. The Act also allows for sub-national participation based on the provisions of Sections 7 and 8(b) and 9.

The conflict area of this Act relates to the acquisition of land and compensation according to Sections 24 and 29(2) of the Act. The section places jurisdiction on the High Court exercising jurisdiction in the place where the land is located, while the Federal High Court does not have jurisdiction over land disputes.

The law is generally effective but being legislation on a subject that has international correlations, there will always be the need to stay abreast of international best practices, to ensure compliance. There are few or no restrictions in the Act; therefore, there is legislative openness for infrastructure development inherent in the Act.

### **d) National Inland Waterways Authority Act**

Sections 13 and 23(i) of the Act limits participation by the private sector. Under this Act, activities, and functions of the National Inland Waterways Authority by any person other than the Authority is

a punishable offence. The Act also prohibits persons from taking sand, gravel, or stone from the waterways, making this legislation unfriendly to investment.

Waterways are not defined in the Act, except in section 10 which lists out sundry rivers across the country. Private participation in the activities listed in Section 23 is prohibited without limitation even when it is obvious that such activities are the major economic activities of the locals in the affected areas.

The authorities are not equipped to perform all the functions listed in Section 23 without issuing licenses to the private sector. Again, provisions 23(i) (a) of the Act are a limitation of the powers of the states under the Land Use Act. Although the Act is not in conflict with the constitution, it does not encourage sub-national participation due to the restriction expressly imposed by Section 23.

However, the National Assembly currently has a Bill for an act to repeal the national inland waterways authority act cap. N47, LFN 2004 and to enact the National Inland Waterways Authority act to provide for the management, regulation, and development of the national inland waterways and to promote private sector participation in the development of the national inland waterways in Nigeria and for other related matters. The objectives of this Bill are to:

- develop and improve the National Inland Waterways for water transportation and navigation purposes;
- increase and promote private sector investment and participation in the management and operation of the assets of the National Inland Waterways Authority;
- provide for the technical and safety regulations of the National Inland Waterways;
- promote inter-modalism in the transport sector; and
- provide an alternative mode of transportation for the evacuation of goods and persons, and implement the National Transport Policy as it concerns National Inland Waterways in Nigeria.

If the bill is passed into law, the Authority may grant a concession, lease, contract, or permit subject to such terms and conditions as the Authority may specify, authorizing any person to provide any service or facility or any National Inland Waterways Service or facility.

#### **e) Nigerian Civil Aviation Authority Act**

Section 1 of the Act establishes the authority and spells out its functions in Sections 7, 35, and 36.

There is no express provision enabling the authority to concession any aspect of its functions to the private sector. The Act is constitutional. However, the Act does not permit sub-national participation, as it is listed in the Exclusive Legislative List. Section 22 of the Act contains healthy provisions for land acquisition by the authority which removes or at least remits conflict, thus there is no legislative conflict. The law is not obsolete but there is a need to ensure that it is in line with global best practices. Regarding legislative openness, there is no limitation inherent in the Act, but there is a need for legislative flexibility to enable engagement of the private sector.

#### **f) National Transport Commission Bill, 2016**

The purpose of the Bill is to establish the National Transport Commission as an effective, impartial and independent regulatory authority in the transport sector and to set out the objectives, functions, and powers of the Commission; promote the implementation of the national transport policy; provide an economic regulatory framework for the transport sector or regulated transport industry; provide a mechanism for monitoring compliance of government agencies and transport operators in the regulated transport industry with relevant legislation and advice Government on matters relating to the economic regulation of regulated transport industry; provide for efficient economic regulation of the transport sector; protect the rights and interests of service operators and users within Nigeria, and create an enabling environment for private sector participation in the provision of services in the transport sector.

### **3.2 Energy Infrastructure**

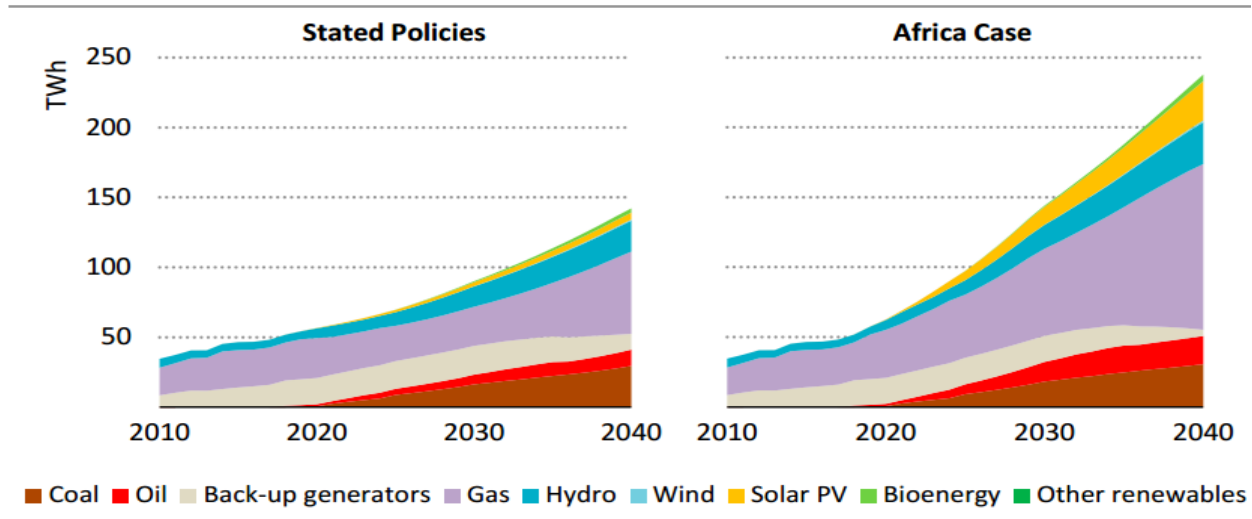
#### **3.2.1 Profile of Nigeria's Energy Infrastructure**

Nigeria is Africa's largest economy - and Africa's biggest chemical producer and most populous country - but also has one of the widest energy gaps in the world. With its fast-growing population, the country is in clear need of improved power sector. The country's current installed capacity as at October 2020 is reported at 12,500 megawatts (thermal, 10,142 MW; and hydro, 2,380 MW), but in practice only about 3,200 megawatts is transmitted. The government's aim to boost electricity access from 45% (rural: 36% urban: 55%) in 2020 to 90% by 2030 will drive even more demand for electricity (IEA Africa Energy Outlook, 2019, 2020).

The country has an abundance of most of the energy sources (fossil fuels, hydro, solar, tidal, geothermal, nuclear, and biomass) for power generation, which if properly harnessed can meet the country's energy needs in the short to medium term as well as to export to other countries. The country's abundant energy sources have the potential to propel the economy into one of the top economies through its use in the industries, housing, and urban development; yet power generation by back-up-generators remain top on the list of Nigeria's electricity generation technology.

For instance, although about 80% of power generation comes from natural gas; most of the remainder comes from petrol oil with Nigeria being the largest user of oil-fired back-up generators in Africa (IEA Report (2019)). Natural gas remains a key source of power in the country, notwithstanding the nascent shift towards solar power as the country starts to exploit its large solar potential. In particular, power generation from back-up-generators surpassed hydro power generation between 2010 to 2020 but the later is projected to rise of the next decade (2020-2030) given

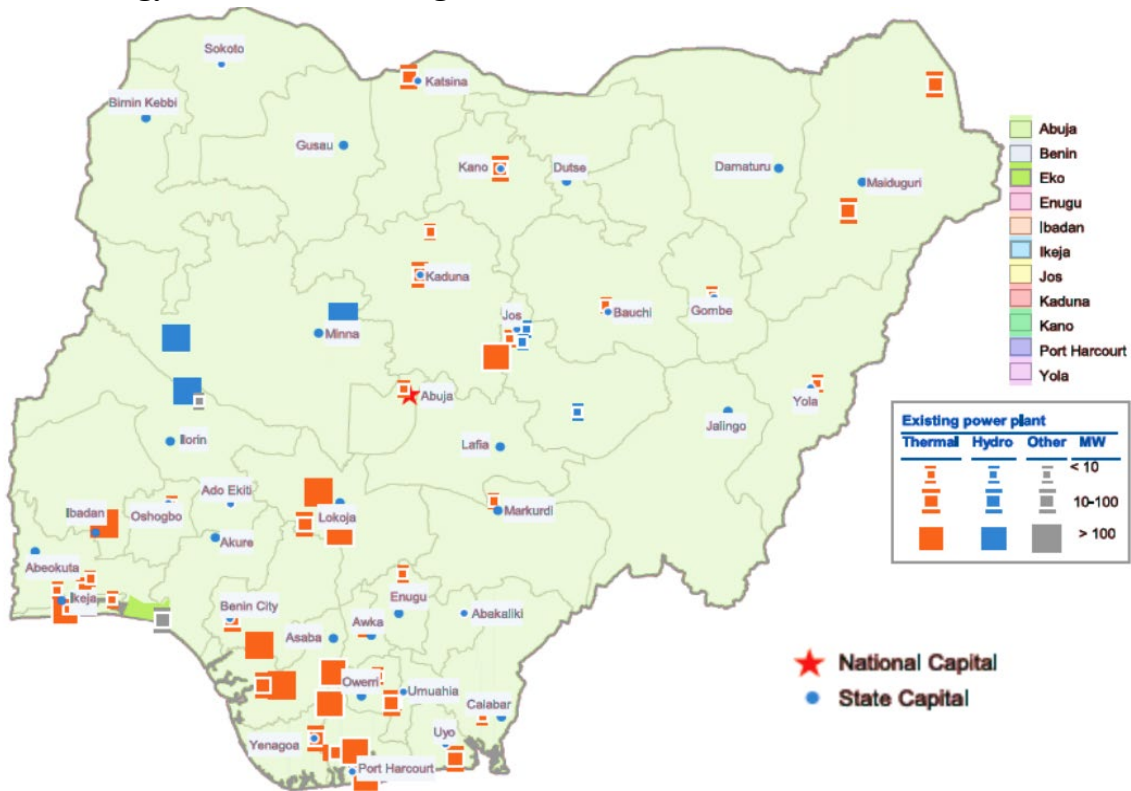
**Figure 3.6: Nigeria Electricity Generation by Technology**



Source: IEA Africa Energy Outlook, 2019.

The country’s potential to become one of the world’s largest economies will remain just an aspiration without the electricity required to pursue aggressive industrialization. The role of electricity in powering the growth of small and medium scale industries makes it even more imperative to transform the Nigerian power sector. In pursuance to this, the Nigerian Government has over the last decade embarked on comprehensive energy reforms to fast track the development of energy infrastructure and deregulates the energy market for effective competition and efficient service delivery. The Nigerian government identified five electricity policy priorities (to boost electricity supply), namely, to: (i) attract investment to the energy sector; (ii) solve barriers in the gas-to-power value chain; (iii) plan for renewable energy integration; (iv) boost revenue collection to support DisCo viability; and (v) understand demand which would guide prioritization (Energy for Growth Hub, 2018). In this regard, the Nigeria government in 2013 privatized part of the power sector which is hoped to promote efficiency, attract private investment, and increase generation, but this has yet to deliver results. As at October 2020, an estimated 20 million Nigerian household are without access to electricity (IEA Africa Energy Outlook, 2019, 2020).

**Figure 3.7: Energy Power Plants in Nigeria**



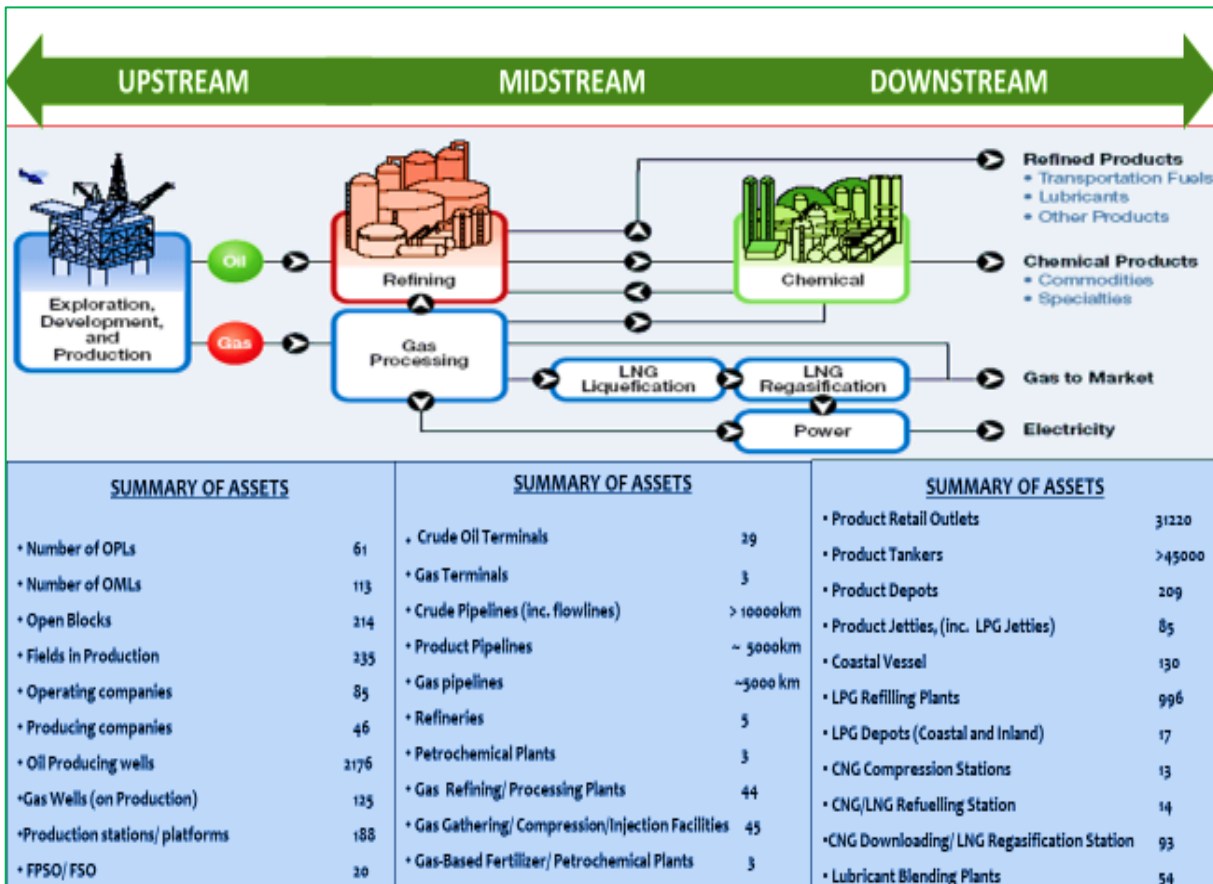
**Source:** Natural Earth; African Development Bank.

## ■ Oil and Gas Infrastructure

Nigeria’s Oil and Gas infrastructure is divided into three main segments: the Upstream segment (production of crude oil and gas mostly for exports); the Midstream segment (refining and gas processing) and the Downstream segment (includes oil refineries, petrochemical plants, petroleum products distributors, retail outlets and natural gas distribution).

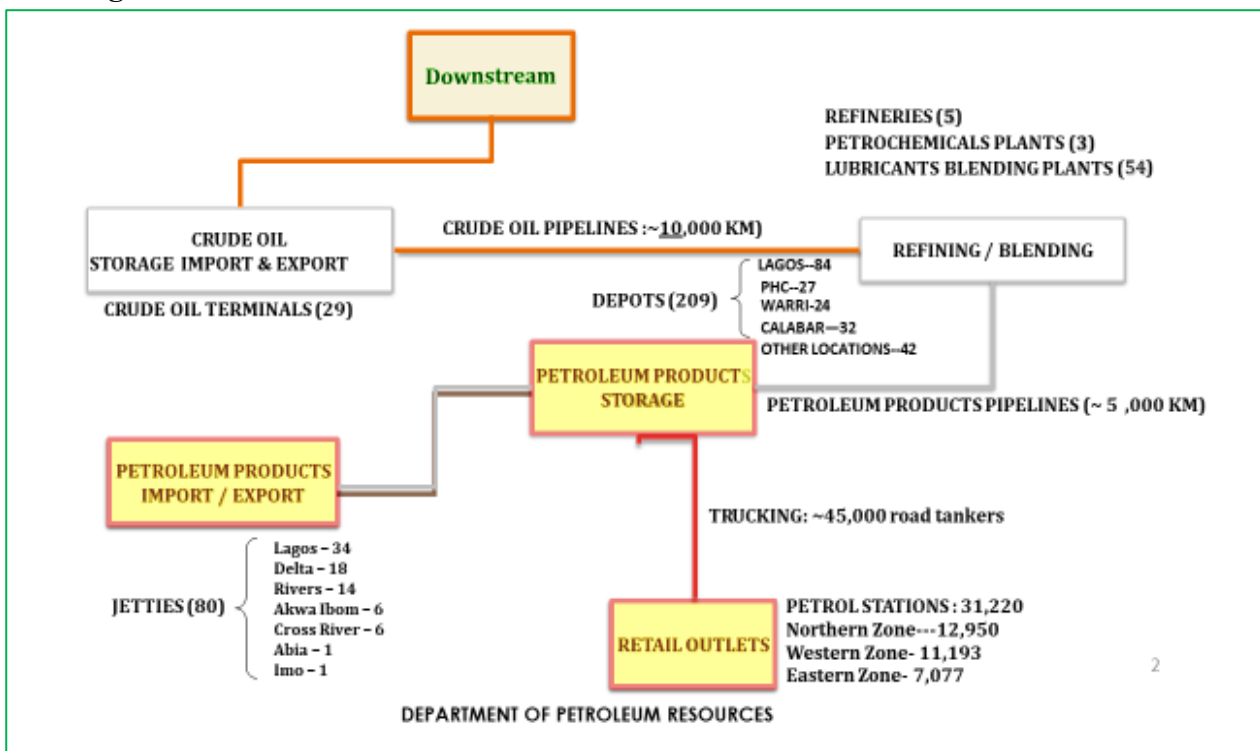
Nigeria is the 7<sup>th</sup> largest oil producer and 9<sup>th</sup> largest gas producer in the world with proven oil reserves of about 36.6 billion barrels and proven gas reserve estimated to be about 182.8 Trillion Cubic Feet [TFC]. Petroleum accounts for approximately 95.0 per cent of total foreign exchange earnings and 70.0 per cent of Government revenue, resulting in the country’s near total dependence on oil and gas revenue for national development.

**Figure 3.8: Nigeria Oil and Gas Infrastructure Landscape**



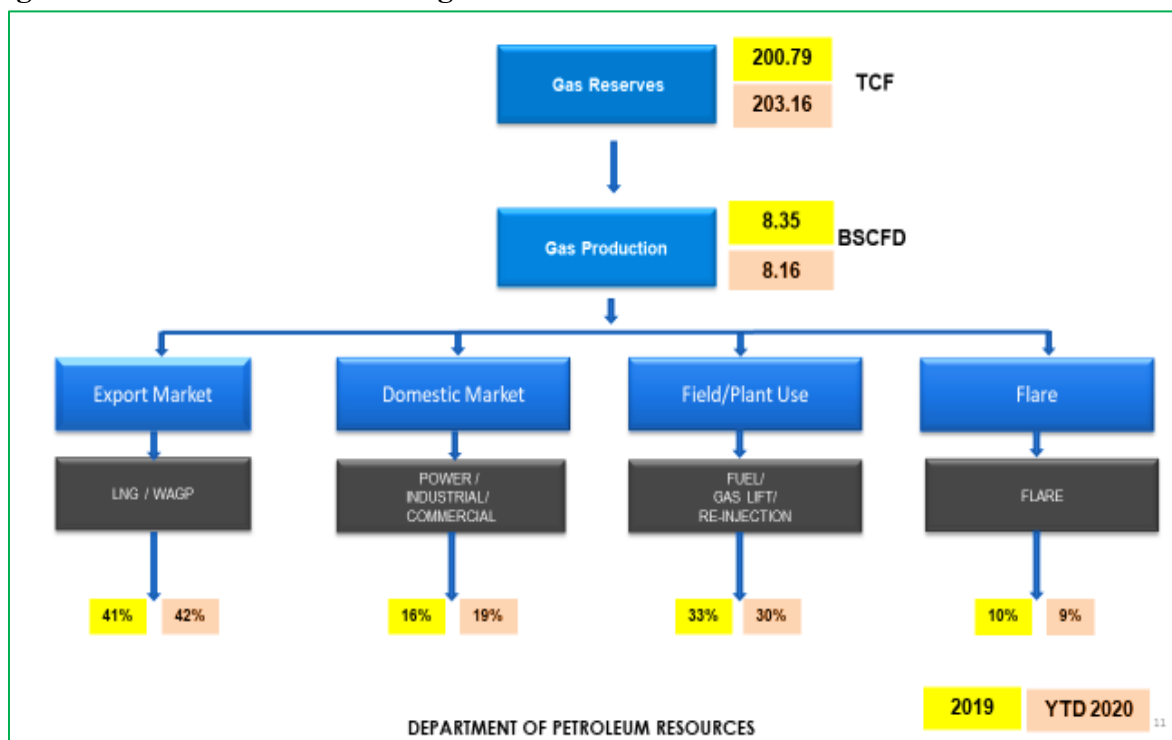
Source: Department of Petroleum Resources – DPR.

**Figure 3.9: Overview of Mid and Downstream Infrastructure**



Source: Department of Petroleum Resources – DPR.

**Figure 3.10: Dashboard of the Nigerian Gas Sector**



Source: Department of Petroleum Resources (DPR).

**Table 3.6:** Nationwide Distribution of Liquid Petroleum Gas (LPG) Refilling Facilities as December 31, 2019

Zones	No. of Plants	Total Plant Storage Capacity (Mt)
NORTH-WEST	77	4249
NORTH-CENTRAL	104	4659
NORTH- EAST	24	944.71
SOUTH- EAST	141	5799
SOUTH- WEST	292	10347
SOUTH-SOUTH	351	13663.02
<b>TOTAL</b>	<b>989</b>	<b>39661.73</b>

Source: Department of Petroleum Resources (DPR).



**Table 3.7: Status of Compressed Natural Gas (CNG) Facilities Distribution as at 31<sup>st</sup> December, 2019.**

STATE	Compression Station	Downloading Station	Refueling Station	Total
ABIA	1	3		4
AKWA IBOM	1			1
DELTA	2	9	1	12
EDO	1		7	7
ENUGU			1	1
IMO		4		4
KADUNA		1		1
KOGI		1		1

Source: Department of Petroleum Resources (DPR).

As at 2019, Nigeria's oil reserves stood at 1,980 thousand daily barrels. The crude oil reserves fell by 481 million barrels to 36.972 billion barrels in 2018 as a result of the fall in the global oil price and the drop to 29 from the initial 46 of the nation's oil rig in 2014. Also, Nigeria's gas reserves increased by 7.3 per cent from 187 trillion cubic feet (tcf) to 200.79. The country's daily production stood at 1.2 billion standard cubic feet with 41 per cent of it exported while 48.0 per cent went to the domestic market, and 11.0 per cent flared. Nigeria installed refining capacity is 446,000 bpd with contribution to Africa's total refining capacity at 12.6 per cent.

**Table 3.8: Oil and Condensates Reserves (MMBbls) as at December 31, 2019**

Year	Oil Reserves	Condensate Reserves	Total
2014	31,870.00	5,578.24	37,448.24
2015	31,643.91	5,418.15	37,062.06
2016	31,271.77	5,467.41	36,739.18
2017	31,419.71	5,552.20	36,971.91
2018	31,667.75	5,334.35	37,002.10
2019	31,417.74	5,475.81	36,893.55
<b>New Oil Reserves Target: 40 Bln Bbls by 2025</b>			

Source: Department of Petroleum Resources (DPR).

**Table 3.9: Gas Reserves (Trillion Cubic Feet - TCF) as at December 31, 2019**

Year	Oil Reserves	Condensate Reserves	Total
2014	90.094	97.904	187.998
2015	97.208	94.857	192.065
2016	97.253	101.485	198.738
2017	96.36	102.730	199.090
2018	101.98	98.81	200.789
2019	100.69	102.47	203.162
<b>New Gas Reserves Targets: 210 TCF by 2025 and 220 TCF by 2030</b>			

Source: Department of Petroleum Resources (DPR).

The Nigerian National Petroleum Corporation (NNPC) owns a 5,120 km network of pipelines from its refineries. The Pipeline network supplies crude oil to the Nation's Refineries and evacuates refined products for distribution across storage Depots. The storage facilities owned by the NNPC include 37 Mega stations and 12 Floating stations; 258 tanks in 21 storage depots, 1 Product Terminal at Atlas Cove and 1 Crude Oil Terminal at Escravos; 3 Jetties at Apapa, Calabar Jetty, New Atlas Cove Jetty(NACJ)

and Single Point Mooring (SPM); 8 LPG Butanization Plants, with a combined holding capacity of 2.6 billion litres of PMS; and 8 Pump Stations to ensure desired flow rate and pressure. Other storage and transportation networks are owned by the Depots and Petroleum Marketers Association as well as the major petroleum companies and independent petroleum marketers across the country.

Nigeria has 4 Refineries (Port Harcourt I and II, Warri, and Kaduna) with a combined crude oil distillation capacity of 445,000 b/d. Nigeria maintained a deficit in total product supply with a large and growing deficit in gasoline, jet /kerosene, and diesel/gasoil. As a result, the country imports most of its petroleum products for domestic demand. Construction of new Refineries had been plagued by fuel subsidies concerns and lack of financing. Plans are on course for 200kpd Condensate refineries at Western Forcados Area and 2x300MMScfd Assah North Ohaji South Areas of Delta and Imo State respectively.

The country's plan is to open up the sector to investment, thereby increasing national reserves to 40 billion barrels at a production rate of 4mbpd by 2020. NNPC has begun significant turnaround maintenance (TAM) plan to revamp its deteriorated refineries. There are also plans for the private sector to construct additional refineries in Lagos, Bayelsa, and Kogi states. Investors within the country will be keen to seek out for alternative oil reserves for investment, thus, anticipating a higher return on investment. However, relative stability and rise in world crude oil price could contribute to foreign exchange earnings from the sector and encourage the increase in daily production.

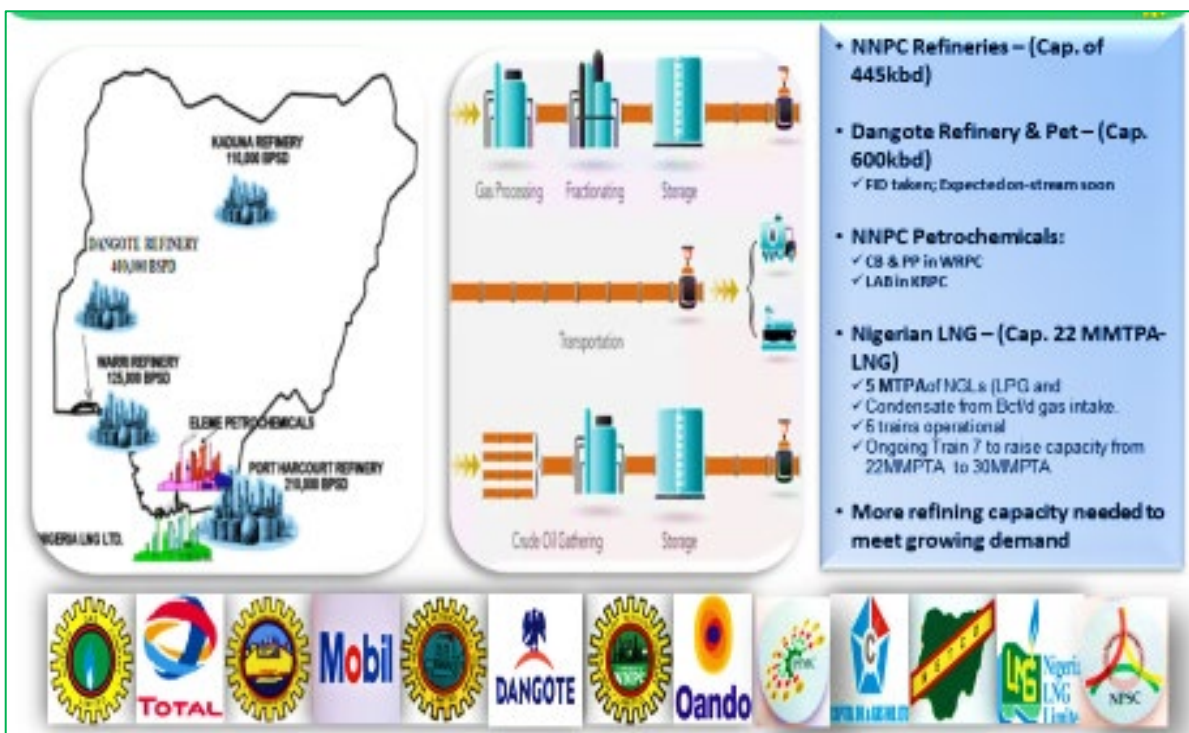
The average refining capacity utilization in Nigeria increased to 55.0 per cent in the fourth quarter of 2019, which is expected to stand at 56.20 per cent and 58.70 per cent in 2020 and 2021 respectively. By 2025, Nigeria is expected to lead refinery capacity additions from planned refineries. 34 new-build sites are expected to start operations from 2020 to 2025 with a capacity of 2,135 mpd.

**Figure 3.11: Oil & Gas Downstream Sector Value Chain of the NNPC**



Source: NNPC.

**Figure 3.12: Oil and Gas Midstream Sector Value Chain of the NNPC**



Source: NNPC.

The Nigerian Petroleum Industry remains the largest & most vibrant in Sub-Saharan Africa with lots of potentials, especially in the deepwater and untapped gas resources. Nigeria offers unique opportunities for investment in refining, storage, transportation, distribution, and marketing of petroleum products. The Gas Reform is anchored on a robust strategic framework that is focused on maximum economic impact through gas which aims to drive linkages with agriculture, manufacturing, and dispersed small enterprise through Power. The downstream oil and gas value chain is the focus of government intention in creating the necessary business environment through price liberalization and strong independent regulation. The Nigerian Regulatory framework when passed will offer fiscal rules of general application and open access regulations for the domestic oil and gas activities. NNPC is being transformed into a fully commercialized NOC by imbibing, acquiring, and modifying its internal operational and organizational processes for a more significant role.

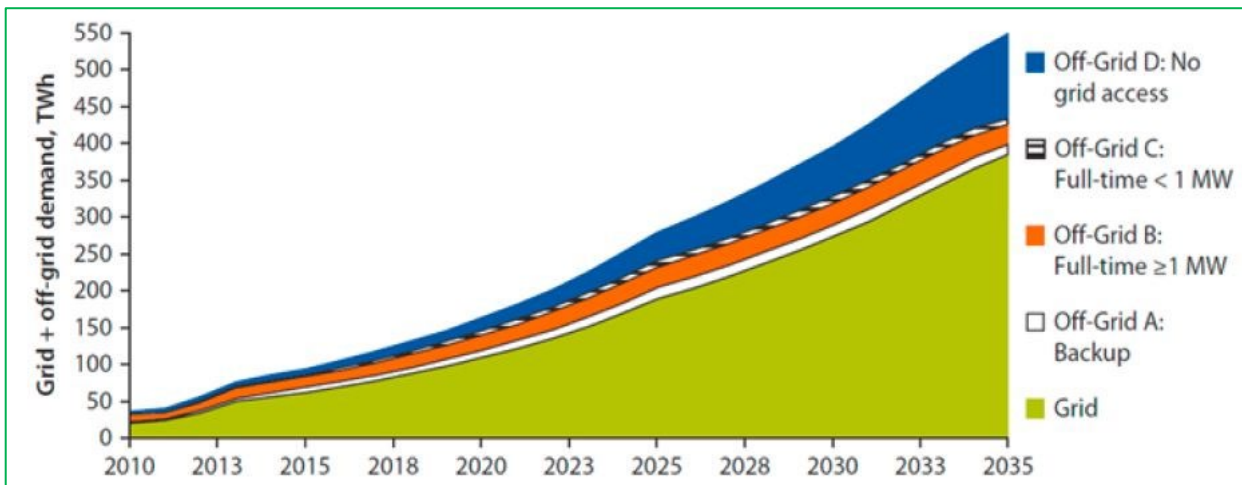
## **g) Power Infrastructure**

### **i. Generation**

The total installed generation capacity of the 29 grid-connected generating plants in Nigeria is 12,910.4MW. It is largely dependent on hydropower and fossil (gas) thermal power sources at the ratio of 14.5 per cent and 85.5 per cent respectively. Although it is important to note that currently only 3,500 MW to 5,000 MW is typically available for onward transmission to the final consumer due to recurrent challenges arising from gas constraint, maintenance and repair requirements, trips, faults, and leakages that make them unavailable for evacuation to the national grid.

The country's energy sector is faced with huge challenges, with the extensive losses attributable to the non-availability of the installed capacity and very high occurrence of significant technical and non-technical issues through the power supply value chain. The supplied electricity delivered to Nigerians is connected to the grid, while the consumers suffer from extensive power outages a situation that results in annual consumption of electricity per capita being amongst the lowest in Africa, estimated at less than 150 kWh. In response, however, the Government of Nigeria, in 2013 completed an extensive nine-year-long process of power sector reforms centered on the privatization of the country's main generation and distribution assets which have seen increased participation of private sector players. Fifty-five (55) licenses have been issued to private sector entities, out of which twenty (20) small private electric power generation plants are operational, while nine (9) are under construction. With the privatization of the PHCN and NIPP assets, there will be quite a few generation companies operating in Nigeria. In addition, to tackle the supply and distribution crisis, fifteen (15) Governments' owned generation and distribution companies were sold to private owners in 2013. This development has started to yield much-needed investment in generation assets.

**Figure 3.13: Projected Electricity Demand in Nigeria 2010- 2035**



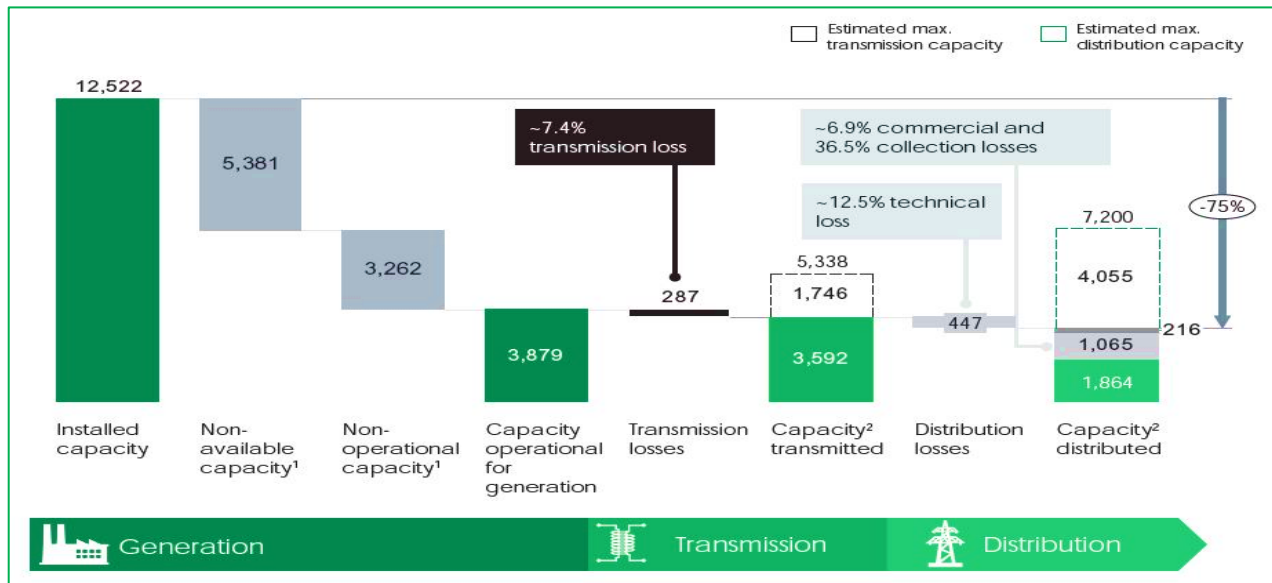
**Source:** GIZ, 2015 (FMP and Power Holding Company of Nigeria data and UN 2010 rural/urban population data (for off-grid D projections)).

According to IEA (2019) projections, grid electricity demand in Nigeria is expected to increase at a very sustained rate from 2018. Additionally, grid demand will also be augmented by off-grid supply to meet consumption needs in the rural areas.

## ii. Transmission

Turning to the Transmission segment of the electricity value chain which remains fully government-owned by the Transmission Company of Nigeria (TCN), a management contract was signed with Manitoba Hydro International in 2012 to reduce technical and commercial losses of the TCN. This was also aimed at fostering improvement in the business process and to split the company into the Transmission Service Provider (TCP) and Independent System Operator (ISO). As noted, the Nigeria’s transmission network has the capacity to wheel about 5,300MW of power. However, due to generation constraints, less than this capacity gets wheeled. Underinvestment in building new infrastructure and lack of appropriate maintenance of the current infrastructure has constrained the transmission network expansion. Transmission losses on the line stand at ~7.4% (based on January to July 2015 NESISTAT data). Nigeria’s transmission network comprises of 159 substations and 15,022 km of transmission lines. The transmission network has recorded a decline in system collapse incidents (partial and total) on the transmission grid between 2010 and 2015.

**Figure 3.14: Nigeria Power Sector Energy Flow (MW)**



Source: Nigerian Electricity Supply Industry Statistics (NESISTAT).

**Table 3.10: Installed Generation Capacity per Power Station (MW)**

Power Station	Installed Capacity (MW)	Average Available Capacity (MW)	Average Operational Capacity (MW)
Egbin	1,320	941	539
Afam VI	685	587	455
Okpai	900	536	375
Transcorp Ughelli	480	463	374
Jebba	570	431	262
Olorunsogo Gas	335	277	189
Ihovbor NIPP	434	374	182
Geregu NIPP	450	328	179
Kainji	720	444	173
Olorunsogo NIPP	760	260	171
Omotosho NIPP	500	306	169
Omotosho Gas	335	280	163
Shiroro	600	508	153
Geregu Gas	414	159	131
Sapele NIPP	450	184	111
Ibom	190	91	76
Sapele	504	219	69
Alaoji NIPP	720	158	67
Odukpani NIPP	561	234	64
Afam IV-V	724	3	2
Asco	294	270	0
Omoku	110	0	0

Trans Amadi	150	0	0
AES Gas	180	175	0
RIVERS IPP (Independent Power Producer)	136	0	0
<b>TOTAL</b>	<b>12,522</b>	<b>7,141</b>	<b>3,879</b>

**Source:** NESISTAT.

### iii. Off-Grid Electrification

In terms of off-grid electrification, important initiatives are rapidly emerging. In February 2017, the Federal Government of Nigeria launched an initiative to distribute 20,000 solar powered lighting systems to rural communities in the country. Further, Nigeria Intended Nationally Determined Contribution (INDC) to the United Nations Conference of Parties 21 (COP21) shows that the Federal Government plans to work towards adding 13GW of off-grid solar power by 2030.

At the state level, Lagos State Government remain the leader in terms of solar power via the Lagos Solar project which is a joint investment of Lagos State Electricity Board (LSEB) and the UK Department for International Development (DFID). It has an installed capacity of nearly 5 MWp of solar generated off-grid power for 172 schools and 11 clinics within Lagos State. An additional 1.5 MWp is being installed at public health clinics in Kaduna State under the Solar Nigeria programme by DFID. Several other off-grid schemes with support from international partners has also emerged across the country.

As part of a broader set of COVID-relief measures, leading off-grid energy providers, including Power Africa partner's Lumos Nigeria and Zola Electric, as well as Sholep Energy, Arnergy, Cloud Energy LTD, and Sosai Renewables distributed free solar home system units to the most vulnerable communities in Lagos through the State Ministry of Energy and Mineral Resources

**Figure 3.15: Free Solar Home System Distribution by Major Off-grid Energy Providers in Nigeria**



Source: USAID Power Africa Initiative (2020).

## **h) New Policy Formulated with their Current Implementation Phase for Transmission**

### **i. Presidential Power Initiative (PPI)**

The PPI was conceived to upgrade and modernize the grid infrastructure of the bulk system from the high voltage lines to the low, making the operational grid to 7GW in the first phase, 11GW in the second phase and 25GW in the 3<sup>rd</sup> phase.

### **ii. 20 Years Transmission Expansion Master Plan**

The transmission network requires a robust plan for expansion and growth. With this in focus, TCN commissioned a world-class consultant (Messrs Fichtner of Germany) to carry out a 20-year Transmission Least Cost Expansion Master Plan. This plan which has been completed addressed in detail the following: demand forecast, projection of existing generation capacities availability, future generation candidates to be considered in the transmission and generation optimization studies, power system analysis (load flow, fault analysis and dynamics simulations), least cost generation and transmission analysis, cost estimations, financial analysis and environmental impact scoping. This report has been forwarded to NERC for approval for implementation to commence.

### **iii. Transmission Rehabilitation and Expansion Program (TREP)**

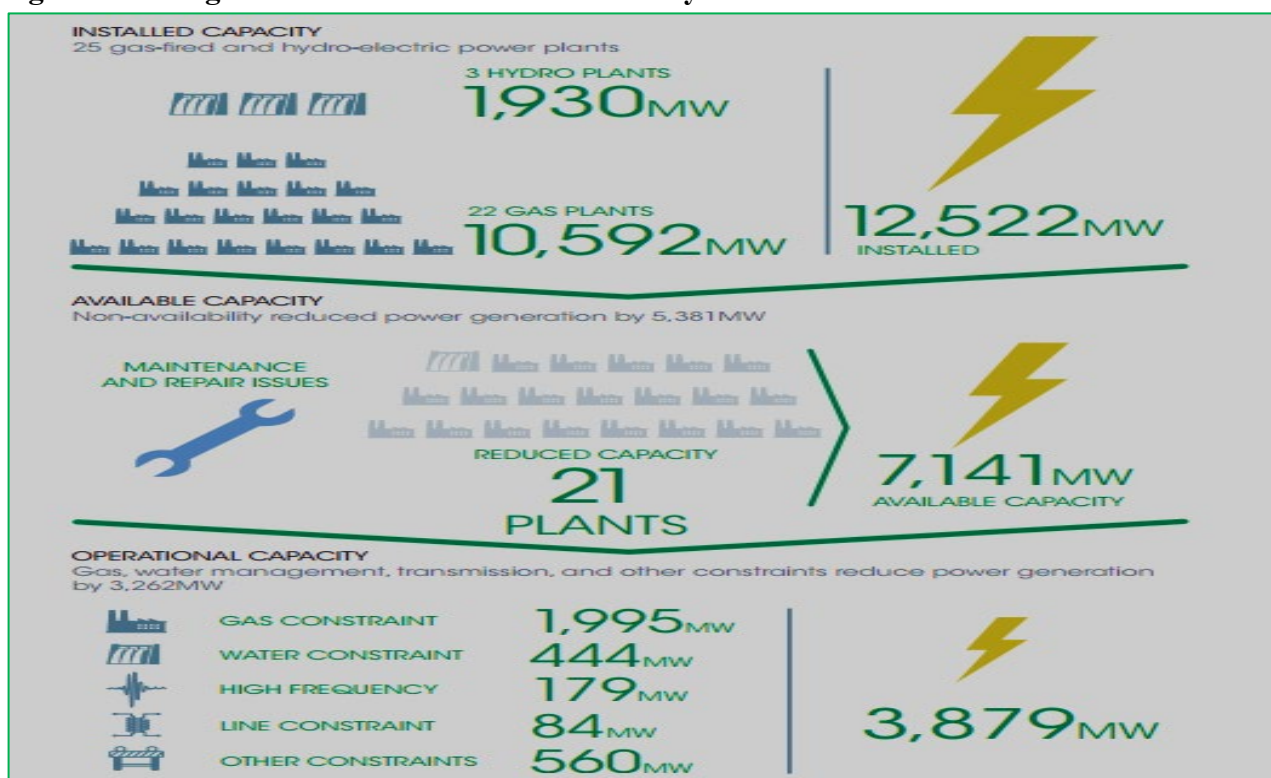
The Management looked at the existing infrastructure of the grid and identified lines and substations that require rehabilitation and also areas that require expansion. These projects were identified and put in the scheme called TREP. These projects are spread across the country and it is to expand the capacity of the grid by 20,000MW by 2022.



#### iv. Procurement of Supervisory Control and Data Acquisition SCADA and Automated Meter Reading AMR

The procurement process for a full SCADA system across the grid is currently in its final stages. When completed and deployed it will allow operators to control operations locally or at remote locations, monitor, gather, and process real-time data. This is very critical in the implementation of the Transmission Expansion Master Plans as clear and real-time visibility of the grid is important. Similarly, the procurement of an Automated Meter Reader AMR is at its final stage and when procured, the Market operator will have real-time visibility of all trading meters on the grid which will ensure accurate and undisputed data from the points.

**Figure 3.16: Nigeria’s Power Generation Efficiency in Transmission and Distribution**



Source: NESISTATS.

#### i) Implemented Activities achieved under the Transmission Segment of the Power Sub-sector by the TCN

- **Transmission Wheeling Capacity**

TCN has steadily within the last one year increased its capacity to wheel power from 5,000MWN to 7,500MW. This is evident in the capacity of the grid to record above 5,000MW monthly peak generation in the first half of 2018. Also, the capacity of TCN is being increased with the construction and commissioning of additional transmission substations across the country and the upgrade currently going on in some substations.

- **Increase of Eligible Customer on the Grid**

The commencement of eligible customers trading in the Wholesale Electrical Market has enabled TCN to effectively register customers and administer their registered contract. Currently, ten (10) companies have registered as eligible customers, while five (5) of them have commenced commercial

operations. TCN is also in talks with customers on 132KV and 330KV network, to encourage them to consider the eligible customer framework to free up stranded power on the grid.

- **Enforcement of free Governor Control**

The enforcement proved to be one of the game-changers in the reduction of frequency limit violation and the system collapses. This was done by instructing generating stations to ensure that they activate the free governor mode on their generating units which ensured immediate compensation in the frequency fluctuation in the network preventing frequency limit violation and eventual system collapse.

- **Decentralized Project Management Function to Regional Offices of Transmission Company of Nigeria**

The Management reviewed the administrative structure of the establishment after several studies on the need for decentralization was considered and implemented. This gave the regions full authority over the project in their regions. This also created a sense of responsibility for the regions on the project and ensured timely completion of projects. The regions were instructed to take over the projects that were non-performing and complete them, using in-house Engineers.

#### **iv. Distribution Infrastructure**

Distribution infrastructure is made up of distribution lines and substations of varying capacities. The distribution grid operates mainly on 33 kV, 11 kV, and 0.416 kV level, i.e. medium voltage (MV) and low voltage level (LV).

The distribution network accounts for an additional 12.5 per cent of technical losses before electricity reaches the final consumer. The distribution networks consist of 759 33kV feeders that receive power from TCN's 330kV and 132kV national grid; 843 33/11kV injection substations of total capacity 12,389MVA; 2,040 11kV feeders, 34,311 33/0.415kV distribution transformers of total capacity 10,356MVA; and 53,775 11/0.415kV distribution transformers of total capacity 16,897MVA.

Notwithstanding these capacities, recent studies identified further technical restrictions within the distribution networks that limited the power transfer capability to 7,423.5MW. The overall capacity of the distribution networks to receive power from the national grid and supply to consumers is demonstrably 5,375MW, which is the highest power delivery from the national grid to consumers achieved in 2019.

In the wake of the power sector privatization that took place in 2013, 11 distribution companies covering a regional grid were sold to new private owners. Notwithstanding the privatization, most of the distribution companies do not receive enough electric power to operate at high enough volumes and recover their investment cost.

Table 3.11: Customer, Distance and Energy Allocation Variation of the 11 Distribution Companies

Area	Number of customers (thousands)	Distribution network (km)	Allocation to the network (% of grid supply)
Abuja	755	107,254	12%
Benin	1,187	104,702	15%
Eko	581	8,093	13%
Enugu	819	25,078	9%
Ibadan	1,750	24,355	9%
Ikeja	1,128	12,466	11%
Jos	466	12,227	8%
Kaduna	459	26,653	7%
Kano	598	21,041	6%
Port Harcourt	557	17,989	8%
Yola	345	6,505	4%

Source: Discos.

### 3.2.2 Aspiration, Goals, and Targets for the Energy Sector

#### a) Aspirations/Goals

Nigeria has set ambitious aspirations for the Energy sector.

##### (i) Power

For the power sub-sector, the priorities identified are as follows:

- Increase power generation from the current 3,500MW to 7,000 MW by 2021, 11,000MW by 2023 and to 25,000MW by 2025, with focus on gas as the immediate priority and adding alternative sources after 2025;
- Improve energy efficiency and diversify the energy mix, including through greater use of renewable energy;
- Facilitate private sector investment in generation, transmission, and distribution;
- Improve access to electricity to all Nigerians;
- Increase rural electrification through the use of off-grid renewable solutions;
- Restore financial viability in the electricity market;
- Implement a data-driven approach in power sector development planning;
- Eliminate sabotage of gas and power infrastructure;
- Strengthen and increase transmission capacity, with an immediate focus on the national backbone;
- Increase distribution capacity, with priority placed on making power available for industrial users and reducing distribution losses;
- Finalize privatization of power generation and distribution, and extend privatization to include NIPP assets;
- Build capabilities, increasing human capacity 20 times by 2025 and 40 times by 2043; and

- Implement all power infrastructure projects in compliance with available international best practices.

## **(ii) Oil and Gas**

For oil and gas, the priorities are to:

- Provide a robust gas distribution infrastructure to deepen gas penetration and increase gas monetization;
- Grow Oil and Gas production and reserve, enhance Oil recovery, with minimal environmental degradation;
- Increase oil production capacity from 2.57MMbbls/d in 2020 to 3 MMbbls/d in the short term and 4 MMbbls/d in the medium term;
- Increase local refining capacity to meet domestic demand and provide optimum petroleum products distribution networks;
- Become a net exporter of petroleum products by 2025;
- Enable NNPC operate commercially in line with the proposed Petroleum Industry Bill, part of which has been passed by the Legislature;
- Build sustainable Oil and Gas Infrastructure, (Gathering, Processing, Storage, Distribution facilities, etc);
- Explore alternative and innovative Project Financing mechanisms;
- Reform key Oil and Gas institutions to anchor sustained growth in the industry;
- Expand domestic gas production to meet growing demands for power generation, Gas-Based Industries (GBIs), and gas to people Subsectors;
- Promote LPG for domestic use through National Gas Expansion Programme;
- Increase local content in the upstream, midstream, and downstream oil and gas sectors;
- Promote deep offshore and Inland Basins exploration activities for oil and gas reserves growth;
- Promote Ease of Doing Business in the Oil and Gas industry to attract new entrants;
- Reduce the average unit production costs of crude oil by at least 5.0 per cent in the short-term and 20.0 per cent in the medium-term;
- Eliminate routine gas flaring via the National Gas Flare Commercialisation Programme;
- Commence and strengthen the implementation of the Nigerian Gas Transportation network code;
- Deregulate and liberalize the downstream sector and entrench price freedom;
- Ensure industry compliance with global health, safety and environmental standards;
- Ensure passage of the PIB;
- Reform and create commercially oriented and profit-driven oil and gas entities;
- Increase the percentage of capital expenditure in-country to meet growing production capacities;
- Increase the use of sustainable fuels; and
- Establish links to the regional gas network (West African Gas Pipeline, Nigerian phase of the trans-Saharan gas pipeline).

The specific strategic goals for the plan periods (2020-2025 and 2026-2043) are shown in Table 3.12.

**Table 3.12: Energy Sector Goals**

Sub-sector	2020-2025	2026-2043
<b>Power</b>	Ramp up and stabilize capacity additions at a very high rate of 8-10 GW per annum	Reduce transport and consumption losses to global standards
	Expand the national grid line with capacity addition and implement smart grid technologies	Increase the share of alternative energy to 35.0 per cent
	Develop hydro and other alternative generation capacity to maintain 70:30 fossil fuels to alternative ratio	Export electricity to ECOWAS countries
	Develop human capacity	
<b>Oil and Gas</b>	Increase local refining capacity to fully meet national demand	Increase production and refining capacity in line with national demand growth
	Increase gas production, handling and transport capacity in line with power sector needs	Reduce greenhouse gas emissions to be in line with the Kyoto Protocol
	Increase oil and gas reserves and productions	Eliminate operation-related oil spill
	Zero oil/crude oil theft and minimal oil spill	Aline with global health and safety practices
	Promote the use of sustainable fuels	
	Link to the regional gas network	

Source: Energy TWG

## b) Targets/Strategies

### i. Power

For the power sub-sector, there are several targets for the period 2020 – 2043. The overarching target is to increase power generation from the current 3.5GW to 350GW by the end of 2043 by optimizing non-operational capacity, encouraging small-scale projects, and pursuing long-term capacity. Also, there is a need to improve the commercial viability of the GenCos and DisCos. To achieve this target, Nigeria will need to implement the following strategies:

- Optimize the existing installed capacity available for generation;
- Restore lost gas supply through the Gas Flare Commercialization Programme;
- Produce strategy towards the elimination of gas infrastructure vandalism;
- Complete major gas infrastructure lines to plants and main trunk lines to facilitate gas supply for power generation;
- Improve NBET’s financial capability to support the electricity market;

- Introduce strategy for capital market and banking programmes that ensure all upstream industry operators get paid for each contract
- Encourage electricity distribution companies (Discos) to procure embedded generation directly;
- Reach financial close on the 15 solar plants that have recently signed power purchase agreements (PPPs);
- Accelerate standardization of the process for executing independent power projects (IPPs), including defining pricing, to encourage private-sector participation;
- Deploy a clear, legal, and commercial framework for investments in power projects;
- Mobilize investments to execute renewable off-grid power solutions to improve energy mix;
- Reduce transmission and distribution losses/ energy theft;
- Restructure the Transmission Company of Nigeria to improve management and operational efficiency;
- Achieve privatization of NIPP generation assets;
- Implement the Rural Electrification Strategy and Implementation Plan;
- Implement the National Renewable Energy and Efficiency Policy (NREEP); and
- Implement Power Sector Recovery Plan.

## ii. Oil and Gas

The main goal in the oil and gas sub-sector is to advance “gas to power” to meet the rapidly growing energy demand of the country. The target is to increase oil production to 3.0 and 4.0 MMbbls/d, and increase refining capacity to a level that would meet local demand and export potential, estimated at 4.0MMbbls/s by 2043, with the target of becoming premium motor spirit (PMS) self-sufficient by 2030. Similarly, Nigeria plans to increase its gas production capacity from 8.16 BSCFD in 2020 to 15 BSCFD by 2025 and 30 BSCFD by 2043. The increase in gas production is necessary to meet supply sufficiency to gas-powered plants, Commercial sub-sectors, and gas-based industries, e.g., fertilizers, agro-processing, and petrochemicals.

The corresponding manufacturing capacities of the gas-based industries are set to grow accordingly. In terms of exploration, the goal is to grow natural gas reserves from 203.16 TCF in 2019 to 210 TCF by 2025 and 220 TCF by 2030.

To achieve these targets, Nigeria will need to implement the following strategies:

- Revamp refineries to increase local production capacity and facilitate the coming on stream of new refineries;
- Revolutionize gas as fuel of choice by launching development projects and increasing production;
- Strategically reduce government equity in NNPC refineries and other downstream subsidiaries (such as pipelines and depots);
- Conclude downstream liberalization and entrench price freedom;
- Implement new business models for refineries;
- Robust gas and petroleum products distribution networks;
- Encourage private-sector participation through co-location and JV arrangements;

- Implement the seven key critical gas development projects to ramp up domestic supply to meet growing domestic gas demands and export commitments;
- Entrench gas expansion programme and facilitate gas-based industrialization;
- Ensure petroleum products supply sufficiency and effective products transportation;
- Promote indigenous capacity and participation in the oil and gas industry;
- Pass the Petroleum Industry Reform Bill;
- Improve and sustain Niger Delta security;
- Facilitate rigorous oil and gas exploration activities for reserves growth and energy security;
- Ensure Environmental best practices and sustainable resources development;
- Entrench Ease of Doing Business in the oil and gas industry

**Table 3.13: Energy Sector Targets (Power)**

Name	Unit	Definition	Current	Targets		
			2019	2025	2030	2043
Generation Capacity	GW	Total installed generation Capacity	3.5	20	56	350
Transmission route lines: 330 KV	km	Total length of 330 KV transmission lines	5,552	8,000	10,000	16,600
Transmission route lines: 132 KV	km	Total length of 132 KV transmission lines	7,040	12,000	15,000	22,000
Transmission Capacity	MW	The total transmission transformer capacity~	5,000	40,000	75,000	470,000
Distribution Capacity	MW	The total distribution transformer capacity	6,000	36,000	67,000	420,000
Access to Electricity	Per cent	Proportion of population that have access to electricity where access	40	75	90	100

Source: Energy TWG.

**Table 3.14: Energy Sector Targets (Oil and Gas)**

Name	Unit	Definition	Current 2019	Target 2025	2030	2043
<b>Production capacity – oil</b>	kbpd	Facilities required to safely and sustainably produce discovered volumes	2,500	2,750	3,000	4,000
<b>Production capacity – gas</b>	mcfpd	Facilities required to safely and sustainably produce discovered volumes	8,000	11,000	15,000	30,000
<b>Refining capacity</b>	kbpd	Totality of facilities required to refine crude Oil	446	750	1,000	4,000
<b>Refined products storage capacity</b>	billion litres	Total stock of storage facilities/depots required to hold strategic number of days of a national daily consumption	2.60	3.2	3.8	5.2
<b>Pipeline length (refined)</b>	km	Length of pipeline installed for transportation of refined products	5,120	6,000	7,000	10,000
<b>Pipeline - (crude oil)</b>	km	Length of pipeline installed for transportation of crude Oil	3,000	3,300	3,600	4,800
<b>Pipeline capacity (crude oil)</b>	kbpd	Daily volumetric throughput	1.65	1.815	1.98	2.64
<b>Pipeline capacity (refined)</b>	m litres	Daily volumetric throughput	30	38	47	60

Source: Energy TWG.

### 3.2.3 Challenges

#### a) Oil and Gas Subsector

Major infrastructure challenges in the oil and gas subsector include:



- **The poor state of the refineries:** Some of the refineries in the country are in very poor state of disrepair accounting for the poor capacity utilization and underscores the infrastructure challenge in the sector, especially the need to improve maintenance and revamp the refineries for optimal capacity utilization.
- **Ageing oil production facilities** that were built in the early and mid-seventies requiring modernization.
- **Low level of investments in the Sub-sector:** Transport and storage infrastructure in the oil and gas sector is capital intensive, and investment in Nigeria has been low compared to other countries with similar potentials
- **Lack of sustenance of public sector investment in oil and gas:** Besides the low level of government investment, there is the challenge of sustaining government funding of oil and gas infrastructure amidst increasing financial constraints and competing social needs.
- **Security issues:** Insecurity especially vandalism of critical infrastructure in the Niger Delta region poses a substantial threat to oil and gas infrastructure consolidation and development in the sub-sector
- The high cost of environmental remediation from years of militancy and pipeline vandalism.
- **Inadequate legal enablers:** Weak legal, institutional and regulatory framework, including delay in the passage of the PIB by the National Assembly which has continued to impact negatively on oil and gas infrastructure development, through the slow inflow of investments in the sub-sector.
- **Inadequate Funding:** Dwindling budgetary provisions arising from fluctuations and increasing uncertainty in global oil prices reduce capital investments in infrastructure development in the subsector.
- Building indigenous technology capability in complex deep-water environments

Other issues that militate against oil and gas infrastructure development are;

- Unsustainable pricing regimes, which makes long term infrastructure planning difficult
- Unstable crude oil prices: Global oil prices have remained volatile and unpredictable. The production of shale oil in North America continues to threaten global price stability thereby creating a high degree of uncertainty in the industry, which invariably deters domestic and foreign investment inflows in the sector
- Crude Oil theft and reduction in crude oil exploration and production due to militancy attacks reduce investments in infrastructure in the industry through a reduction in revenue generation
- Shortage of indigenous human capital that is required to build need indigenous technology for oil and gas infrastructure development.

## b) Power Subsector

Major Infrastructure challenges in the Power subsector include;

- **Obsolete Equipment and Poor Maintenance Culture:** The country has so far fallen short of attaining the Vision 2020 and ERGP (2017-2020) expectations of a large, strong, and diversified economy mainly as a result of the huge infrastructure deficit, especially in the power sub-sector. The infrastructure deficit is exacerbated by frequent breakdowns of the power generation plants due to obsolete equipment and poor maintenance culture. There is also the challenge of an acute shortage of spare parts for the maintenance of existing facilities when required.
- **Inadequate Power Mix:** Power generation relies mainly on hydro and thermal sources to the neglect of the country's large endowment in coal, solar, and wind resources. As a result, there is a huge shortfall in power generation in the dry season. The unabated demand for power supply coupled with the inability of the thermal power generating plants to meet the regular requirement for gas supply puts a lot of pressure on existing infrastructure further reducing their performance.
- **Electricity Supply/Demand Gap:** The wide gap in electricity supply vis-a-vis demand is one of the leading issues in the on-going effort to move the economy towards the desired state of development. One clear manifestation of growing disequilibrium in the demand/supply scenario is the persistent increase in the demand for private power generating plants by households, private sector establishments, and government institutions at all levels. It is estimated that total self-generated electricity is about 6000MW almost thrice the amount of electricity that was fed into the national grid system.
- **Inappropriate Electricity Pricing:** Relatively low tariffs compared with the cost of production is a major challenge. The prevailing tariff ranged from N6.0/kwh for the lowest category of Residential Consumers with Single Phase Meter to 15,8/kwh for Commercial/Industrial Users vis-a-vis the average cost of about 23.0/kwh. The inability to cover the cost of production gave rise to huge indebtedness to the National Gas Company (NGC) which supplied gas to four of the six generating companies (gencos) located at Egbin, Sapele, Afam Delta. The shortage of gas supply gave rise to a huge amount of unutilized capacity in all segments of electricity service delivery.
- **Inadequate Transmission System:** The transmission system has a wheeling capacity of about 5000MW (less than 50% of the prevailing level of electricity demand). Total transmission network (330kv and 132kv) is about 11000kms compared to about 23000kms of the distribution network (33kv and 11kv lines). Total power losses on account of long-distance transmission and distribution lines, vandalism, and pilferage are estimated at over 50.0 per cent of generated power.

**Other challenges include the following;**

- The huge backlog of indebtedness to Discos by nearly all segments of public sector institutions;

- High incidence of voluntary retirement due to uncompetitive staff remuneration;
- A relatively low tariff rate is a major challenge. In 2012, power was sold to final consumers at about N12/kWh vis-à-vis the average tariff of N8/kWh as of 2010. Currently, the average tariff has increased to an average of above N23/kWh;
- Inadequate gas supply to the power plants due to pipeline vandalism and inability to pay for gas supplied; and
- Poor estimated billing system occasioned by the inability of Distribution Companies (Discos) to provide meters to consumers.

### 3.2.4 Private Sector Expectations and Priorities

The private sector recommendations on the enablers for private sector participation and priorities for the Energy sector include:

- i. complete privatization of power generation and distribution assets;
- ii. create a clear path for the development of the Transmission Company of Nigeria (TCN), including a mandate to lead future industry planning and allow for private sector investment;
- iii. implement the Transmission Reinforcement Plan to address transmission constraints and improve grid capability;
- iv. complete implementation of the Gas Master Plan;
- v. progress LNG projects that have viable economics and adequate gas supply; and
- vi. enable completion of joint venture gas supply projects (funding, incentives, etc.).

### 3.2.5 Enablers

- i. An effective and efficient regulatory environment for timely approval of projects, contracts, permits, licenses, etc., related to infrastructure development;
- ii. Guarantee of Right of Way for infrastructure development and reduced cost of securing access rights;
- iii. Improved regulation of gas pricing to attract investment in gas supply infrastructure;
- iv. Government credit enhancement for IPPs (e.g., secure World Bank PRG);
- v. Incentives for private sector investment and
- vi. Passing the Petroleum Industry Bill to accelerate expected reforms.

A review of the relevant infrastructure-related legislation in the Energy sector revealed 24 principal legislations, 16 amendments, and 10 sub-legislations governing the oil and gas industry in Nigeria. The key ones are the NNPC Act, the Petroleum Act, and the Petroleum Control Act which were found not to be investor-friendly.

Furthermore, it was identified that the provisions of Sections 7(4), 11(2) and 12 of the NNPC Act are all in breach of the provisions of Section 162 of the Constitution which requires that revenues collected by the government should be paid into an account called the Federation Account. Also, Paragraph 2 of the Deep Water Block Allocation (back-in rights) regulation 2003 (subsidiary legislation under the Petroleum Act) that gives the Federal Government the right to acquire five-sixths of an OPL (Oil Prospecting License) or OML (Oil Mining Lease) interest is invalid to the extent that it is inconsistent with paragraph 35, First Schedule to the Petroleum Act which provides that such participation must be made on terms to be negotiated between the Federal Government and the holder of the OPL or OML.

The laws in the sector cannot be said to be sub-national-friendly as minerals, gas, and oil rights are all vested in the Federal Government of Nigeria. Furthermore, most of these laws are out-of-date as they are not in line with modern practice. These informed the need to bring this multiplicity of laws into one document in the form of the Petroleum Industry Bill (PIB) which is currently before the National Assembly. The Petroleum Industry Governance Bill (PIGB) 2017 was passed on 25 May 2017 to create efficient and effective governing institutions, establish a framework for the creation of commercially oriented and profit-driven petroleum entities; promote transparency and accountability of petroleum resources, and foster a conducive business environment for petroleum industry operations.

### **3.2.6 Required Infrastructure Investments**

Nigeria's aspiration and infrastructure target for the next 23 years (2020-2043) is aimed at increasing the current infrastructure stock from 30.0 per cent of the GDP to at least 70.0 per cent by the year 2043. To achieve the goals and objectives, the largest investment needs are in the energy (₦1.2 trillion) and transportation sector (₦900 billion) per annum, representing more than 50.0 per cent of the required infrastructure investments over the plan period. In the first 5 years of the Plan, it is expected that investments in the Energy sector will grow at an annual growth rate of 50.0 per cent. Estimates using international benchmarks indicate that USD 3,120 billion will be required over the next 23 years to achieve the specific sector targets – USD 1.872 billion for power and USD 1.248 billion for oil and gas, which include maintenance cost.

On power, the bulk of the investment will be required to increase generation capacity from current levels of about 3.5 GW to 350 GW (which will be largely funded by the private sector), to build the transmission network to transfer the generated electricity across the country and to distribute electricity to Nigerians.

Nigeria's per capita power consumption is only 144.52 kWh per year, one of the lowest globally, thus impacting negatively on economic growth and productivity. Based on the implementation of the ongoing power projects by the current Administration, the per capita power consumption in Nigeria will only reach 433 kWh per year in 2025. (Source: PwC - Powering Nigeria for the Future). Achieving this objective will require investment in the power sector in Nigeria, with the following substantial 'leaps' over the next ten years: Accelerating growth in power generation capacity and improving utilization; Expanding the power transmission network and driving better efficiencies, and Establishing and scaling up efficient power distribution capabilities.

In the case of oil and gas, the biggest cost drivers will be increasing existing refining utilization to match the 446 kbpd capacity, increasing refining capacity to meet local crude production capacity, building additional pipelines, increasing oil production capacity, and developing the infrastructure to increase production capacity in oil and gas. The urgent need for a cleaner energy mix must be balanced against the equally urgent need to meet the rising energy demands of a growing population and deliver affordable energy to all. The disbursement of USD200 million from the Nigerian Content Intervention Fund to indigenous manufacturers and service providers in the oil and gas sector was made by the current Administration in June 2020 as part of the Federal Government's effort to boost indigenous participation in the oil and gas sector to continue to grow local content and invariably increase investment in the sector. As at July 2019, the Nigerian Content Development and Monitoring Board (NCDMB), which has the responsibility to manage this fund had disbursed about USD160 million to local oil firms.

Over the first 5 years, Nigeria will spend USD 37 billion: USD 12 billion to increase gas production from current levels of 8,000 BSCFD to 11,000 BSCFD, USD 16 billion to increase oil production capacity from 2.57 mbpd as at June 2020 to at least 3 mbpd by 2025 and USD 9 billion to increase refining capacity from current levels of 446,000 bpd as at August 2020 to at least 600,000 bpd by 2025. Most of the refining and oil production increase will be funded by the private sector, whereas a significant part of the gas expansion will be funded by the public sector.

To ensure that Nigeria reaches its ambitious targets, it will need to ensure an appropriate cost-reflective tariff for power, drive transmission and distribution losses down to a reasonable level to make the tariff more affordable, put appropriate gas contracts in place to ensure gas is delivered to power stations and make adequate upfront investments in skills and capabilities to deliver and operate the necessary infrastructure.

### **3.3 Information Communication Technology (ICT)**

#### **3.3.1 Current State of Infrastructure**

Information and Communications Technology (ICT) Sector comprises of Telecommunications and information Services, Postal and Courier Services. Information and Communication Technology (ICT) infrastructure plays a major role in the creation of an enabling environment for socio-economic growth and development of the country. An efficient ICT network enables the delivery of ICT services that drive productivity, innovation, and social inclusion. ICT facilitates the production of goods and services, creates business opportunities, improves the ease of doing business, and enhances access to markets thereby contributing to the growth of the economy. It also delivers a wealth of information, efficiency gains across all sectors of the economy, and enhances connectivity and social interaction.

Today, ICT is an umbrella term that encompasses all technical means for processing and communicating information such as digital technology including computers and the internet; mobile telephony; different electronic applications (e-banking, e-governance, e-commerce, etc.); digital media and broadband technology. The sector's forte includes ample coastline and continental shelf, serving as landing points for submarine cables; more-than-adequate undersea cable capacity; and substantial indigenous satellite capacity and coverage.

The priority of the ICT sector is to ensure the provision of universal access and delivery of quality services through the nationwide development of ICT infrastructure and services. Of prime importance are basic voice/data services and last-mile connectivity for broadband internet access.

COVID-19 has had an impact on the digital economy in several ways. A few of them include Education, Work-Life, Commerce and Cybersecurity, Healthcare and Connectivity. The closure of educational institutions in most states across the country has compelled educators to adopt a digital approach for the delivery of their lectures.

According to a May 2020 Report by UNESCO, 70 per cent of enrolled students, or about a 1.2 billion students in 150 countries had their education disrupted. Digital technologies have been used to mitigate the adverse effects of this closure.

The *work-at-home* policy that became popular as a result of the pandemic has led to the use of several remote working platforms. A similar trend of the rapid adoption of the *work-at-home* policy by Nigerian institutions, where access to technology and relevant infrastructure permit. Incidentally, a recent by OWL Labs in the United States indicated that 31 per cent of respondents credited COVID-19 as being the catalyst for remote work. NDEPS addresses this in Pillars 4 (Service Infrastructure) and Pillar 5 (Digital Services Development and Promotion).

*E-commerce* has become the default mode of shopping and digital payments are fast becoming the payment method of choice for most individuals, shops, and institutions. Unfortunately, cybercriminals have increased the vulnerability of these systems. The Ministry of Communication and Digital Economy have addressed this in Pillar 6 (Soft Infrastructure) of the NDEPS and have increased surveillance and the advisories are provided.

COVID-19 is primarily in the domain of healthcare but it has overwhelmed the healthcare system to such an extent that non-COVID-related illnesses no longer enjoy the level of care and attention that they used to enjoy before COVID-19. Telemedicine is now being used to address many such illnesses.

In 2017, the Nigerian Communication Commission gave InfraCo licenses to two telecommunication companies; Main One and IHS. (These are licenses to telecommunication companies to provide fiber optic infrastructure to enhance broadband penetration in the country).

IT connectivity grew to 11 terabytes as at 2017 (from 9.8 terabytes as at 2012) following Nigeria's internet bandwidth capacity provided by five submarine cables which include South Atlantic 3 (SAT-3), West Africa Submarine Cable (WASC), Main One Cable, Glo-1 Cable, West Africa Cable System, and the African Coast to Europe cable (ACE) which have all their landing points in Lagos. Today, Nigeria has become the largest telecommunication market in Africa, and its biggest internet user. According to Internet World Statistics, it reveals that Nigeria ranks 7th in the world and 1st in Africa with a total of 111.6 million internet users that is about 56.0 per cent of its total population as at March 2019, this is expected to rise over the years given the expected growth in population as well as the trends of e-platform in the commercial system of the country.

Despite the growth in internet penetration in Nigeria, a large proportion of Nigerians who live in rural communities do not have access to basic ICT services. Most broadband operators do not consistently offer 256 kbps and 1.5 mbps connections and service reliability remains poor. Also, many urban areas are either not served or underserved.

As at July 2020, according to NCC Tele-density which is a measure of the level of adoption of telephony usage was 104.41 per cent and broadband penetration was 42.2 per cent. Nigeria had 52,160 base transceivers stations and colocation towers, microwave radios covering 334,314km with 151 gateways in use in the industry and 84,580.7km Fiber Optics Deployment (73,157.7 terrestrial fiber and 11,423km submarine cable).

The industry has also witnessed a substantial improvement in the quality of service and network coverage across the country. Infrastructural deployment and upgrade were commendably improved, as most Mobile Network Operators (MNOs) embraced massive investments in 4G networks and rollout of services, which culminated in improved consumer satisfaction and increase in revenue streams.

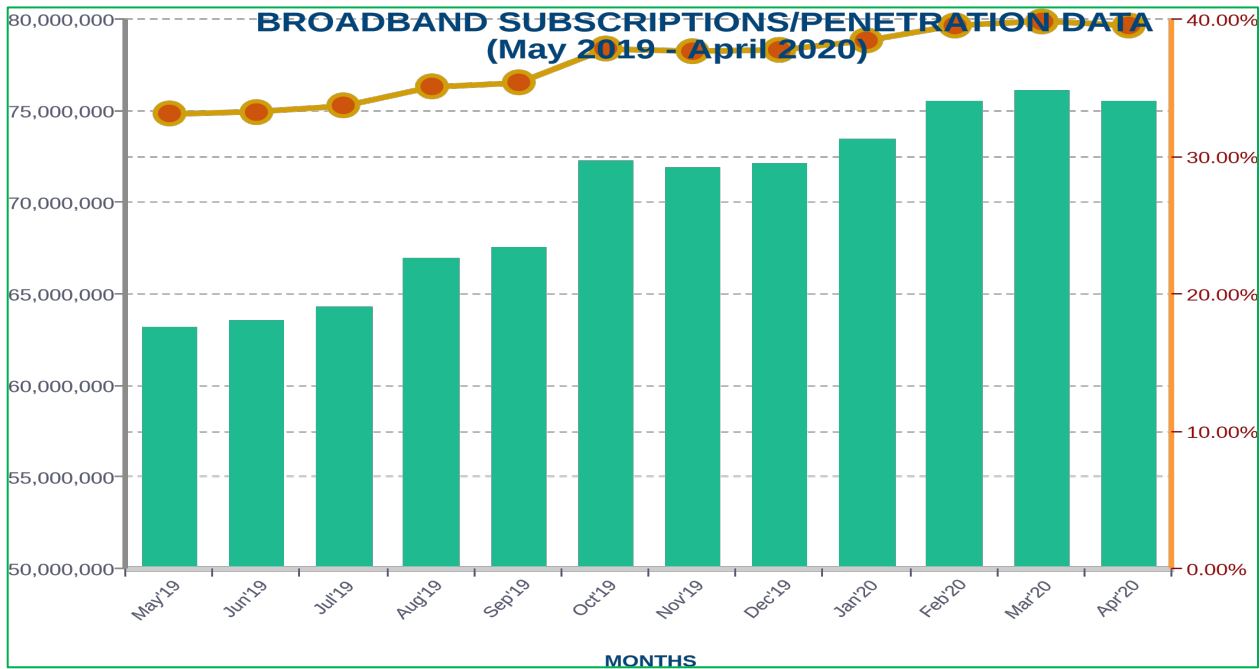
Constraints identified in the sector include disjointed and inadequate policies; absence of legal and regulatory frameworks; weak public-private partnership ('PPP') frameworks that discourage private-sector participation; weak institutional frameworks that prevent synergy among existing ICT-based infrastructures; poor ICT infrastructure and info-structure in the country.

In addition, provision of connectivity services is mostly due to lack of consistent energy supply, high maintenance costs resulting from fiber-cuts occurring due to theft and poor urban and regional planning, accessibility and security issues, as well as complexities in obtaining the right of way. This results in low penetration, slow connectivity speeds as well as an acute need for additional terrestrial distribution infrastructure.

- **Internet and Broadband**

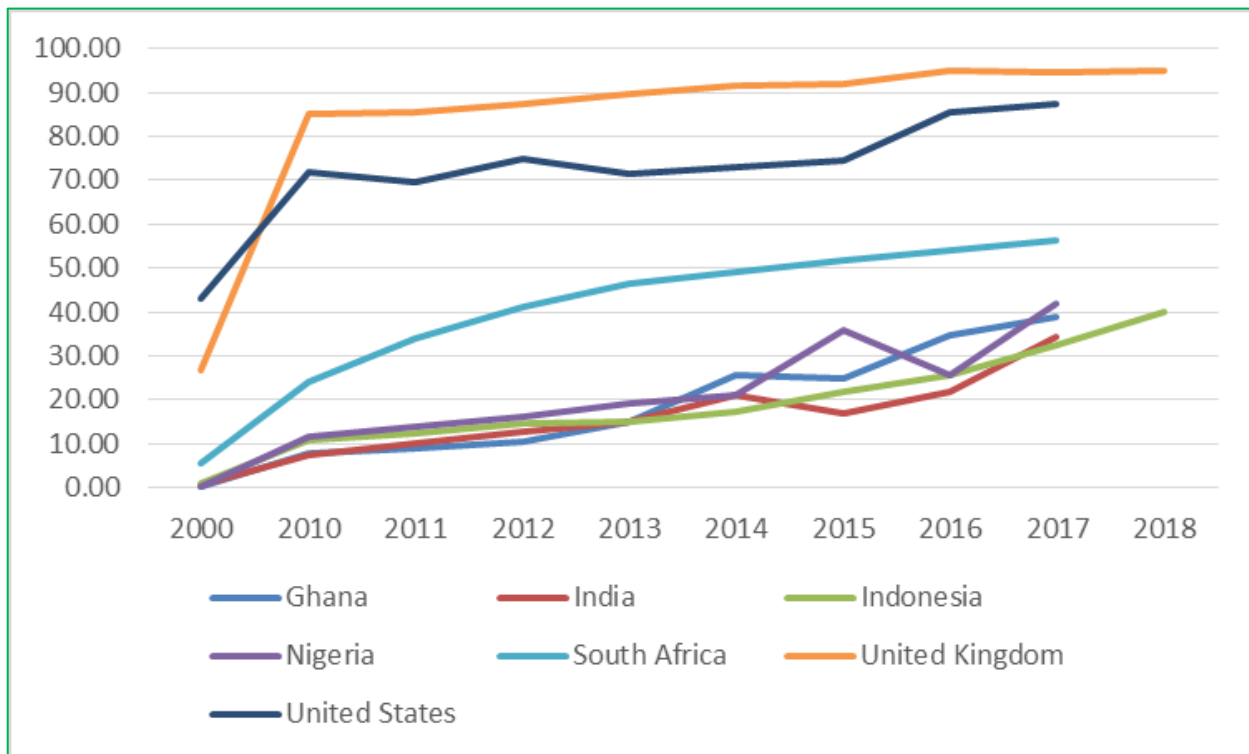
The Federal Government of Nigeria which is a member of the International Telecommunication Union (ITU) States recognizes broadband as a potential for contributing and improving socio-economic development in Nigeria. The Government communicated this in a policy document titled the 'Nigerian National Broadband Plan (NNBP)'. Having achieved the target of 30 per cent broadband penetration of the Nigerian National Broadband Plan (2013-2018), the Ministry of Communication and Digital Economy produced another broadband policy document 'Nigerian National Broadband Plan (2020-2025)'. The NNBP provides a roadmap and timelines to deliver a five-fold increase in broadband penetration over five years (2020 – 2025) which aims at addressing 3 of the 8 priorities that the Federal Government assigned to the Federal Ministry of Communications and Digital Economy and the parastatals under its purview, for implementation. These priorities are the implementation of broadband connectivity and execution of a plan to deploy 4G across the country, as well as the development and implementation of a digital economy policy and strategy. This new broadband plan is designed to deliver data download speeds across Nigeria, a minimum of 25 Mbps in urban areas, and 10Mbps in rural areas, with effective coverage available to at least 90.0 per cent of the population by 2025.

**Figure 3.17: Broadband Subscription/Penetration (May 2019 – April 2020)**



Source: NCC.

**Figure 3.18: Percentage of Individuals using the Internet (PII) in selected ITU Member States.**



Source: International Telecommunication Union (ITU).

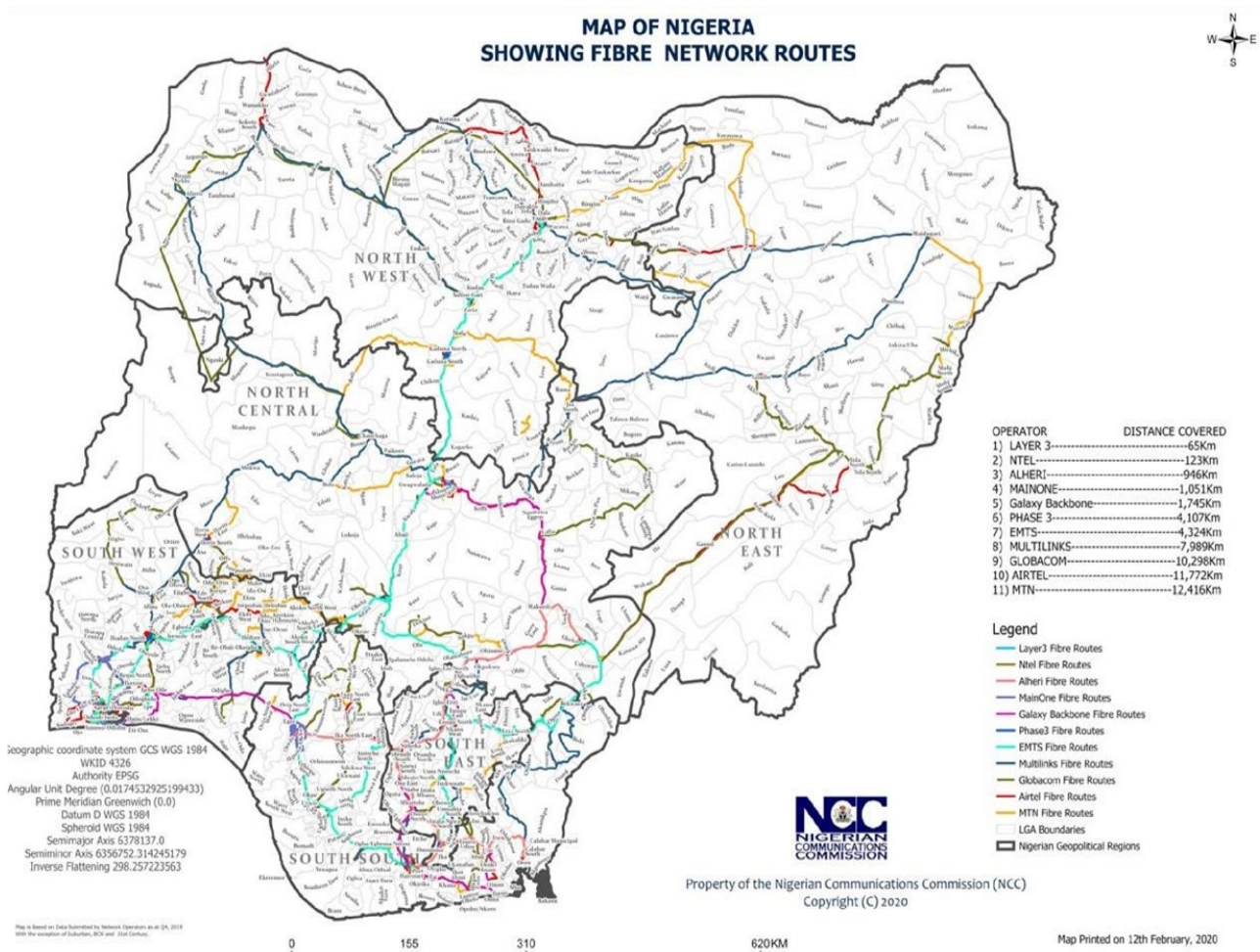


Of all internet access, 75.0 per cent is served by mobile broadband, at relatively high cost. The Presidential Committee on Broadband recently redefined broadband as a minimum speed of 1.5 mbps.

While there are several initiatives aimed at deploying internet and broadband in Nigeria, many challenges remain, especially with the deployment of a national fiber-optic network to distribute the approximately 11 terabytes of capacity already delivered to Nigeria

According to the Nigerian Communication Commission, the presence of deployed broadband fiber-optic infrastructure has not sufficiently covered the entire Nigerian States as depicted in Figure 3.19.

**Figure 3.19: Map of Nigeria Showing Fibre Network Routes**



Source: Nigeria National Broadband Policy 2020-2025.

In order to improve internet and broadband penetration in Nigeria, the Nigerian Communication Commission has carried out the following:

- i. Articulated a robust regulatory framework for strategic and systematic licensing and deployment of broadband infrastructure across the country – ‘The Open Access Model’; and

- ii. Established a Broadband Implementation and Monitoring Committee to give a proper assessment on a regular basis of broadband infrastructure deployment.

- **Mobile Telephony**

Nigeria's mobile penetration, which is currently 63.0 per cent rate ranks low, compared to similar countries. Brazil, with a similar-sized population, has an average of 1.4 lines per person – more than twice that of Nigeria. Also, Nigeria's 63.0 per cent mobile penetration is not evenly distributed, because most lines are concentrated in the urban and sub-urban areas. Although it is positive that the country's mobile subscriber base recently crossed the 100 million mark, this also increases the need for further capacity expansion by mobile network operators.

- **E-Governance**

E-governance is the application of ICT for delivering government services, exchange of information, communication transactions, integration of various stand-alone systems and services from Government-to-Citizens (G2C), Government-to-Business (G2B), Government-to-Government (G2G), as well as back-office processes and interactions within the entire government framework.

Currently, E-governance is very limited in Nigeria, with less than a quarter of government institutions computerized. Even though about 30.0 per cent of MDAs have an online presence, less than 5 per cent of actual government services are available online.

The Federal Ministry of Communications developed the Nigeria e-Government Master Plan with its vision and objectives linked to the Federal Government Economic Recovery Growth Plan (ERGP) which seeks to build on the SMART Nigeria Digital Economy Project to increase the contribution of ICT and ICT related activities to the GDP.

The overall purpose and rationale of the e-Government Master Plan is to enhance transparency, efficiency, the quality of public service administration and cost-effectiveness of public service delivery in Nigeria by developing the legal system, organizational framework, government service delivery, human capital, technology infrastructure, and awareness.

### 3.3.2 Aspiration and Targets

The ICT sector's vision is centered on 3 pillars:

- i. Knowledge-based economy
  - To build the technological capabilities and capacity to support a knowledge-based economy
- ii. ICT contribution to GDP
  - To increase ICT contribution to the economy:
  - Using ICT as a wealth creation platform through job creation and entrepreneurial development; and
  - Establishing Nigeria as a regional hub for ICT-based services (call centres, BPO/micro-working, analytics).
- iii. E-governance

- To enable efficiency, transparency, and accessibility across government in Nigeria.

**Table 3.15: Knowledge-Based Economy Goals**

Short-Term Goals (2020-2025)	Projects Completed/Achievement so far
Provide Universal Access to computing devices and connectivity	<p>In providing universal access to computing devices and connectivity, the FGN through the National Information Technology Development Agency 'NITDA' established the following as at 2019</p> <ul style="list-style-type: none"> <li>• 14 Wide Area Network (“WAN”)</li> <li>• 2 ICT innovation hub</li> <li>• 9 Virtual libraries in Tertiary Institutions</li> <li>• 86 Digital Capacity Building Centres;</li> <li>• 83 E-learning Infrastructure centres and 2 E-learning in secondary schools</li> </ul>
Improve computer literacy and proficiency for all	<p>The NITDA as at 2019, had established 764 IT centres. The agency seeks to establish Public Access Venues in all the 774 Local Governments in Nigeria and Knowledge Access Venues in all Government Educational Institutions. It currently has 988 Knowledge Access Venues.</p>
Develop a larger cohort of specialized IT professionals	

**Source:** Federal Ministry of Finance, Budget & National Planning

**Table 3.16: E-Governance Goals**

Short-Term Goals (2020-2023)	Projects completed/Achievements
Create seamless access to data and services from Federal, States and Local Government to all citizens, businesses, and employees	Implementation of the Single Treasury Account by the Federal Ministry of Finance. Harmonization of Database
Automate Government processes and systems to improve efficiency (G2G, G2C, G2B)	Implementation of GIFMIS Implementation of E-government Master Plan
Digitalize all Government institutions and services by 2023 from the current level of about 30%	Implementation of E-government Master Plan

**Source:** Federal Ministry of Communication & Digital Economy

**Table 3.17: ICT sector targets**

Subsector	KPIs	2020 (%)	2023 (%)	2043 (%)
Knowledge-based economy	• Devices			
	- Homes (Per cent of homes with access to computing devices)	50	75	95
	- Schools (number of computers per pupil)	5	0	1
	- Institutions (number of hospitals, police headquarters with access)	50	75	100
	• Connectivity	100	100	100
	- Population with access to 3/4G mobile service	80	100	100
	- Population with access to broadband service	80	100	100
E-governance	□ Cities and state capitals (metropolitan)	65	95	100
	□ Rural	65	95	100
	□ Schools and institutions	65	100	100
	•Population with access to active public access points (<2 km away)	65	100	100
ICT Contribution to GDP	•Ratio of ICT sector gross revenues to GDP	9.85	12	15
	•Ratio of revenue from locally developed software to total software market		10	20
E-governance	•Percentage of government institutions that have been Computerized	60	100	100
	•Percentage of government services Online	40	100	100
	•Percentage of government MDAs with online presence	70	100	100
	•Percentage of government MDAs with interactive/transactional Services	50	100	100
	•Percentage of MDAs linked to central database	70	100	100

**Source:**NIIMP

The current infrastructure stock will not be able to support the outlined targets. Hence, Nigeria needs to expand its current infrastructure stock in line with international benchmarks, especially last mile connection infrastructure (base stations, microwaves, fibre optic and satellites) and the national backbone.

### **3.3.3 Private Sector Expectations and Priorities**

The recommendations offered by the private sector on the enablers for private sector participation and priorities for the ICT sector include:

- reducing the high barriers to entry, including the high costs of Right of Way permits and the multiple taxes and licenses required;
- reviewing the high cost of deployment and lack of supporting infrastructure (especially in power and transport);
- addressing the dearth of local ICT-related skills and competence;
- implementing the Open Access Shared Infrastructure framework;
- reducing the costs of duct building and duct infrastructure leasing;
- accelerating Right of Way permits;
- harmonizing multiple taxes, and reducing taxes on computing hardware and locally produced software;
- integrating ICT infrastructure into estates and commercial districts;
- harmonizing the BTS roll-out;
- releasing the spectrum for LTE/wireless data;
- ensuring consistent minimum provision of 18 hours of power supply per day;
- unbundling of metro access;
- unlocking broadband to cater for bandwidth issues;
- deepening fiber-optic technology; and
- expanding fiber-optic links to neighboring capitals and submarine cables.

### **3.3.4 Required infrastructure investments**

According to the NCC, investments in the fast-growing telecommunications sector were put at USD68 billion as at 2018, of this sum, USD35 billion was from Foreign Direct Investments.

Nigeria needs to spend USD5 billion annually on ICT infrastructure over the next 10 years, mostly on base stations and fiber. Nigeria needs to invest USD12.5 billion annually in the sector to boost base stations and fiber, and USD15 billion annually during 2034– 43, with an increasing share of maintenance, spend and technology upgrade.

A substantial part of the expected spending is to be provided by the private sector. Therefore, the returns on investment need to be able to sustain large-scale private investments. Further investments in key sectors, especially in the power infrastructure will be required to support the development of competitively priced IT services by bringing down input costs for the sector.

The key investments for the public sector will be in computerizing the public sector and setting up e-government infrastructure and services.

### **3.3.5 Legal enablers**

A review of the relevant infrastructure-related legislation in the ICT sector reveals that the Nigerian Postal Service Act is the main legislation relevant to ICT infrastructure. The critical shortcomings associated with the Act include the monopoly status conferred on NIPOST, which has resulted in complacency and lack of attention to customer needs. The lack of autonomy and inefficient operations encumbered by a dilapidated network resulted in attendant high losses. The Act is not investment-friendly as most of its provisions are outdated. Therefore, there is a need to review the laws. To further support this, NIPOST could be separated as a Universal Postal Service provider and an independent regulatory authority established to oversee the activities of the sector.

## **3.4 Agriculture, Water and Mining**

### **3.4.1 Water Resources**

#### **3.4.1.1 Current State of Infrastructure**

The relevance of water to the national development of Nigeria is progressively increasing with rapid population growth, urbanization, agriculture, and industrial development. Water's usefulness in different capacities for direct human consumption, agricultural irrigation, fisheries, hydropower, industrial production, environmental protection, and industrial effluents establishes the paramount importance of effectively managing this resource.

There are abundant water resources in Nigeria to meet all needs if properly harnessed (estimated at 267.3 billion cubic meters of surface water and 52 billion cubic meters of groundwater). There are also more than 200 dams with a combined storage capacity of about 36 billion cubic meters and the capability to irrigate 500,000 hectares of land. Currently, just under 300,000 hectares are equipped for irrigation and 50,000 hectares of the equipped and developed area were lost due to failed infrastructure and poor operations and maintenance, out of 3.14 million hectares of irrigable land in Nigeria. It is only about 10 per cent of Nigeria's irrigable land that is irrigated. Furthermore, out of the existing 200 dams, 19 of them have small hydropower facilities, with the combined potential capacity to generate about 3,600 MW of electricity.

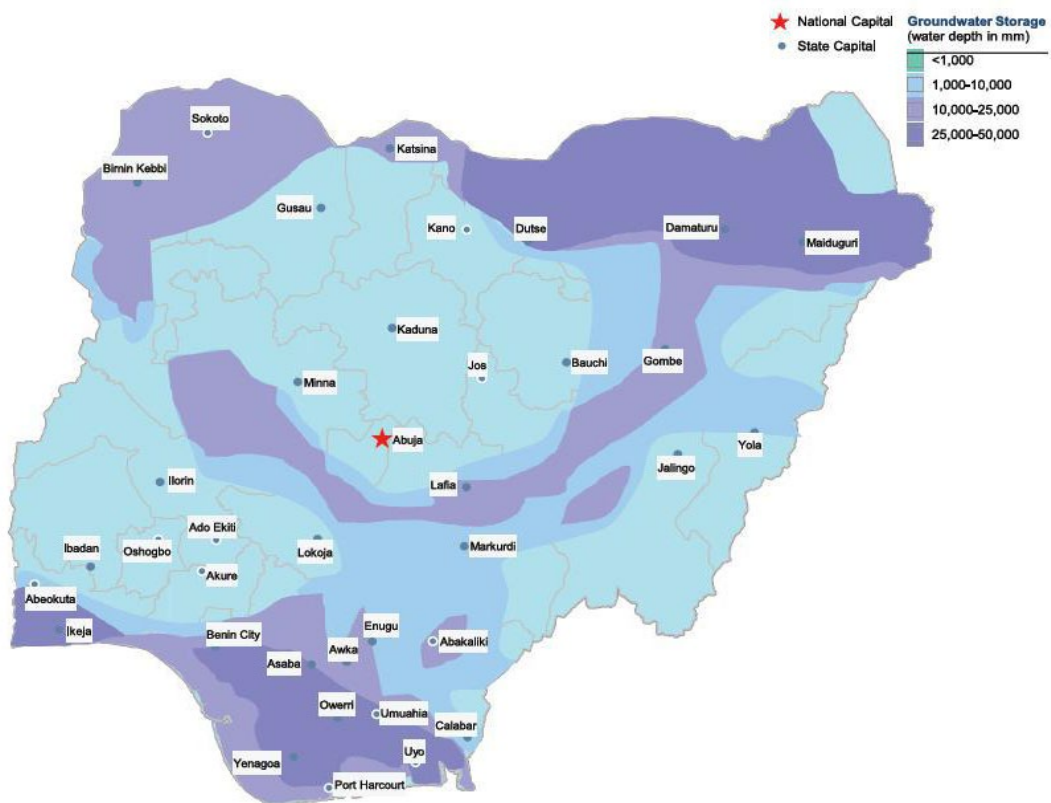
However, Nigeria's water resources are not yet effectively utilized. National access to potable water is currently 70.0 per cent, from survey result released by NBS and sanitation is only 31.0 per cent. Nigeria was unable to meet the MDGs target on access to water supply, particularly with the decline in access to the rural areas. It became necessary that concerted effort must be put in place to improve the trend towards achieving 100.0 per cent access to water supply by 2030 (at a time when the population is estimated to grow to 257 million), following the United Nations Sustainable Development Goals (SDGs) as well as for poverty reduction in Nigeria. This will be achieved by the Partnership for Expanded Water, Sanitation, and Hygiene (PEWASH). Current low levels of access can be attributed

to inadequate infrastructure to meet demand, inadequate use of the existing infrastructure, and poor operation and maintenance of that infrastructure.

The National Water, Sanitation and Hygiene (WASH) Response Committee for COVID-19 pandemic in Nigeria was inaugurated on 16th April, 2020. The proposal for National WASH response to COVID-19 was developed and approved by the Federal Executive Council (FEC) and formed part of the National Economic Sustainability Plan (NESP). National Guideline for WASH Sector Response to COVID-19 was designed in close collaboration with Development Partners and shared with all 36 States and the Federal Capital Territory (FCT).

There are currently twelve River Basin Development Authorities (RBDAs) under the supervision of the Federal Ministry of Water Resources. The RBDAs were modelled after the United States Tennessee Valley Basin development concept. Their primary function is to serve as the operators, managers, and developers of water resources infrastructure within their catchments to bring prosperity as integrated rural development enablers, especially in areas of food production and employment generation. However, one of the major challenges militating against the optimum performance of the RBDA as of today is the issue of land acquisition and encroachment by States and communities.

**Figure 3.20: Water in Nigeria**



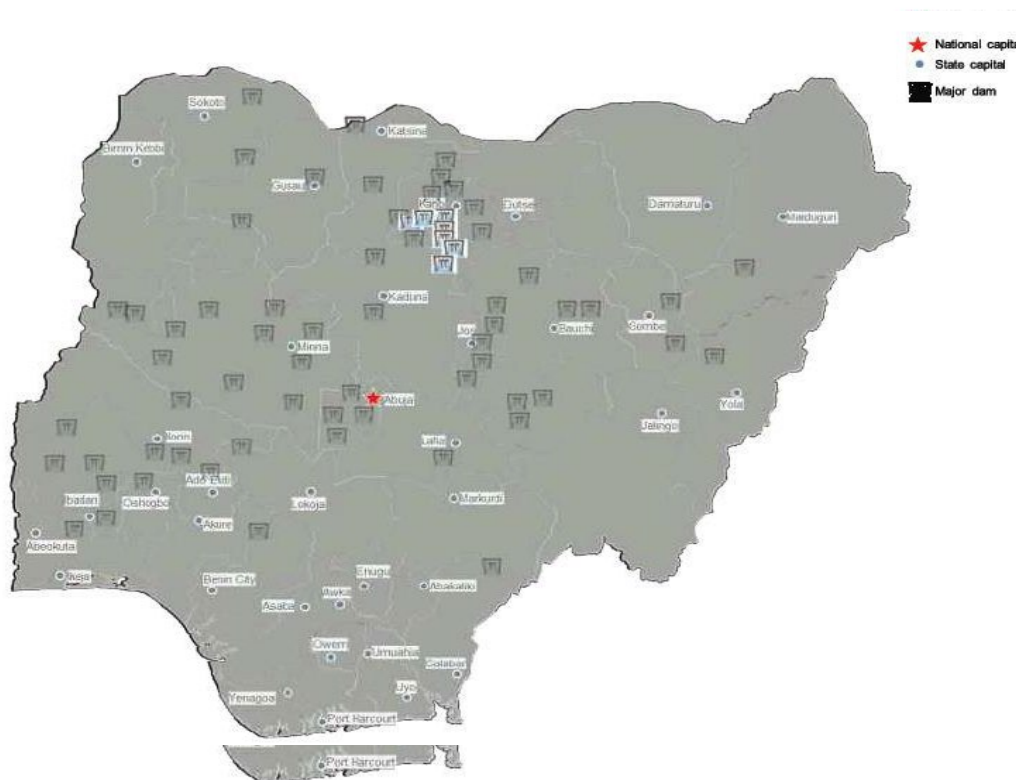
Source: Natural Earth, African Development Bank.

There are currently about 30 ongoing new dam projects (Ogbese, Nkari, Adada, Otukpo, (Otukpo) Kashimbila, Ile-Ife, Galma, among others), and about 32 ongoing irrigation projects as well as rehabilitation with some already operational while others are between 80 per cent to 98 per cent completion status (Ejule-Ogbe, Middle Rima Valley, Sepeteri, Lower Mamu-Awka, Sabke, Zobe, Jibiya, Sepetiri, Hadejia Valley, Kano River, and middle Ogun, among others). (These Irrigation projects have been completed as at June 2020) The Federal Ministry of Water Resources has completed the construction of seven dams as at March 2020, including Kashimbila in Taraba State, Amla-Otukpo in Benue State, Ogwashi-Uku in Delta State and Amauzari in Abia State, Gimi in Kaduna State, Sulma in Katsina State and Ibiono Ibom in Akwa Ibom State. (Rehabilitation of additional two dams have been completed- Kampe Omi dam in Kogi state and Kargo dam in Kaduna state). Also 42 Earth dams has been completed to support irrigation agriculture and water supply by the 12 RBDAs

Water Supply projects already completed across the country and operational are in Takum, Mangu, Ekeremore, Kwami, Gadam, and Bojude. Completion of 82 water supply projects, Construction of 159 Rural Water Supply Schemes in the North-East, IDP camps and some Federal Institutions and Establishments;

Currently, there exists no structure for revenue generation by the Ministry of Water Resources largely because the irrigation component of the existing dams is not completed. The Integrated Water Resources Management Commission Bill is in the process of being signed into law. The commission is expected to promote the effective and efficient management of water resources in Nigeria.

**Figure 3.21: Dams in Nigeria**



Source: Natural Earth, African Development Bank.



There are six operational National Water Quality Reference laboratories currently existing in the country and evenly distributed across geo-political zones. Additional six laboratories are also being constructed to reduce the workload on the existing laboratories.

### 3.4.1.2 Aspirations and Targets for Water Resources

The aspirations of the Water sub-sectors are to:

- ensure sustainable access to enough water resources for diverse uses by the population both in urban and rural areas;
- provide effective and efficient management of water resources in Nigeria;
- make various water sources affordable for diverse uses;
- make clean and potable water available to all Nigerians;
- provide water to farmers for irrigation/dams;
- research inter-basin water transfer within Africa;
- intensify and update water statistics; and
- implement the National WASH response to COVID-19 projects.

The central aspirations of the water sub-sector cover the areas of water supply, water treatment, irrigation, and hydropower. By 2043, 100.0 per cent coverage of water supply and sanitation access is targeted (up from today's 61.0 per cent for water supply access and 31.0 per cent for sanitation access). The Federal Ministry of Water Resources is expected to complete the construction of 10 dams between March 2020 and 2021. The current annual water treatment capacity is 0.7 trillion cubic meters – it is targeted to reach 1.4 trillion cubic meters by 2043. Irrigation and hydropower targets are directly related to the agriculture and energy sectors respectively.

Other targets for water resources by 2043 include the following:

- To increase water treatment capacity by 20.0 per cent;
- To increase water distribution capacity by 20.0 per cent;
- Access to potable water will be raised from 60.0 per cent (70 per cent) to 100 per cent; and
- Construction of 10 new dams

The National Irrigation Development Programme (NIDP) of the Federal Ministry of Water Resources was initiated in 2016 as part of the Water Sector Roadmap to support the diversification of the economy, guarantee food production, food security and create employment. It is aimed to accomplish the following:

- establish additional 100,000 Ha of irrigated farmland by 2021 and achieve a total of 500,000 Ha by 2030; and
- an additional 1,000,000 Ha of irrigable land to be developed by the private sector and State Governments by 2030.

The World Bank is supporting the implementation of Transforming Irrigation Management in Nigeria Project (TRIMING) with a credit facility of US\$495 million. The Project involves rehabilitation and expansion of about 42,000 Ha of Irrigation land under the first phase, to be completed by 2022 as follows:

- Bakolori Irrigation Project (Works commenced in 2017) - 13,500 Ha;
- Kano River Irrigation Project (Works commenced in January 2019) 14,400 Ha;
- Dadin Kowa Irrigation Project (Procurement completed. Contractor mobilizing) --- 3,000 Ha; and
- Middle Rima Irrigation Project (Studies nearing completion) 5,000 Ha.

In terms of irrigation, the rate of expansion (which has been about three per cent per annum in recent years) needs to increase substantially (beyond three per cent). The goal is to extend facilities to realize the national potential of about 3.14 million hectares of irrigable land. In terms of hydropower, the goal is to achieve 95.0 per cent development of generation potential, leading to the production of up to 10,000 MW of electricity by 2021.

Table 3.18 further summarized the aspirations, targets as well as Nigeria’s achievements in the provision of water resources

**Table 3.18: Water Resources – Aspirations, Targets and Achievements to date**

S/N	Aspirations and Targets	Achievements to date
1	Ensure sustainable access to sufficient water resources for diverse uses by the population both in urban and rural areas.	<ul style="list-style-type: none"> <li>• The Federal Ministry of Water Resources is currently reviewing studies on the proposed inter-basin water transfer from the Congo River Basin to the Lake Chad Basin. However, an MoU has been signed with the Power China Limited to conclude plans for the actualization of the project on the transfer of water from the Congo River.</li> <li>• Completed 2,300 water supply scheme across the country serving a total population of 7,213,406 with combined jobs creation of 12,435 direct jobs and 24,870 indirect jobs</li> </ul>
2	Provide effective and efficient management of water resources in Nigeria.	<ul style="list-style-type: none"> <li>• The Federal Ministry of Water Resources also facilitated the signing of an MoU with Cameroon for the joint management of water resources of the Benue River Basin. MoU was also signed between LCBC and Italian Government that has committed €1.5M towards finalizing the feasibility studies on the propose Inter basin Water transfer project</li> </ul>
3	Make various water sources affordable for diverse uses.	<ul style="list-style-type: none"> <li>• Completion of Central Ogbia Regional Water Project, in Bayelsa</li> <li>• Completion of Sabke/Dutsi/Mashi Water Supply Project, in Katsina Northern</li> <li>• Completion of Ishan Regional Water Supply Project, serving Ugboha and Uromi communities of Edo State</li> <li>• Completion of Kashimbila Dam, Taraba State</li> <li>• Completion of Ogwashi-Uku Dam, Delta State and also spillway discharge channel</li> </ul>

		<ul style="list-style-type: none"> <li>• Completion of Shagari Dam Irrigation Project, Sokoto State</li> <li>• Completion of Mangu Dam and Regional Water Supply Scheme in Plateau State</li> <li>• Completion of Phase 1 of Galma Dam Kaduna</li> <li>• Rehabilitation of Ojirami Dam Water Supply Project, Edo State</li> </ul>
4	Make clean and potable water available to all Nigerians	<ul style="list-style-type: none"> <li>• The Partnership for Expanded Water Supply, Sanitation and Hygiene (PEWASH) is being implemented for improving access to water supply and sanitation in Nigeria</li> <li>• 20 LGAs in Cross River, Bauchi, Jigawa, Benue and the Osun States <ul style="list-style-type: none"> <li>• have achieved Open Defecation Free (ODF) status up from one LGA. 27 ODF LGAs as at June, 2020: Cross River State (6), Benue State (6), Osun State (1), Bauchi State (2), Jigawa State (6), Akwa Ibom State (1) and Katsina State (5); Constructed 712 toilets and 150 bathrooms nationwide;</li> </ul> </li> <li>• Constructed 106 Sanitation and Hygiene facilities in the North East, North Central, and South West Regions</li> <li>• Launch of the “Clean Nigeria: Use the Toilet” campaign</li> <li>• Establishment of a National ODF Secretariat</li> <li>• The signing of Executive order 009 to end OD by Mr. President</li> <li>• Partnerships with entrepreneurs resulted in Latrines constructed in 105 markets and motor parks (23 more are on-going).</li> <li>• States flag-off Campaign to end OD</li> <li>• 3 States so far have flagged off their campaign to end open defecation (Osun, Benue, Ekiti). Additional 2 states of Katsina and Ondo have flagged off their campaign to end open defecation bringing total to 5</li> </ul>
5	Provide water to farmers for irrigation/dams	<ul style="list-style-type: none"> <li>• Completion of Amauzari, Amla Otukpo and other 42 Earth Dams with combined job creation of about forty-three thousand, three hundred and fifty-four direct jobs (43,354) and seventy-one thousand, one hundred and seventy-two indirect jobs (71,172)</li> <li>• Implementation of the National Irrigation Development Programme to boost food production (Road Map:2016-2030)</li> <li>• Development of Guidelines for Operation and Maintenance of Dams and Irrigation Infrastructure in the RBDAs</li> </ul>

		<ul style="list-style-type: none"> <li>• The Songhai Integrated Model farming schemes have been developed in 4 RBDAs, while several others are at various levels of development. The Songhai Model Farms will serve as training centres for the Graduate Youth programme and provide job opportunities to teeming Nigerians. The Songhai model farm will be developed in each of the 109 Senatorial Districts of the country.</li> <li>• Coordination of the Graduate/Youth Empowerment Programme in the RBDAs.</li> <li>• The process of partial commercialization of the RBDAs to enhance their sustainability currently at the pilot stage, being implemented in 4 RBDAs</li> </ul>
6	Research inter-basin water transfer within Africa	<ul style="list-style-type: none"> <li>• Strategic Plans (2017 – 2020) developed by the respective RBDAs based on the Ministry’s guidelines are being implemented.</li> </ul>
7	Intensify and update water statistics	<ul style="list-style-type: none"> <li>• The Ministry through the World Bank-Assisted National Water Urban Sector Reform Project established the National Resources Information System (NAWIS) Data Centre as a repository of data and information for water resources planning, development and management. The data centre at the Ministry’s Headquarters, is supported with other subsidiaries being housed by the River Basin Development Authorities, in the six geopolitical zones in the country. The NAWIS Project Work stations have been expanded for improved data production, management and dissemination across the sector.</li> </ul>
8	National WASH response to COVID-19 projects	<ul style="list-style-type: none"> <li>• Rehabilitation of 185Nos. Water Supply Projects (5Nos. Nos. for each of the 36 States &amp; FCT)</li> <li>• Construction of 185Nos. Solar Powered Water Supply Projects (5Nos. Nos. for each of the 36 States &amp; FCT)</li> <li>• Construction of 370Nos. Public Sanitation Facilities (10Nos. for each of the 36 States &amp; FCT)</li> <li>• Support to State Water Agencies to support their operations and to ensure uninterrupted Water Supply</li> <li>• Supply of 370 Contactless Handwashing Facilities with Soap and Sanitizers (10Nos. for each of the 36 States &amp; FCT)</li> <li>• Active engagement of 77,400 Youth Volunteers for Handwashing and ODF Campaign</li> </ul>

Source: Federal Ministry of Water Resources.

### 3.4.1.3 Private Sector Expectations and Priorities

Private-sector expectations and priorities are as follows:

- Develop land for large and small-scale irrigations
- Complete various water projects across the country
- Develop new, manageable projects targeted at communities
- Execute a PPP framework through the government procurement process.
- FMWR collaborating with FMP for development, under PPP arrangement, of the following:
  - Makurdi – 1,500 MW
  - Lokoja – 750 MW
  - Katsina-Ala – 460MW
  - Gurara II – 360 MW
  - Tede – 220MW
  - Mangu – 182 MW
  - Itisi Dam – 40MW
  - Kiri – 36MW
  - Farin Ruwa – 20MW.

### 3.4.1.4 Enablers for Water Resource Development

- A clear water infrastructure policy/well-articulated reform. Water Resources Master Plan (2016-2030), Water Sector Roadmap (2016-2030)
- Donor support through grants
- Effective staffing of the water corporations
- Regional projects implemented across the states to allow for the sharing of resources
- Adoption of technology for the collection of bills.

The National Water Resources Bill 2020 (to repeal Water Act 101 of 1993) was passed by the House of Representatives in 2018 but could not scale through the 8th Senate. The Ministry is currently re-engaging with the Nineth National Assembly to ensure passage of the Bill. When passed into Law, it is expected to provide effective water sector governance in Nigeria. It will also among other issues, provide for effective catchment management, greater participation of farmers in irrigation management and a regulatory framework for private sector participation in water supply delivery in the country. Furthermore, it is expected to create a stable and attractive environment for investors and development partners. The Bill will provide the much required legal and regulatory framework for the water sector to optimally stimulate investment for job creation and poverty alleviation.

### 3.4.2 Agriculture

According to the National Bureau of Statistics (NBS), Agriculture contributed 25.16 per cent to 2019 annual GDP compared with its contribution of 25.13 per cent in the corresponding period in 2018. It grew to 2.36 per cent in 2019 from 2.13 in 2018, representing an increase of ₦17,958.59 billion from ₦17,544.15 billion respectively. On a quarter by quarter basis, Agriculture contributed 21.96 per cent in the first quarter of 2020 compared with the contribution of 26.09 per cent in the fourth quarter of 2019. It decreased to 2.20 per cent from 2.31 per cent in the fourth quarter of 2019, representing a

reduction to ₦3,677.15 billion from ₦5,093.98 billion respectively. The sector employs over 70.0 per cent of the active population. Nigeria has 79 million hectares of fertile land, however, only 34 million hectares (ha) (43 per cent) of these are cultivated and less than 10.0 per cent of irrigable land is currently under irrigation. 90.0 per cent of agricultural output is accounted for by smallholder farmers with less than 2 hectares (ha) under cropping and low per hectares (ha) yield of crops.

There is therefore potential to transform agriculture from subsistence farming into a commercial and profitable business venture (agribusiness). Special attention would be directed to managing the factors of production efficiently, as infrastructure development is a major lever to reduce the production cost in order to increase the agricultural sector production and productivity.

Despite the abundance of arable land and water for the production of crops, fisheries, forestry and livestock, harnessing the nation's agricultural potentials has been weakened by factors such as:

- Activities of bandits and other forms of insecurity
- Infrastructure deficiency;
- Synergy gap;
- Inadequate inputs;
- Insurance risk;
- High-interest rate;
- Late budgeting/ disbursement of funds; and
- Low investment.

Other issues include:

- Poor seedling quality, obsolete processing technology, and inadequate market information system coupled with the threat of diseases to crops, livestock, and fisheries.
- Insufficient harnessing of Nigeria's surface and underground water for use during the dry season, due to inadequate irrigation facilities;
- high levels of post-harvest losses, especially during transportation due to poor infrastructural linkages to markets;
- Lack of processing facilities responsible for post-harvest losses
- Very little value addition of agricultural commodities value chain via industrial processing, which is a crucial requirement to become a continental powerhouse in agriculture and related industries.

Government intends to unlock the potential in Nigeria's agricultural sector, by addressing the various challenges in the sector particularly, infrastructure deficiency. The indicative cost for infrastructure investment in the agriculture sector is about USD 18 billion. This translates to an average annual spend of about USD 4.5 billion. However, agriculture has substantial linkages with other sectors such as transport and water, and the corresponding investment amounts are not fully separable.

### **3.4.2.1 Current State of Agricultural Infrastructure**

Agriculture infrastructure includes irrigation networks, Rural Feeder roads, post-harvest storage facilities, warehouses, Rural electricity (provision of Solar Power Light for Rural Communities), and telecommunication facilities that impact directly on agricultural productivity.

- **Irrigation Network**

Currently, less than 10.0 per cent of irrigable land is under irrigation accounting for low crop production in the agricultural sector. Moreover, some of the existing irrigation networks are in poor states. Prolonged lack of rainfall due to climate change and in the absence of a good irrigation network will have devastating consequences on the farmers and the economy in terms of income loss and government revenue losses, as well as shocks on the economy resulting from a shortage of food.

- **Rural Road Infrastructure**

Nigeria's road network remains a major source of concern due to the poor state of some of the roads. This is particularly worse in the rural areas where it is estimated that over 70.0 per cent of the existing rural road network is unpaved with a significant proportion in deplorable conditions and often impassable thereby hindering smooth and timely access of farmers to markets. This is particularly worse in the rural areas where it is estimated that over 70.0 per cent of the existing rural road network is unpaved with a significant proportion in deplorable conditions and often impassable. It also accounts for wide price variations between the rural and urban areas of the country.

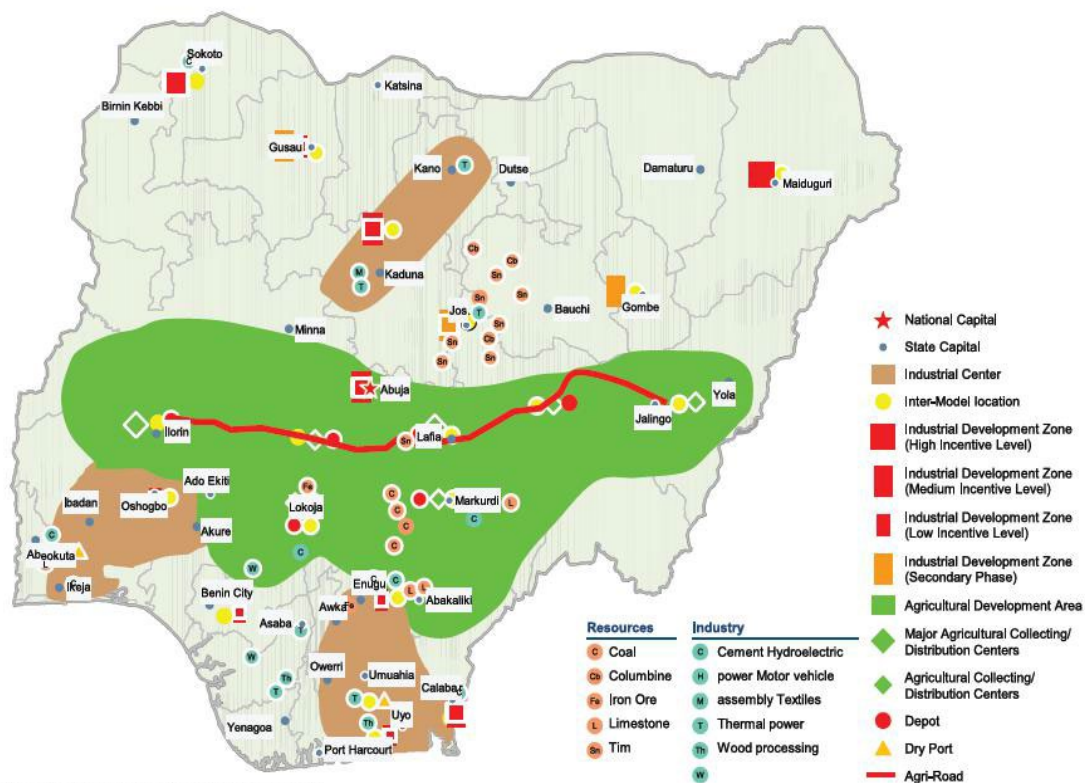
- **Post-Harvest Storage Facilities**

The Federal Government over time has put in place a total of 33 N0s Silos complexes with a combined capacity of 1,336,00 MT. A total capacity of 19 N0s Silos (686,000 MT) out of the 33 N0s were concessioned 7 N0s of 400 capacity for future concessions, while 7 N0s Silos of 300 capacity were retained, with a Food Balance in Food Strategic Reserve of 91,367.20 as at 18th December, 2019 MT. In addition, the Federal Government also approved the list of 25 N0s community warehouses in 2016, to be managed by the Nigerian Commodity Exchange Commission (NCX) for inspection and evaluation for her Warehouse Receipt System operation. 17 N0s of the warehouse have been selected and rehabilitated by NCX for their operations. The remaining 8 N0s are dilapidated and require rehabilitation. The Nigerian Stored Products Research Institute (NSPRI) posted that Nigeria loses about US\$8.9 billion or equivalent of N2.7 trillion annually to post-harvest losses (Olufemi Peters, 2017). It is estimated that the reduction of post-harvest losses by 50.0 per cent will drastically reduce food importation in Nigeria.

- **Utilities**

Nigeria's huge infrastructure deficit, particularly in the Power sector remains a big challenge in the Agriculture sector. Electricity and telecommunication facilities are vital for enhancing productivity in the sector. Apart from their direct impact in facilitating agricultural service delivery, utilities in the rural areas are needed to stem youth migration to urban areas thereby ensuring that the youthful population provides the labour and entrepreneurial skills required to engender growth in the sector.

**Figure 3.22: Agriculture in Nigeria**



Source: Natural Earth, African Development Bank.

The Nigerian Government, as part of its broader Agricultural development initiatives, is implementing Staple Crop Processing Zones (SCPZ) as a tool for creating integrated, crop-focused platforms for accelerating private-sector investment in value-added agro-processing. This addresses a set of central objectives, i.e. reducing food imports, increasing value-addition through processing reducing post-harvest losses, reducing operative costs for agro-processors, and creating jobs as well as driving rapid rural growth. An initial set of SCPZs in 19 states is planned.

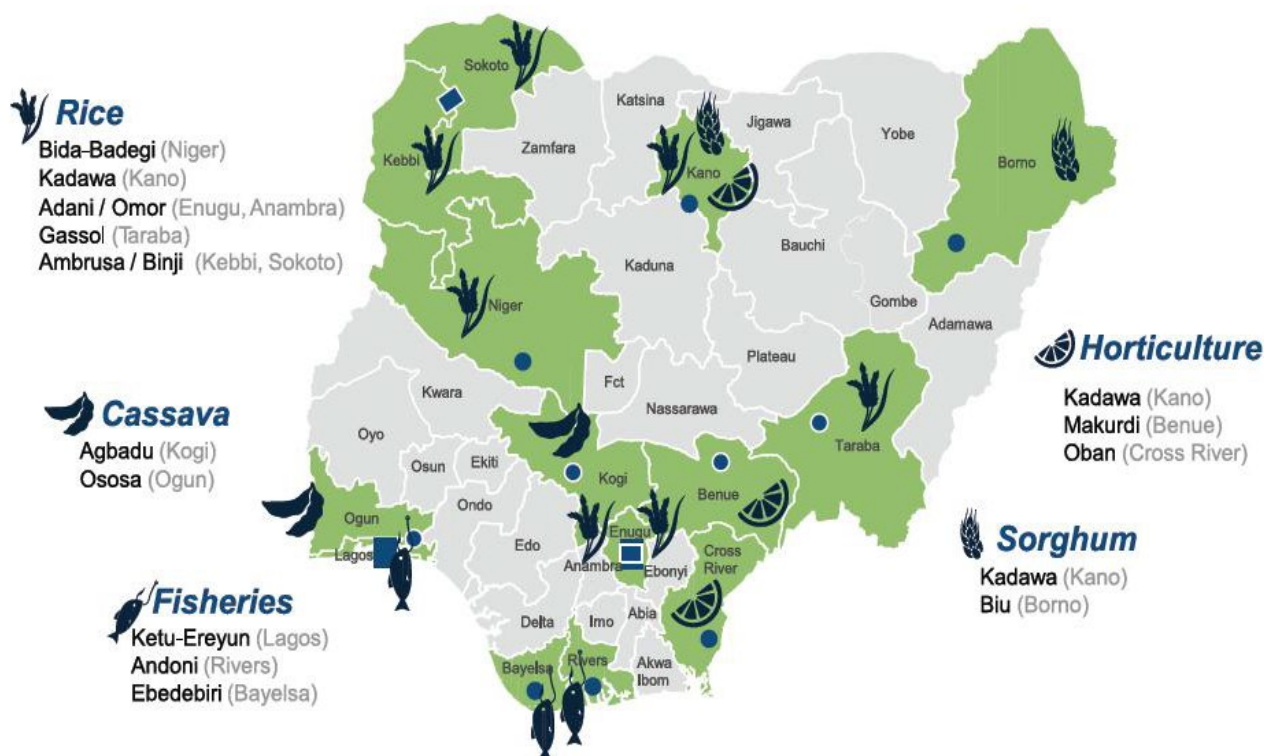
**Current agricultural infrastructure development plans include the establishment of:**

- 19 Staple Crop Processing Centres in all regions of Nigeria;
- 80 agro-input centres (53 completed);
- 8 agro-processing centres along with existing strategic grain reserves;
- 18 agro-industrial estates (3 per region);
- 6 export crop handling, preservation, and conditioning centres (3 are at various stages of completion);
- 17 integrated large-scale rice mills (2 completed); and
- 40 rice processing plants and 18 high-quality cassava flour plants.
- One-Stop Shop Agro-Input Centres
- Export Crop Conditioning Centres
- Establishment of 9 N0s Farmers Market across the States of the Federation
- Construction and equipment of agribusiness centres for rice processing
- Construction and equipment of incubation centres for various value chains



In line with the ERGP, there has been investment in agriculture to drive food security by achieving self-sufficiency in tomato paste (in 2017), rice (in 2018), and wheat (in 2019 and 2020) to make Nigeria a net exporter of key agricultural products including rice, cashew nuts, groundnuts, cassava, and vegetable oil. While some of the targets were met (e.g., self-sufficiency in rice), moderate progress has been recorded on others.

**Figure 3.23: Selected SCPZ Sites and Anchor Crops**



Source: Natural Earth, African Development Bank.

In a bid to achieving local production of fertilizer, the Federal Government flagged off the Presidential Fertilizer Initiative<sup>1</sup> producing more than 4,000 metric tonnes of locally blended fertilizer in its first week of operation. The Initiative is aimed at achieving the local production of 1,000,000 metric tonnes of blended Nitrogen, Phosphorous, and Potassium fertilizer. The Federal Ministry of Agriculture and Rural Development also inaugurated 11 members into the National Fertilizer Technical Committee to ensure the availability of good quality fertilizer products that conform to the provisions of an existing legal and regulatory framework.

The Federal Government launched the Smart Farmer Scheme, an ICT based scheme geared to create over 490,000 jobs as well as boost agriculture. The scheme is expected to scale up the creation of jobs under the auspices of the National Directorate of Employment (NDE).

The Youth Employment in Agriculture was inaugurated by the Federal Government to boost agricultural productivity. The programme is expected to create jobs for over 758,500 youths across the country. The three-year programme is supported by the Food and Agriculture Organization (FAO).

In line with the plan for food security, the Federal Government has signed a Memorandum of Understanding with 32 firms including L&Z Integrated Dairy Farms and Arla Foods for the development of the dairy sector in Nigeria. The MOU is aimed at developing the dairy sector and helping to tackle the recurring farmers' herdsmen clashes in Nigeria. The Federal Ministry of Agriculture and Rural Development also set aside 5,000 hectares of farmland from the Federal Capital Development Authority's 15,000 hectares of farmland for youths and women, as part of a 'Farm for Life Scheme' of the Ministry<sup>1</sup>. The scheme is aimed at creating opportunities for women and youth farmers to support them with the necessary infrastructure to attract various levels of agro investments.

### 3.4.2.2 Aspiration and Targets for Agriculture

The aspirations for the agriculture sector are:

- Improve the national economy by substantially growing the agricultural sector, thus creating more jobs and wealth.
- Secure agriculture transport infrastructure for sustainable food expansion and security for all Nigerians and develop into the main food exporter in the continent.
- Promote the production of agricultural raw materials to meet the needs of an expanding industrial sector and export market as well as mechanized agriculture.
- Develop agro-minerals and build soil-fertilizer-network.
- Collaborate regionally within Africa for mineral fertilizer development, i.e., phosphates, limestone, phosphorus, potash, etc.

For Nigeria to first achieve domestic food security, and then subsequently transform into a continental powerhouse in terms of food exports, the agricultural sub-sector aspires to substantially increase total domestic production of key food staples (such as cassava, sorghum, milk, fish, and eggs) and cash crops (such as cocoa, rubber, and cotton). This aspiration is to be achieved by increasing the percentage of arable land cultivated and increasing crop yields. The national food import bill is targeted to decrease by 30.0 per cent, while food export earnings are intended to grow threefold. A total of 15 million additional jobs in agriculture are envisaged over the next 10 years.

**Other targets for the Agricultural sector by 2043 include the following:**

- Provide infrastructure for Staple Crop Processing Zones (SCPZ);
- Increase infrastructure investment (irrigation, rural feeder roads) by 100.0 per cent;
- Maximize the use of existing Silos to the level of installed capacity;
- Increase the per centage of irrigable land from 10.0 per cent to 40.0 per cent and;
- Increase kilometres of paved rural roads by 20.0 per cent annually.
- Increase the number of Fish Farm Clusters;
- Increase Fish Mills;
- Increase Milk Processing Centres;
- Increase Primary Animal Health Care Centres; and
- Increase the number of Federal Veterinary Medical Centre.

The priority areas to guide agricultural policy targets by 2043 and activities as identified by the Policies, Programmes, and Projects Audit Committee (PPPAC) to drive sustainable agricultural growth of 6.90 per cent and create millions of jobs are summarized in Table 3.19.

**Table 3.19: Key Activities, Milestones and 2043 Targets**

	2020	2021-2025	2026-2030	2043 target
<b>Mechanization &amp; Agro-Industrialization (Green Imperative &amp; AfDB Agro-Industrial Processing Zones)</b>	Select private sector service centre operators from established agripreneurs (148 agro-processing SC, primary 632 mechanization)	Establish 111 privately operated service centres  Reactivate 2 privately owned tractor assembly plants  2 agro-industrial zones	Establish 669 privately operated service centres Reactivate 4 privately owned tractor assembly plans  8 agro-industrial zones  100 million jobs	780 service centres established (148 processing, 632 mechanizations)  6 functional tractor assembly plants  10 agro-industrial zones established
<b>Access to markets and trade</b>	Handover concessioned public silos to private operators Reactivate strategic Food reserve  Prepare lease agreement for 22 public warehouses	Establish post concession management committee for the silos  Procure and stock grains in the Seven public silos  Lease public warehouses	Concession 7 public silos  Expand strategic grain reserves beyond the 6 public silos  Establish comm. Exch.	Concession 16 public silos  6 public silos stocked  22 public warehouses leased
<b>Productivity Management (National Livestock Transformation Plan &amp; Water Mgt)</b>	Finalize state-level implementation plan for 7 pilot states (NLTP)  Commence flood management master plan for Rivers Niger and Benue	Conduct needs assessment within 28 grazing reserves establishment of 7 pilot cluster ranches  Start TRIMM irrigation models in 3 River Basin Authorities (RBAs)	Establish 12 cluster ranches  Start TRIMM irrigation in 9 River Basin Authorities (RBA)	Establish 28 pilot cluster ranches  TRIMM irrigation model in 12 River Basin Authorities (RBA)  65,000 ha of land smart irrigated

Source: Derived from PPPAC.

**Table 3.20: Aspirations and Achievements in the Agricultural Sector**

S/N	Aspirations	Achievements so far
1	<p>Improve the national economy by substantially growing the agricultural sector, thus creating more jobs and wealth.</p>	<ul style="list-style-type: none"> <li>• Federal Government diversification through agricultural transformation and sustained implementation of the initiatives under the Agricultural Promotion Policy (APP) and the Economic Recovery and Growth Plan (ERGP) improved agricultural output growth to 2.36 per cent in 2019 from 2.13 per cent in 2018.</li> <li>• The Anchor Borrowers Programme (ABP), domiciled with the CBN has made available more than 200 billion Naira in funding to more than 1.5 million smallholder farmers of 16 different commodities (Rice, Wheat, Maize, Cotton, Cassava, Poultry, Soy Beans, Groundnut, Fish), cultivating over 1.4 million hectares of farmland.</li> <li>• The ABP has substantially raised local production of rice, doubling the production of paddy as well as milled rice between 2015 and 2019. Between 2016 and 2019, more than 10 new rice mills came on-stream in Nigeria. Many of the existing Mills have expanded their capacity; several new ones are under construction.</li> <li>• More than a billion dollars of private sector investments have been injected in the production of Rice, Wheat, Sugar, Poultry, Animal Feed, Fertilizers, etc since 2015</li> <li>• The ABP created 2,807,775 and 8,423,325 direct and indirect jobs, respectively.</li> <li>• The signing of a Memorandum of Understanding (MoU) between Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL) and Petkus Technologie of Germany, aimed at significantly reducing the incidence/impact of post-harvest losses in Nigeria’s Agriculture Value Chain</li> </ul>
2	<p>Secure agriculture transport infrastructure for sustainable food expansion and security for all Nigerians and develop into the main food exporter in the continent.</p>	<ul style="list-style-type: none"> <li>• Sukuk Bond (1st Tranche – 100 billion Naira in 2017; 2nd Tranche of 100 billion Naira in 2018 and 3rd Tranche of 150 billion Naira has just gone on sale in May 2020). The proceeds are being used to fund major road projects across the six geopolitical zones of Nigeria which will provide access road for the movement of farm produce by farmers to the market</li> <li>• Government is revamping the cotton, textile and garment sector via a CBN Textile Revival Intervention Fund that would considerably reduce foreign exchange spent on cotton and other textile imports</li> </ul>

		<ul style="list-style-type: none"> <li>• To protect our farming investments, the Government deployed five thousand (5,000) Agro-Rangers and employed thirty thousand two hundred and eighty-nine (30,289) in our para-military agencies.</li> <li>• The government is integrating rural communities into the formal economy by extending access to credit and inputs to rural farmers and building feeder roads.</li> </ul>
3	Promote the production of agricultural raw materials to meet the needs of an expanding industrial sector and export market as well as mechanized agriculture.	<ul style="list-style-type: none"> <li>• Federal Executive Council approval in 2020 for a National Agriculture Mechanization Programme, “the Green Imperative”, in partnership with the Government of Brazil and multilateral financing institutions</li> </ul>
4	Develop agro-minerals and build soil-fertilizer-network.	<ul style="list-style-type: none"> <li>• Flagging off planting of over 400,000 fertilizer trees known as (Gawo) in August 2020. This was scientifically proved to have a lot of potentiality in soil improvement and protection and also mitigates effects of climate change</li> </ul>
5	Collaborate regionally within Africa for mineral fertilizer development, i.e., phosphates, limestone, phosphorus, potash, etc.	<ul style="list-style-type: none"> <li>• The Presidential Fertilizer Initiative, Government-to-Government agreement with the Kingdom of Morocco, created more than a million metric tonnes of fertilizer produced since 2017</li> <li>• This translated to the distribution of more than 18 million 50kg bags of NPK fertilizer in the first three years of the PFI</li> <li>• The PFI revived 31 blending plants with a combined installed capacity of more than 2.5m MT. This initiative has created a significant number of direct and indirect jobs across the value chain.</li> <li>• Price reduction of fertilizer from between N9,000-N11,000 per bag, to N5,500</li> <li>• Forex savings of US\$150m annually through the substitution of imported components with locally manufactured ones and Subsidy savings of 50 billion Naira annually</li> </ul>

Source: The FMARD Website and Presidential Speech June 12, 2020.

### 3.4.2.3 Private Sector Expectations and Priorities

- i. Generation and adoption of research technologies and use of research consortia
- ii. Farming equipment procured by the FMARD to be sold to farmers at a 50.0 per cent discount to actualize food sufficiency
- iii. Employment generation and foreign income earning
- iv. Training for agriculture extension personnel

#### 3.4.2.4 Enablers for Agricultural Development

- i. Water for irrigation projects and fertilizer plants
- ii. Economic corridors to target commodity value chains by region
- iii. Revitalization of the commodities exchange market
- iv. A price support mechanism for guaranteed minimum prices
- v. Revision of the Land Use Reform Act to accommodate the certification of farmlands
- vi. Construction of Roads connecting farms to markets and storage silos
- vii. Agri-industrial parks and Staple Crop Processing Zones (SCPZ) to drive food manufacturing. The Government could enable this by putting in place appropriate fiscal, investment and infrastructure policies for staple crop processing zones including:
  - viii. Tax breaks on import of agricultural processing equipment;
  - ix. Tax holidays for food processors that locate in these zones;
  - x. Support infrastructure, especially complementary investment by the government in roads, logistics, storage facilities, and power;
  - xi. Infrastructure will focus on power, irrigating, flood control, roads, rail, air, etc;
  - xii. SCPZ will link farmers in clusters to food manufacturing plants;
  - xiii. Develop Agricultural Investment Code, in partnership with the Ministry of Finance and Ministry Industry, Trade and Investment as well as the CBN;
  - xiv. The location of SCPZs will be dependent on a combination of State support and an analysis of the comparative advantage of the region to produce the identified commodity.
  - xv. Knowledge exchange networks
  - xvi. Farm support centres.

### 3.4.3 Mining Sector

#### 3.4.3.1 Current Developments in the Mining Sector

Mining infrastructure plays a crucial role in the overall development of the sector and the enhancement of its contribution to the economy. Nigeria has a rich deposit of solid minerals. The mining sector has identified over 44 solid mineral deposits across the country, including gold, iron ore, coal, limestone, dolomite, kaolin, barites, tin, as well as gemstones and dimension stones. Critical mining infrastructure such as transportation (Roads and Rails), energy generation and transmission, water pipelines and others, are virtually non-existent or in deplorable conditions. Adequate and reliable infrastructure is imperative to enhancing global capital inflow and attracting foreign direct investment required for the development of the sector. It is also important in meeting the national objective of diversification of the nation's revenue base and job creation.

Nigeria has, among others, deposits of coal, gold, columbite, tantalite, bitumen, iron ore, and uranium. Coal is found in Kogi, Nasarawa, Enugu, Gombe, Adamawa, Akwa Ibom, Bauchi, Cross River, and Benue states. Gold deposits are found in Northern Nigeria, most prominently near Maru, Anka, Malele, Tshon Birnin, Gwari-Kwaga, Gurmana, Bin Yauri, Okolom-Dogondaji. Columbite

and tantalite are found in Nasarawa State near the Jos Plateau, as well as in several areas in southeast Nigeria. Bitumen deposits are found in Lagos, Ogun, Ondo, and the Edo States. Uranium deposits are found in Cross River, Adamawa, Taraba, Plateau, Bauchi, and the Kano States. Nigeria has several deposits of iron ore, but the purest deposits are in and around Itakpe in Kogi State.

The Mining and Quarrying sector in Nigeria has four sub-activities which include Crude Petroleum and Natural Gas, Coal Mining, Metal Ores and Quarrying, and other Minerals. The sector contributed 8.91 per cent to 2019 annual GDP compared with its contribution of 8.74 per cent in the corresponding period in 2018. It grew to 4.26 per cent in 2019 from 1.17 per cent in 2018, representing an increase of N6,362.63 billion from N6,102.56 billion respectively. This increase could be attributed to the positive impact of Government policy implementation aimed at revamping the sector.

On a quarter by quarter basis, mining contributed 9.54 per cent in the first quarter of 2020 compared with the contribution of 7.48 per cent in the fourth quarter of 2019.

The growth of the mining sector decreased to 4.58 per cent in the first quarter of 2020 from 6.07 per cent recorded in the fourth quarter of 2019.

The development in the sector following collaborative efforts of all stakeholders as well as a shared vision for the sector led to the creation of a road map in 2016 for the growth and development of the Nigerian Mining Industry (On the Road to Shared Mining Prosperity). Other notable activities in the last few years include the following:

- i. The Ministry of Mines and Steels Development (MMSD) secured access to the revolving mining sector component of the Natural Resources Development Fund of a ₦30 billion (approx. USD100m). The objective of the intervention fund was partly to focus on exploration, formalization of artisanal miners, and the provision of access to funding for genuine miners.
- ii. The Ministry also secured support from the World Bank for USD150 million for the Mineral Sector Support for Economic Diversification programme. The objective of this fund is to provide technical assistance for the restructuring and operationalization of the Mining Investment Fund, which would make finance available to operators through development finance, micro-finance, and leasing institutions. The fund will also help to make active previously abandoned proven mining projects like tin ore, iron ore, coal, gold, and lead-zinc.
- iii. The Ministry is currently working with the Nigerian Sovereign Investment Authority and the Nigerian Stock Exchange to pull together a USD600 million investment fund for the sector.
- iv. The Ministry also commenced capacity building on Mining Financing with banks and financial institutions, to build their knowledge assets in the sector, to better evaluate and finance bankable feasibility studies and business plans by enterprising miners.
- v. The Nigerian Geological Survey Agency (NGSA) has signed an MoU and Technical Cooperation Agreements with the China Geological Surveys, Shandong Mineral Exploration Agency and the National Office Hydrocarbons and Mines ‘ONHYM’ of Morocco. The

collaborations were intended to leverage the expertise and state-of-the-art technologies of these organizations in assisting Nigeria to generate investor-friendly geoscience data.

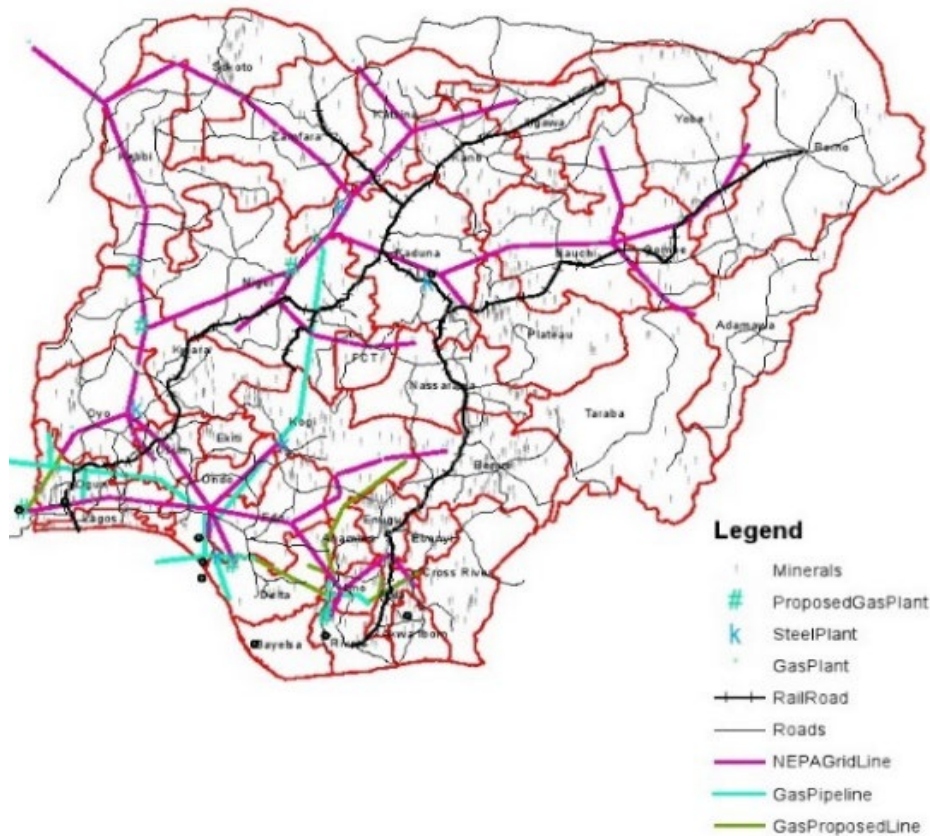
- vi. The Ministry has also initiated discussions with SGS, a world-renowned material testing company, to activate the NGS Laboratory Facilities in Kaduna towards achieving ISO 17025 accreditation. The objective is to significantly reduce the thousands of mineral samples being shipped abroad for analysis thereby reducing the huge revenue loss and correspondingly incentivize the mining sector.
- vii. The Ministry implemented a provision in the Nigerian Minerals and Mining Act, 2007, which allows for the revocation of non-performing or defaulting mineral titles. This exercise led to the revocation of several titles, and the generation of revenue to the federation account from titleholders who met the deadline to regularize their statuses.
- viii. As part of the efforts put in place to improve infrastructure and de-risk the sector, the Ministry has been in discussions with the Bank of Infrastructure, as part of a consortium, to attract private capital investments for the critical mining infrastructure, which will help to spur necessary investments in the industry. The Ministry is also working in collaboration with the Ministry of Transportation to develop the Central Rail Corridor and with the Ministry of Power, Works and Housing on the development of Coal to Power projects.

However, a key challenge militating against improved sector performance is the gross infrastructure deficit. For instance, the country has connected the Ajaokuta Steel Complex with the first stretch of standard gauge rail from the Itakpe Iron Ore mine (51 km) installed since 1992 but yet to be commissioned for use. The steel plant has been connected to its supplier of iron ore, and the line effectively links the heart of the iron ore site with the Delta Steel Company's Aladja port near Warri passing through Itakpe, Ajaokuta, Agbor, and Ore, with six stations along the route, was conceived to carry steel products and raw materials from the Delta Steel Company.

The rail project linking Aladja was abandoned after about 254 kilometres had been constructed due to a lack of funds. However, the Federal Ministry of Transportation has mobilized to site the contractors handling the Central Railway Line and the Itakpe/Ajaokuta Railway Line. The lines linking the Complex to inland steel plants in Katsina, Warri, Ajaokuta, Oshogbo, and Jos as planned and other industries in the hinterland have not been constructed. Also, the proposed East-West rail line running from Lagos to Enugu, the main site of coal production, has not been realized. These industries cannot function without the railways with a new modern system, the standard gauge, to replace all the 3,800 km of obsolete lines.



**Figure 3.24: Mineral Location and Distribution of Infrastructure**



Source: Natural Earth, African Development Bank.

Nigeria’s mineral resources can be categorized according to their usage, or the geological terrains in which they are found. In terms of use, mineral resources of Nigeria are generally classified into five broad groups:

- Industrial minerals (e.g. barite, kaolin, gypsum, feldspar, limestone)
- Energy minerals (e.g. coal, bitumen, lignite, uranium)
- Metallic ore minerals (e.g. gold, cassiterite, columbite, iron ore, lead-zinc, copper)
- Construction minerals (e.g. granite, gravel, laterite, sand)
- Precious stones (e.g. sapphire, tourmaline, emerald, topaz, amethyst, garnet, etc)

These minerals are found in the different geological (age/lithological) groups in Nigeria which form three main categories:

- Pan-African basement rocks (e.g. gold, coltan, iron ore)
- Mesozoic Younger Granite (tin, columbite)
- Cretaceous-Tertiary sedimentary basins (lead-zinc, barite, limestone, coal, bitumen)

**3.4.3.2 Aspirations and Targets for the Mining Sector**

- Significantly increase the sector’s contribution to national GDP;
- Generate revenue, grow the economy and develop infrastructure through mining and mineral resources

- Inauguration of the Ajaokuta Presidential Project Implementation Team
- Working towards ensuring that commercial activity return to Dana Rolling Mill in Katsina State;
- Close collaboration between the Federal, State and Local Governments to achieve full harnessing of mineral resources for economic development;
- MMSD collaborating with the Ministry of Foreign Affairs to convince countries, particularly, the UAE (where most of the smuggled golds from Nigeria are taken to) to ensure that any gold that is coming from Nigeria is certified;
- Profiling and registration of all miners in the country, local and foreign; networking with neighbouring countries on ways to curb illegal mining as well as educating Customs and Immigration Services to see illegal export of Nigeria's minerals as economic sabotage;
- Encourage the value addition of minerals;
- Ensure mining and mineral extraction are done sustainably, including social, environmental and safety considerations;
- Organize artisanal and small-scale miners for optimal participation to reduce rural-urban migration;
- Ensure robust geological data for investors and national planning;
- Promote rapid development of the mining and minerals sector for diversification of the Nigerian economy;
- Collaborate regionally within Africa on geological surveying and mineral resources/raw material development;
- Collaborate within Africa on infrastructure design and development, especially as it relates to mining;
- Strengthen collaboration with the Nigerian Customs Service to curb the menace of smuggling scrap metals across the borders to help grow the local steel industry; and
- Sustain research collaboration with Nigeria Tertiary Institutions to further research on the country's minerals resources and value addition.

With regards to targets, government intends to substantially grow the sector in terms of GDP and employment creation. Annual government revenue from mining taxes is targeted to increase fivefold, from the current USD 130 million to USD 640 million. Annual royalties collected are targeted to surge from the current USD 12 million to USD 130 million by 2023, USD 260 million by 2033, and USD 640 million by 2043. Particular emphasis will be placed on increasing the connectivity of mining sites with adjacent parts of the value chain, including transportation (roads, rail) and also energy and ICT.

Other targets for the mining sector include:

- To implement identified measures to attract private sector participation in the sector; to establish mining sector in the six geopolitical zones for gold as a prelude to same for the six other prioritized minerals; refocus the SMDE (Solid Minerals Development Fund) to de-risk value chains in the mining sector and diversify national income streams by 2021;
- To monitor and evaluate results outlined against set measures for the steel sector as well as produce geological maps of the entire country to attract FDI to the mining sector and review the growth in mining value chain de-risked by the SMDE between 2022-2023; and

- To make two major steel complexes functional at the minimum; and also grow solid mineral GDP averaging 8.7 per cent yearly as well as the SMDE to contribute N8.0 Billion to solid minerals GDP annually, and create 2 million direct and indirect jobs by 2023.

Table 3.21 further summarizes these aspirations, targets as well as the achievements so far.

**Table 3.21: Aspirations and Targets as well as Achievements of the Mining and Quarrying Sector:**

S/N	Aspirations and Targets	Achievements to date
1	Significantly increase the sector's contribution to 3.0 per cent of GDP by 2025 and above 3.0 per cent by 2043	<ul style="list-style-type: none"> <li>• The mining and quarrying grew to 4.26 per cent in 2019 from 1.17 per cent in 2018. The sector contributed 8.91 per cent to 2019 annual GDP compared with its contribution of 8.74 per cent in the corresponding period in 2018.</li> </ul>
2	Encourage the value addition of minerals.	<ul style="list-style-type: none"> <li>• Bank of Industry has established a ₦5 Billion Fund for Artisanal Miners, as part of the Federal Ministry of Mines and Solid Minerals Development's Programme to boost Mining activities in Nigeria</li> <li>• Resuscitation Deal for the Ajaokuta Steel Rolling Mill, agreed by Presidents Buhari and Putin, during the Russia Africa Summit in 2019. The Russian Government has agreed to support the completion and full operationalization of the plant</li> </ul>
3	Ensure mining and mineral extraction are done sustainably, including social, environmental and safety considerations	<ul style="list-style-type: none"> <li>• With foreign and domestic investments and the participation of Small-Scale Miners, Government is harnessing the supply value chain in gold production</li> </ul>
4	Organize artisanal and small-scale miners for optimal participation to reduce rural-urban migration.	<ul style="list-style-type: none"> <li>• Flag-off of the Presidential Artisanal Gold Mining Development Initiative (PAGMI) Biometric Exercise</li> </ul>
5	Ensure robust geological data for investors and national planning.	<ul style="list-style-type: none"> <li>• Exploration activities on the key priority minerals (i.e gold, coal, lead/zinc, limestone, bitumen) is near completion to improve the bankability and to attract the investment into the sector</li> </ul>
6	Promote rapid development of the mining and minerals sector for diversification of the Nigerian economy.	<ul style="list-style-type: none"> <li>• Inauguration of the Ministerial Technical Committee on the formulation of a framework for sustainable development and growth of the Metals Industry in Nigeria as part of ongoing effort to diversify the economy from dependence on oil and gas.</li> </ul>
7	Collaborate regionally within Africa on geological surveying and mineral resources/raw material development.	<ul style="list-style-type: none"> <li>• Launching a fully digitized mineral rights management platform for quick processing of mineral rights application digitization of records and plugging revenue leakages.</li> </ul>

8	Collaborate within Africa on infrastructure design and development, especially as it relates to mining.	<ul style="list-style-type: none"> <li>Government has put incentives in place such as zero per cent import duty charge to optimize revenue generation from the mining of solid mineral</li> </ul>
9	Strengthen collaboration with the Nigerian Customs Service to curb the menace of smuggling scrap metals across the borders to help grow the local steel industry	<ul style="list-style-type: none"> <li>Constitution of a Joint Ministerial Committee to work out modalities of implementation</li> </ul>
10	Sustain research collaboration with Nigeria Tertiary Institutions to further research on the country's minerals resources and value addition.	<ul style="list-style-type: none"> <li>The Ministry disbursed over N124 million in grant to about eleven Universities/polytechnics to conduct research on areas relevant to the mandate of the Ministry.</li> </ul>

Source: MMSD Website and Presidential Speech of June 12, 2020.

#### 3.4.3.3 Private Sector Expectations and Priorities

- Continuous reforms and focus on the sustainability of initiatives
- Punitive measures being put in place that will see illegal mining operators go to jail for two years without an option of fine
- Government to invest in the acquisition and integration of geo-scientific data
- License exploitation of Nigeria's strategic solid minerals – coal, bitumen, iron ore, limestone, barites, gold, and lead/zinc
- Provide basic mine site infrastructure like 'pit to port' road and rail networks
- Develop a clear framework for private sector-led mining activities in Nigeria
- Establish a mineral exploration and development authority
- Ensure reliable and increased power supply.
- The government will pursue strategies to enhance the delivery, functionality, and resilience of the mining infrastructure to be provided for
- The government will strengthen the infrastructure network by updating and integrating mining, transportation and power requirement in the national implementation plan

#### 3.4.3.4 Key Enablers for Mining Sector Development

- A stronger regulatory framework for the sector and greater regulatory transparency
- Access to geoscientific data for investors
- Addressing the activities of illegal miners and smugglers
- Fiscal incentives for investors
- Improved transportation infrastructure, roads, and rail for haulage
- Adequate budgetary appropriation
- Information and Communication Technology (ICT)
- Available enduring policy, legal and regulatory framework
- Infrastructure survey of the mining sector

- Adequate and affordable supply of power
- Strengthening institutional frameworks
- Stakeholder engagement and collaboration with states
- Perception of index improvement
- Improved access to funding and incentives
- Improved transportation and bulk handling facilities
- Improved capacity development and skilled development
- Availability of accredited analytical laboratory
- Need for Geological Data in a usable format

The major relevant legislation for this sector is The Nigerian Minerals and Mining Act, which was established to repeal the Minerals and Mining Act of 1999 and re-enact the Nigerian Minerals and Mining Act 2007 to regulate all aspects of the exploration and exploitation of solid minerals in Nigeria and all other related purposes. These have been assessed to be in line with international standards.

### 3.4.4 Investment Requirements for Agriculture, Water and Mining

The Annual Required Investment for Agriculture, Water, and Mining Sub-Sectors is N468 billion or about USD\$1.22 billion. This amounts to about USD\$28.06 billion over the next twenty-three-year period. In the next five years (2020-2024) the average annual investment requirement for the sub-sectors is estimated at USD\$2.57 billion of which 62 per cent is expected from the private sector while the balance (38 per cent) is expected public investment across these sectors. The national focus should be to set the stage and ensure favourable framework conditions (legal, political, supporting infrastructure such as transportation) to attract such large-scale private investments. It should be noted that agriculture has substantial overlap with other areas such as transportation and water.

## 3.5 Housing

The stock of housing in Nigeria was estimated to be over 11 million houses with a deficit of about 17 million by 2012<sup>1</sup>. Based on the 2006 national population census estimate of 140,431,790<sup>2</sup> and an expected growth rate of 2.58 per cent, it is projected that the country's current population is over 206 million and will exceed 320 million by 2043<sup>3</sup>. Following these patterns, it is also expected that Nigeria's housing deficit in the year 2020, exceeds 23 million units, and will be over 40 million units in 2043, aside the fact that these the stock of housing is mostly characterized by chaotic informal settlements with inadequate housing types lacking in basic services like potable water, sanitation, public power supply, and access roads. This challenge in housing supply is particularly highlighted in urban areas, where the population has grown at an astronomical rate of over 5.8 per cent annually, over the past three decades. Whereas the existing urban population constitute over 50.0 per cent of

<sup>1</sup> Federal Ministry of Lands, Housing and Urban Development, *National Housing Policy*, (Abuja: 2012), pp.iii.

<sup>2</sup> <http://www.population.gov.ng/files/nationafinal.pdf>

<sup>3</sup> <http://www.nationalpopulation.org>

the country’s total population, and is expected to rise to 60.0 per cent by 2025<sup>4</sup>, as of 2018, about 80.0 per cent of these urban population had no access to decent housing<sup>5</sup>.

Generally, the shortfall in housing supply is exacerbated by issues that hinder access to land and mortgage financing. Although several niggling legislative setbacks like the Land Use Act of 1978 have not received adequate attention, several efforts have been made at providing legislative and policy enablers to surmount these issues. Some of these attempts were conveyed across blueprints like the National Housing Policy (2002), National Building Code (2010), NV 20: 2020 and the Economic Recovery and Growth Plan 2017-2020, amongst other recent examples. In all, considerable attention has been tailored towards improving the situation, with special focus on the evolution of a housing sector that will make housing finance available to the vast majority of Nigerians, create a land management system that will stimulate rapid and broad-scale housing construction strategies that is domestic technology based.

In terms of homeownership, only 6-7.19 per cent of Nigeria’s population can access mortgages or make outright cash purchases for housing units. This situation is exacerbated by the fact that only about 14.0 per cent of households earn between 133 USD and 267 USD, monthly. These households would likely only afford adequate housing through public-funded initiatives that offer subsidized housing for low-income earners or social housing. The current mortgage to GDP ratio is estimated at 0.6 per cent, while prime mortgage rates among commercial deposit banks range from 11 per cent to 27.0 per cent, and as much as 31.0 per cent. Leading commercial banks offering mortgages demand an average down payment of over 25 per cent of property value and offer a repayment term that ranges from 10–20 years.

**Figure 3.25: Mortgage to GDP Ratio of BRICS, MINT & Selected African Nations<sup>6</sup>**

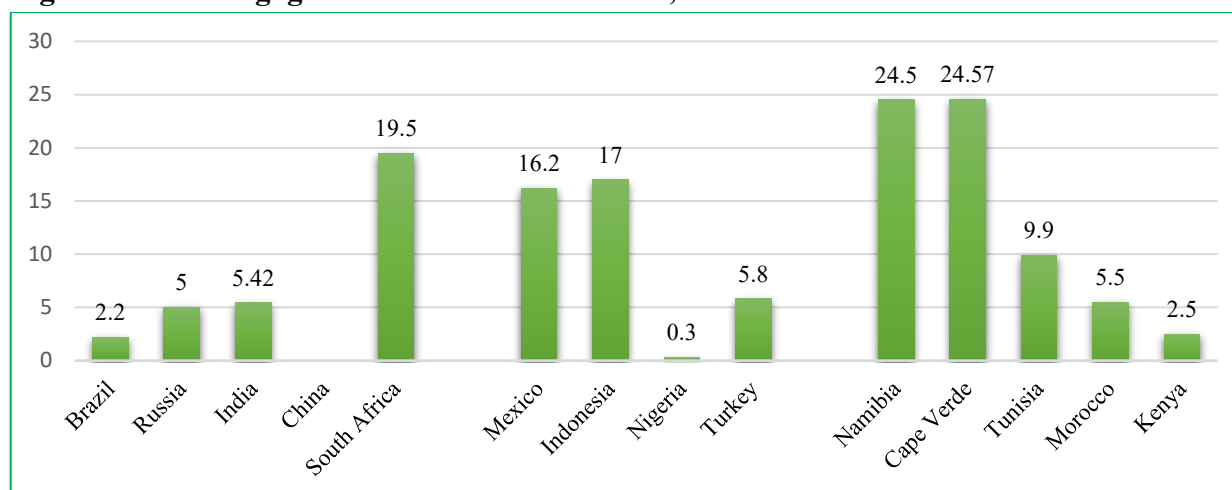


Figure 3.25 and 3.26, compare Nigeria’s mortgage market with that of nations in the BRICS and MINT economic blocks as well as selected African nations. The indices, which are very crucial to

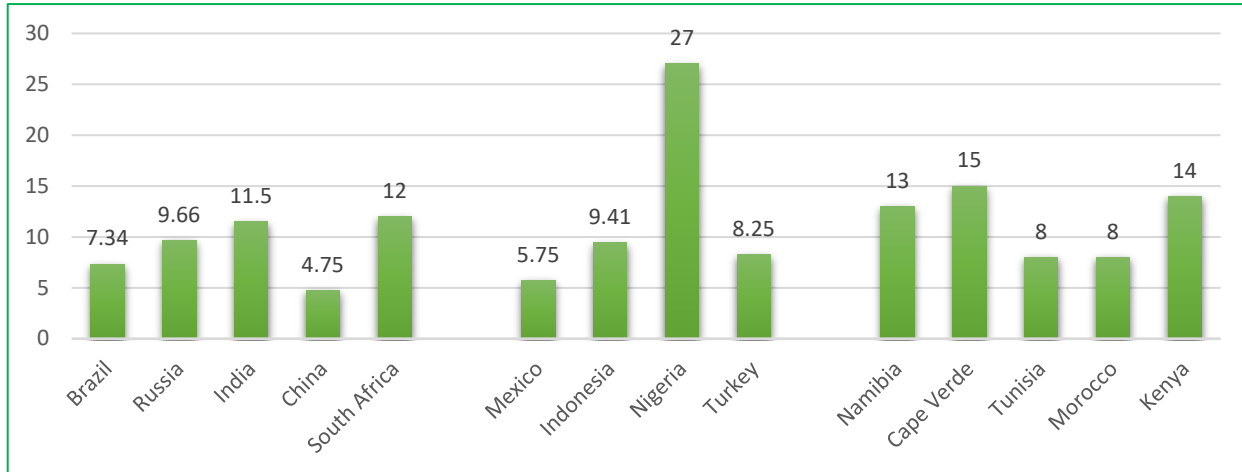
<sup>4</sup> Federal Ministry of Lands, Housing and Urban Development, *National Urban Development Policy*, (Abuja: 2012), pp.iii.

<sup>5</sup> World Bank (2018)

<sup>6</sup> According to data on Prevailing Mortgage Interest rates in Africa in 2019, by country, and rate of GDP to mortgage in Africa in 2019, by country, retrieved from <https://www.statista.com/statistic/>; data on mortgage credit interest rate by country from [https://www.theglobaleconomy.com/rankings/mortgage\\_interest\\_rate/](https://www.theglobaleconomy.com/rankings/mortgage_interest_rate/); and <https://tradingeconomics.com>.

closing the huge gap in housing supply, show that Nigeria has the highest mortgage rates – though very low when considered as a percentage of GDP - in comparison with the BRICS, MINT and most of Africa. Therefore, it is essential for housing solutions to bridge the country’s huge housing deficit to leverage home-grown technology base.

**Figure 3.26: Average Mortgage Rates of BRICS, MINT & Selected African Nations<sup>7</sup>**



The Vision is to provide affordable housing through collaboration among federal, states and local governments as well as the private sector to produce and implement a unified and integrated housing development programme. This would enable new funding opportunities, open new layouts and provide sites and services for the private sector to develop good quality affordable and decent mass housing to meet the nation’s housing demands by 2043.

### 3.5.1 Current State of Housing

Notable progress made in the public sector towards making access to housing easier and more affordable, included the development of 3,878 housing units through the Federal Ministry of Works and Housing (FMWH) coordinated by the National Housing Programme (NHP) between 2016 and 2019. A total of 1210 units of these houses have been completed. Also, 1970 housing units have been delivered through PPPs between 2015 and 2019, and the Federal Government Staff Housing Loans Board (FGSHLB) provided 1,659 housing loans to fund 601 house purchases in the period.

To deepen housing mortgage financing, the Federal Government initiated Nigeria Housing Fund Programme (NHFP) as part of its Social Investment Fund (SIF) initiative with an initial capital of N100 billion. The NHFP is coordinated by the Central Bank of Nigeria (CBN) and supported by contributions from the World Bank and African Development Bank (AfDB). Overall, The NHFP aims at accelerating the development of the domestic mortgage industry such that it becomes entirely private sector-driven in the medium to long term. It is also expected to create jobs and a robust primary local content participation, by supporting the extensive development of value-chains across the local construction industry. Its principal strategies are to provide long-term refinancing of mortgages and standardized mortgage procedures through the Nigerian Mortgage Refinance Company (NMRC). It is also to incentivize lenders to accept loans with lower down payments to increase affordability and ensure a robust primary mortgage market. This would increase access for

<sup>7</sup> Ibid.

intending buyers and provide borrowers with an initial down payment, with a mortgage for homeownership, through the Mortgage Guarantee/Insurance Scheme (MGS). Also, it would stimulate increased lending to low-income earners in the formal and informal sectors through Housing Micro Finance Scheme (HMFS).

From the NHFP, the Family Homes Fund Limited (FHFL) was created, has an innovative public-private sector-driven financing solution, structured as a Real Estate Investment Trust (REIT) to pool funds from the private sector, pension trust, insurance funds, multilateral agencies and investors for housing development. For over four years, the Fund has committed to raising ₦1.3 trillion to facilitate and supply 500 000 homes and 1.5 million jobs for low-income earners. The FHFL also aims at enabling developers deliver affordable ready-to-occupy homes with basic amenities like water and power. This is expected to be done by providing long tenor mortgages at single-digit interest rates to qualifying first time home buyers within targeted household income thresholds. Generally, the FHFL is also expected to channel funds from savers to borrowers so that builders have the required capital to construct and prospective buyers can access credit to purchase homes. Through collaborations, the FHFL has delivered 582 affordable houses, among other ongoing developments, and created over 26,599 jobs in its first two years of operation.

Furtherance to the efforts highlighted earlier, the Real Estate Developers Association of Nigeria (REDAN) alongside the CBN, FMWH and eleven other institutions operate a National Real Estate Data Collation and Management Programme (NRE-DCMP) in 2019, to ensure the comprehensive collation and management of data to support planning, pre-construction, construction and post-construction phases in housing delivery.

Overall, the FSS2020 still pegs homeownership at about 10.0 per cent. To accelerate the delivery of decent and affordable housing for over 315 million population by 2043, it is expected that over 1million housing units would be delivered annually, and as a priority. The Federal Government intends to deliver at least 200,000 houses annually through direct development among other private-sector-driven housing delivery. Existing appraisals by the FMWH shows that current housing delivery capacities at the federal level is 48,000 housing units per annum. These include 2,000 units by the Federal Ministry of Works and Housing, 30, 0000 by the FHA, 7,000 from the FMBN, and 9,000 from the FHFL.

### **3.5.2 Policy objectives and Targets**

- Overcome critical constraints in the provision of new housing.
- Deepen housing financing to drive an increase in house ownership by 50.0 per cent.
- Improve land administration and make serviced land with secured tenure easily available, accessible, transferable and affordable for housing development.
- Build a domestic technology base for housing production and strengthen value-chains in housing delivery.



- Increase private sector participation in the provision of critical Pro-Poor and People-First driven affordable housing.

The aspirations and targets of towards achieving adequate affordable housing in Nigeria are shown in Table 3.22

**Table 3.22: Aspirations and Targets for achieving adequate affordable Housing**

Aspirations	Target		
	2025	2030	2043
Review enabling legislations	50 per cent	75 per cent	100 per cent
Provide secure land titles for development of affordable housing units annually	1 million	1.5 million	2 million
Increase FMBN capital base	200 Billion Naira	350 Billion Naira	500 Billion Naira
Reduce mortgage rate	30 per cent	55 per cent	70 per cent
Train and certify artisans in trades within housing delivery value-chain	300,000	1 Million	5 Million
Develop modular housing construction facilities across 36 States and FCT.	12	24	37
Increase volume of local low-cost building materials and technologies in housing delivery.	25 per cent	50 per cent	70 per cent
Capture housing units in a comprehensive database	50 per cent	75 per cent	100 per cent
Federal Government deliver affordable housing units.	500,000	1.5 Million	4.1 million
Respective State Governments build 5,000 new housing units annually	900,000	1.8 Million	4.1 million
Ensure that new housing development plans attain statutory approvals.	40 per cent	80 per cent	100 per cent
Build 800,000 units of new affordable housing through private sector led initiatives.	4 million	8 million	18.4 million

**Source:** Revised NIIMP Team.

### 3.5.3 Strategies for Housing Development

The key to achieving adequate quantities of social and affordable housing in Nigeria is to develop a very clear long-term housing development philosophy that seeks to provide an adequate enabling environment to stimulate modular housing production, through a home-grown technological base. This involves clearing legislative bottlenecks that hinder improved property and security rights, access to mortgage lending and long-term funding for housing development, and the better utilization of land resources. Specific activities to strengthen the enabling environment for affordable housing delivery include the following:

- Improve legal and regulatory framework, incentives, project preparation, technical resource capacity gap, and government openness to private sector drive PPPs in the delivery of affordable housing and its ancillary facilities.
- Strengthen regulation on housing development and improve the participation of the built-environment industry's professionals, like the Nigerian Institute of Architects (NIA), Nigerian Society of Engineers (NSE), Nigerian Institute of Town Planners (NITP), Nigerian Institution of Estate Surveyors and Valuers, Nigerian Institute of Builders (NIB) and the Nigerian Institute of Quantity Surveyors (NIQS), in the planning, financing, and production of housing.
- Reposition the FMBN and the FHA through improved financial base and re-engineer operations to deepen mortgage financing.
- Improve access to finance for the construction industry, through the introduction of safe and profitable mortgage products that target actual end-users.
- Accelerate the development of appropriate capacities to achieve 100.0 per cent sufficiency in manpower and the production of basic building materials and components of acceptable quality from local resources, to stimulate effective housing development and economic growth.
- Promote indigenous technology base and develop modular construction capability for affordable housing in the 6 geopolitical zones.
- Develop low-cost building materials and technologies.
- Establish a reliable and comprehensive database for the collation and warehousing of relevant data on housing development in Nigeria.
- Increase public financed housing production capacity, at the Federal level, from 48,000 – FMWH (2000), FHA (30,000), FMBN (7,000), and FHFL (9,000) - units per annum to 100,000, in the short-term and 200,000 units in the long-term.
- Ensure that respective State Governments build 5,000 housing units, annually.
- Ensure that the private sector delivers 800,000 housing units at the lowest best price, annually.

Relevant legislations to enable housing development are shown in Table 3.23

**Table 3.23: Legislations that Affect Housing Development in Nigeria.**

Enablers	Status	Intervention Required	Responsibility
National Housing Policy	Approved in 2012	Reflect current implementation realities and update housing statistics.	FMWH NASS
National Urban Development Policy	Approved in 2012	Reflect current development and trends in urban development.	FMWH NASS
National Land Policy	Process is ongoing	Accelerate policy development process and approval.	FMWH NASS
Public Asset Maintenance Policy	Approved in 2019.  Federal Public Asset Maintenance Department created in the FMWH	Strengthen Implementation.  Domesticate Legislation in States.	FMWH NASS
National Building Code	Reviewed in 2006 and 2017, and undergoing review.	Accelerate ongoing review, approve and domesticate.	Nig. National Building Code Advisory (NNBCAC), FMWH, and NASS
Land Use Act	Enacted in 1978	Review Land use Act to foster fast and easy processing of land titles documents, building permits and ensure longer leaseholds.	FMWH NASS
Federal Housing Authority Act	Enacted in 1973 Partially commercialized in 1988	Increase autonomy.	FMWH NASS
National Housing Fund Act	Enacted in 1992	Increase the minimum income threshold for compulsory contribution to the NHF scheme and include coverage for self-employed persons. Encourage banks to comply with given obligations.	FMWH, FMBN, NASS
Energy Efficiency in Building	Enacted in 1991	Emphasis should be on strengthening indigenous R&D and incentives for uptakers.	FMWH NASS
Mortgage Institutions Act	Approved in 2012	Reflect current implementation realities and update housing statistics.	FMWH NASS
National Construction Policy	Approved in 2012	Reflect current development and trends in urban development.	FMWH NASS

**Source:** Revised NIIMP Team.

### 3.5.4 Required Infrastructure Investments

Overall, given that the conservative estimate of Nigeria's housing stock is about 12 million, around 28 million additional housing units will be required to meet the demands of over 312 million projected population by 2043. To close these gaps, 1.22 million additional housing units will be delivered annually for the next 23 years. This implies a substantial need for investment to boost the production of new housing units. Therefore, USD 10,000 is estimated to be the unit cost of constructing one affordable housing, based on the prevailing cost of construction. It is estimated that at least USD 300 billion is required over the next 23 years, to close the gap (i.e. an average of USD 13.5 billion per annum).

## 3.6 Social Infrastructure

Social infrastructure development cuts across almost all sectors of the economy, as it has to do with the wellbeing of all strata of the society. Facilities and services for promoting societal wellbeing are related to health, education, sport, labour productivity, environment, culture and tourism, and developmental facilities for youth and women.

The sector covers 11 sub-sectors (health, education, youth and sports, women affairs, social development, labour, productivity, information, environment, and tourism). This document groups these sub-sectors into the following four broader categories:

- Health, Women affairs and social development;
- Education, youths and sports;
- Environment, tourism, information; and
- Labour and productivity.

### 3.6.1 Health, Women Affairs and Social Development

#### 3.6.1.1 Overview of Healthcare Sector

The 2019 Corona Virus pandemic, more than ever, painfully demonstrates how intertwined healthcare and the economy have become. The unprecedented effect of the pandemic poses a major threat to global public health, especially in the area of disruptions to the management of other diseases as well as the entire healthcare service delivery infrastructure that has seen most of the gains achieved in medical care over the past decades, under the threat of being wiped out within a short period of time. Short to medium-term measures have been employed to deescalate the severity of the pandemic, but globally, the frailties that have been exposed in healthcare systems call for a fit for purpose architecture that would be resilient to unpredictable, large-scale health challenges that would require the urgent mobilization of resources and or affect large populations. This is especially important in situations like current scenarios that are particularly impelled by lifestyle changes and aging populations.

In Nigeria, the health burden caused by the pandemic has the potential to disrupt and further weaken an already fragile healthcare delivery system. Considering the extended effects of the Covid-19 pandemic and a further over-stretched infrastructure base, healthcare delivery service must be considered more in terms of preparedness and response plans to address any of such outbreaks or intensive lifestyle changes related to ailments. This measure is necessary to avoid losing previous gains in the management of other diseases, which might be eroded, especially in a period of increase in the prevalence of Anti-Microbial Resistance (AMR), which is a rapidly growing public health concern. The focus of healthcare delivery is therefore shifted solely from the prevention of communicable diseases and management of non-communicable diseases to driving efficiency, shifting care from hospital to outpatient services, incentivizing innovations that address marginal but fundamental healthcare needs, especially for vulnerable populations, and strengthening of specialty in healthcare services. This measure focalizes a new strategic direction in healthcare delivery that would address new realities whilst remaining sustainable.

### **3.6.1.2 Current State of Healthcare**

Years of under-investment in healthcare delivery in Nigeria has resulted in poor and inadequate infrastructure, including hard infrastructure like buildings and modern equipment and technology, and soft infrastructure such as major underlying systems to support data management, business continuity, and even the adequacy, mix and distribution of healthcare workers. This has particularly resulted in the poor development of key specialties and loss of confidence in the general quality of healthcare delivery, especially in the management of non-communicable diseases. To further, make the case worse, vaccine-preventable and infectious diseases remain the leading causes of morbidity and mortality in Nigeria.

The Nigerian healthcare system is organized as a hub of the radial referral system of primary, secondary, and tertiary healthcare delivery. Primary healthcare services are domiciled within the purview of Local Governments. State Governments are solely involved in the delivery of secondary healthcare service, while the Federal Government is responsible for the development of healthcare policies, the overall coordination of the healthcare system, and the delivery of tertiary healthcare services. Currently, Nigeria has 23,385 public Primary Healthcare Clinics (PHCs) or an average of 30 clinics per Local Government Area, 963 Secondary Care Centres or about 27 facilities per State, 42 Tertiary healthcare institutions, and 13 specialist hospitals across the country. Also, there are 8,355 private PHCs and 3,030 private secondary facilities.

The country's National Health Policy (2016) highlights the weakness and underperformance in all the building blocks of the healthcare delivery system. This situation is exacerbated by a near-total absence of social or financial protection mechanisms with very low insurance coverage that fuels high out-of-pocket expenditure on healthcare services. In a demonstration of the commitment to address these structural issues, the National Health Policy 2016 is aimed to promote multi-sectoral and public-private partnerships for the development and delivery of healthcare infrastructure and maintenance.

Key healthcare indicators for Nigeria are summarised as follows:

- Major causes of child mortality and morbidity are diarrhoea, acute respiratory infections, malaria, measles and other vaccine-preventable diseases, and the exacerbating effect of children's malnutrition.
- 132 deaths per 1,000 live births in 2018<sup>8</sup>, a level far above the target of 64 deaths per 1,000 live births agreed for the UN-SDGs.
- 512 women died per 200,000 live births due to pregnancy-related<sup>9</sup>.
- Access to primary healthcare is currently about 61 per cent with only 15 beds available per 1,000 population and only 30 primary healthcare centres per 100,000 people<sup>10</sup>.
- 54 years life expectancy in 2018 compared to Sub-Saharan African average of 61 years, and 69 years for Lower Middle-Income countries<sup>11</sup>.

### 3.6.1.3 Policy objectives for the Healthcare Sector

In the face of all these challenges, Nigeria's commitment to revitalizing its healthcare system is underscored by a robust health sector reform. In October 2014, the National Health Act was enacted into law and the Federal Government approved the revised National Health Policy (NHP) in 2016 to provide direction necessary to support and significantly strengthen healthcare delivery. The goal for healthcare infrastructure development in the NHP 2016 is to achieve adequacy in quality and network of healthcare services. Thus, the specific objectives of healthcare delivery include, to:

- improve availability and accessibility of high quality and functional healthcare facilities across the country to support affordable healthcare delivery;
- expand healthcare coverage in order to provide equitable access to healthcare services, especially in under-served areas;
- ensure that all healthcare infrastructure, including biomedical equipments, comply with very high quality standards and requirements;
- increase access to ambulatory (outpatient) healthcare services; and
- ensure effective maintenance of healthcare equipment and infrastructure at all levels.

### 3.6.1.4 Strategies

Considering the commitment of the NHP to promote multi-sectoral and public-private partnerships for health infrastructure development and maintenance, government is to provide policy support and incentives for private sector investment and foreign direct investment in healthcare service delivery. Further to the decision for Nigeria's Sovereign Wealth Investment to prioritize investment in

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<sup>8</sup> National Demographic and Health Survey report, 2018

<sup>9</sup> *ibid*

<sup>10</sup> *ibid*

<sup>11</sup> <https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=NG>

healthcare development, priority would be given to the development of physical infrastructure and strengthening of underlying systems that support the equitable delivery of high-quality healthcare service, especially in areas of Research and Development. To further make healthcare services more available, considering that primary healthcare is the bedrock of national health development in addition to the provision of financial risk protection to citizens, especially the poor and vulnerable population, the following infrastructural priorities also relate to improving healthcare delivery services in Nigeria:

- Functional PHCs would be affiliated to a contiguous General Hospital;
- All States should ensure that there is a functional and equipped General Hospital in every LGA manned by qualified personnel, with a strong referral system to contiguous tertiary hospitals;
- Existing tertiary and specialist hospitals would be revamped to meet the needs of the local population;
- Diagnostic and quaternary mono-specialist centres should be distributed in a manner that ensures equitable access to all sections of the country;
- A robust integrated health management information system would be established to generate timely data for evidence-based healthcare delivery decision-making and service improvement;
- Institutions that conduct development research to address priority health needs of the country would be strengthened.

In line with the NHP, the benchmarks for financing healthcare development are as follows:

- Governments at all levels to spend at least 15.0 per cent of their annual budgets on health care development;
- Federal Government is to set aside at least 1.0 per cent of the Consolidated Revenue Fund for the establishment of the Basic Healthcare Provision Fund (BHCF), as provided for in the National Health Act 2014; and
- The allocation of 15.0 per cent from the BHCF for the maintenance of health infrastructure, equipment and transport for eligible primary healthcare facilities, in line with the National Health Act 2014.

### **3.6.1.5 Women Affairs and Social Development**

Infrastructure pertaining to women development in Nigeria includes skill acquisition centres and schools for social workers. Various studies and surveys have shown that women are in the lowest income level in most Nigerian organisations and contribute to the highest percentage of the poor and vulnerable. They also participate predominantly in the informal sector of the economy. The Federal Ministry of Women Affairs has the mandate of promoting women development and protecting the rights of women and other vulnerable groups.

In line with the foregoing, the Ministry of Women Affairs have recorded some progress in some areas, including the following:

- (i) In the area of Child Development, the Ministry Launched the "One Million Girls March to School" Project towards promoting free and compulsory quality secondary education for all girls. This is one strategy aimed at achieving Goal 4 of the SDGs "Quality in Education," as well as addressing Goal 5 "Gender Equality" and Goal 10 "Reducing Inequality". The project is in collaboration with the Federal Ministry of Education and other partners.
- (ii) In the area of promoting Gender Equality and Women Empowerment, the Ministry created two departments to fast track policy planning across the various sectors and programmes. The departments are Gender Equality Department and Women Empowerment Department. Significant efforts have gone into the roll-out of joint programmes in Education, Agriculture, Health and Sports. To this end, the Gender in Agriculture Policy has been launched. The Policy is to ensure that the Federal Government Agricultural Revitalization and Economic diversification drive responds to Women's Agricultural needs. The Federal Executive Council has also approved the Federal Ministry of Environment "National Action Plan on Gender and Climate Change for Nigeria. The Ministry has also commenced the process of reviving all the existing structures including the Women Zonal Political Training Centres, the G-100 Women Lobby Group, the Nigeria Women Trust Fund amongst others.
- (iii) In the area of Economic Empowerment of Women, the Ministry is retooling many of the existing economic empowerment projects to make them more accessible to the beneficiaries.
- (iv) For the World Bank supported projects, 'Nigeria for Women Project (NFWP)' is project is making impact in 6 pilot States of Ogun (South West), Niger (North Central), Abia (South East), Taraba (North East), Kebbi (North West) and Edo (South South). The ministry intends to upscale to other States so that more women can benefit.
- (v) The National Centre for Women Development - the only parastatal of the Ministry of Women Affairs - continues to compliment the efforts of the Ministry in the empowerment of women and girls in Nigeria.

### **3.6.2 Education, Youth and Sports**

#### **3.6.2.1 Education**

Education is administered by the federal, state and local governments. The Federal Ministry of Education is responsible for overall policy formulation and ensuring quality control and is primarily involved with tertiary education.

According to Nigeria's National Policy on Education (2004), basic education covers nine years of formal (compulsory) schooling consisting of six years of elementary and three years of junior secondary education. Post-basic education includes three years of senior secondary education. At the tertiary level, the system consists of a university sector and a non-university sector. The latter is composed of polytechnics, colleges of education and monotechnics. The tertiary sector offers opportunities for undergraduate, graduate, vocational and technical education.



In order to actualize the development goals, the Federal Ministry of Education (FME) developed a blueprint for the Education Sector tagged “Education for change: A Ministerial Strategic Plan (2016-2022)”, which hinged on three priority and result areas, namely:

- i. Access which addresses Out-Of-School Children, Adult Literacy, Technical and Vocational Education and Training (TVET);
- ii. Quality which involves Basic education, Teacher education, Basic and Secondary Curriculum & Policy and Tertiary education; and
- iii. System strengthening which deals with Education data & Planning, ICT in Education & Library Service in education.

FME in 2015 initiated Annual Education Conference in collaboration with Development partners with two broad aims to provide an opportunity for communicating research evidence that will guide basic education policy and practice of the Federal and State Government; and to bring together Stakeholders in the Education and policy sector. In the first year, it focused on making evidence work for basic education and policy sector. In the second year, it focused on the critical role of teachers; third year, its theme was Achieving Inclusive Education through innovation strategies and the theme for 2018 was Education for self –Reliance: A system’s Approach to Education for the Achievement of Education 2030 Agenda which is Agenda for Sustainable Development aims to wipe out poverty by 2030.<sup>12</sup>

- **Early Childhood Education**

Nigeria had 81,562 public and private Early Childhood Care and Development (ECCDE) schools as at 2018. Gross enrolment into ECCDE was 7,159,262 out of an estimated 17.3 million of children aged 3-5 years. Over 79,000 (79.9 per cent) of these schools were privately-owned<sup>13</sup>. The Ministry fast-tracked the implementation of Pre-Primary Education and the establishment of Community Based Early Childcare Centre (CBECC) in 16 states to enhance their transition to the Basic Education. In addition, the Home- Grown School Feeding programme is also aimed at encouraging enrolment in early childhood education across the countries, but particularly in educational disadvantage states.

- **Basic Education**

Nigeria’s population growth has put pressure on the country’s resources and primary education infrastructure has not been spared. With an estimated population of 89.6 million children under 15 years of age accounting for 44.6 per cent of the 200.9 million population<sup>14</sup>, the burden on education has become overwhelming. According to UNICEF (2015), one in every five out-of-school children in the world was a Nigerian. Over 10.7 million children aged 6-11 years were out of school. Also, only 61.0 per cent of the total population of 6-11-year-olds (31.8 million) regularly attend primary school and only 35.6 per cent of children aged 3-5 years receive early childhood education in 2015.<sup>15</sup>

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<sup>12</sup> Source: FME- (MSP)

<sup>13</sup> UBEC

<sup>14</sup> UN Population Division

<sup>15</sup> UNICEF

As at 2018, Nigeria had 113,450 primary schools with 72,505 in rural areas and 40,945 in urban areas<sup>16</sup>. Gross enrolment in primary school among 40.8 million children aged 6-11 years was 27.8 million or 68.29 per cent while net enrolment was 24.3 million. In 2019, the total number of public primary schools were 66,550 while private primary schools was at 52, 98, giving a total of 119,532. In junior secondary school, the number of public was 13,581 and private was 18,986, bringing the total to 32,567; and the senior secondary school public was 9,824 and private was 14,245, bringing it to a total of 24,069.

At the lower secondary level, only 41.0 per cent of the total population of 12-14 (13.7 million) regularly attend schools while 75.0 per cent of this number complete junior secondary classes. There were 31,017 schools at this level of basic education with 16,281 (52.0 per cent of the total) in rural areas and 14,736 (48.0 per cent) in urban areas. As at 2018, gross and net enrolment rate among 14.8 million 12-14 year-olds was 6.8 million (46.12 per cent) and 4.8 million (32.99 per cent) respectively.

Most primary schools, especially in rural areas, lack water, electricity and toilet facilities. Despite political commitment to trying to reverse years of neglect in the education sector and a significant increase of the Federal funding, investment in basic education is still low compared to other Sub-Saharan African countries. The situation of education infrastructure is worsened in Nigeria because of the Boko Haram insurgency that started in 2009. By 2017 UNICEF estimated that 498 classrooms were destroyed while another 1,392 were damaged in the north-eastern region of the country, which has the worst education statistics. As a result, about 3 million children needed emergency education support in the region.

The Nigerian government aims at offering free basic education for all children. Yet, despite recent improvements in total enrolment in elementary schools, the basic education system remains underfunded; facilities are often poor, teachers inadequately trained, and participation rates are low by international standards. Recent efforts to reverse this trend include the following:

- i. FME has carried out advocacy and sensitization of stakeholders at various levels to see how Islamiyya and “Tsangaya” education can be made effective in curtailing the out-of-school syndrome through conversion and comprehensive integration into formal western education system.
- ii. In the aspect of Adult Literacy, the sector, through ‘Literacy-by-Radio Programmes’, ‘Train-the-Trainers/Facilitators’ manual and other learning materials, reviewed adult literacy pursuit in line with global best practices.
- iii. Operational manuals on the Girls for Girl (G4G) to support girls and encourage them to remain and complete Basic Education were developed and pilot-tested.
- iv. Monitoring and Data Collection, a strategy for Non-Formal Education (NFE) was developed, with pilot programmes on Rural Facilitators Scheme in 444 locations nation-wide established for the adult literacy.

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<sup>16</sup> UBEC

- **Senior Secondary Education**

Senior secondary education lasts three years and covers grades 10 through 12. In 2010, Nigeria had a total 7,104 secondary schools. There were 4.4 million students in senior secondary schools out of an estimated 14 -17year olds of population of 12.8 million in the 2015/16 academic year. Gross senior secondary school enrolment was 34.9 per cent. Close to 80 per cent of these students (3.5 million) at this level of education were enrolled in public senior secondary schools. There were also 88,065 students in Technical Colleges across the country<sup>17</sup>. As at 2019, the total number of public secondary school in Nigeria was 9,824 while private was 14,245 giving a total of 24,064. Efforts at improving success at this level of secondary education include:

- i. The Procuring and disbursement of instructional materials in 36 states and FCT
- ii. Introduction of open school system in six states: Kaduna, Kano, Kebbi, Niger, kebbi, Niger.
- iii. In January, 2020 the National Commission for Colleges of Education approved additional six Federal Colleges of Education opened in the following states Bauchi, Benue, Edo, Ebonyi, Osun and Sokoto who had no Federal colleges of Education before;
- iv. Additional six Federal Colleges of Science and Technology were added in 2019 bringing up the Federal Unity schools to 110.

- **Tertiary Education**

Nigeria had 129 universities (40 federal universities, 29 state universities and 40 private universities) registered by the National Universities Commission in 2013, a significant increase from 16 universities in 1980. For the first few decades of growth, higher education capacity building was primarily in the public sector, driven by the federal and state governments. More dramatic growth occurred beginning in the late 1990s, when the Nigerian government liberalized tertiary education by encouraging the establishment of private universities. As at March 2019 number of universities increased to 170 with federal, state, and private universities increasing to 43, 48 and 79 respectively.

In addition to universities, there are many polytechnics and colleges of education (COEs) under the purview of the National Board for Technical Education (NBTE) and National Commission for Colleges of Education (NCCE), the bodies tasked with overseeing technical/vocational education and training of professional teachers respectively. In 2017, the NBTE recognized 107 polytechnics, 27 monotchnics, and 220 colleges in various specific disciplines. By 2018, the number of polytechnics increase to 116, with 20, 48 and 48 polytechnics owned by the Federal Government, state governments and private entities respectively<sup>18</sup>. These institutions were established to train students for technical and mid-level employment. As at 2017, the number of approved Innovative Enterprise Institution (IEIs) were 140 while approved Vocational Enterprise Institutions (VEIs) were 77 in number.

It is common knowledge that the solution to the National unemployment problem and the bid to industrialise depend on technical education and this is in line with the United Nations proclamation of 2016- 2025 as the industrial decade for Africa, and in line with African Union's Continental Strategy for Technical and Vocational Education and Training. As part of its effort to attain the

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<sup>17</sup> FMoEduc MSP

<sup>18</sup> NBTE

Education 2030 Agenda, FME has successfully drawn up and commenced the implementation of a Sectoral Framework for Skills development under the Nigerian Skills Qualification Framework, (NSOF) which provides a system for the promotion, standardisation and the recognition of working skill irrespective of where or how the skill are acquired. Technical and vocational education and training (TVET), teachers' Assessment Guide / Instructional materials to aid the teaching of the new curriculum in technical and vocational education (TVE) for the attainment of sustainable Development Goals (SDGs) were developed. This aspect of education is mostly in the hands of the private sector. Thus;

- The sector has commenced the development of a policy on product innovation exhibition and commercialization that will create a window for advancing the outcomes of the National Annual student's skills competition, towards practical utilization and economic benefits,
- The sector, through NBTE has intervene in Adult and Non-formal Education by Formal Education Delivery in Nigeria, championed by all tiers of government and other stakeholders.

According to NCCE, there were 145 COEs in Nigeria in 2018, comprising 21, 50 and 74 COEs owned by the Federal Government, state governments and private entities<sup>19</sup>.

The number of undergraduate students in Nigerian universities was 1,274,261 during the 2012-13 academic session. This number comprised of 761,363 in federal universities, 438,641 in state universities and 74,257 in private universities. Although, 31.0 per cent of universities were privately-owned, only 5.8 per cent of the total number of undergraduates were in these universities. By 2019, 1,990,067 applied for admissions into 883 tertiary institutions through the Joint Admission and Matriculation Board (JAMB) examinations in 2019. Of this number, only 612,557 had provisional admissions, comprising 444,947 that gained admission for degree programmes, 69,810 for National Certificate of Education (NCE) and 97,800 for diplomas. The total number of candidates admitted provisionally into universities was 444,947, comprising 235,333 (53 per cent) into federal universities, 181,401 (40.7 per cent) into state universities and 28,213 (6.3 per cent) into private universities<sup>20</sup>. The Joint Admission and Matriculation Board has continued to record phenomenal growth in the conduct of the Unified Tertiary Matriculation Examination. The Board, through sensitization, encouraged both the private and public sectors to take up the establishment of modern computer-based test centre in the conduct of UTME. In 2017, out of a total of 642 CBT centres, 398 were privately-owned, while 244 were public. The Central Admission Processing System (CAP), which is an online platform, has been introduced for the processing of admission into Nigeria Tertiary Institutions. This system ensures transparency, accountability and proper monitoring of the admission process.

- **Access and Quality**

Education is key to the growth and socio-economic development of the nation. The overarching challenges to the attainment of educational goals have been the issues of access to and quality of education. Infrastructure is key determinant of access to and quality of education at all levels. There

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<sup>19</sup> NCCE

<sup>20</sup> JAMB

is empirical evidence that shows a strong link between education infrastructure and quality of education, including better instruction, learning outcomes and reduction in dropout rates. It is critical to the achievement of SDG 4 that focuses on access to quality education. Target 4.2 of SDG 4 specifically focused on addressing physical infrastructure needs to ensure safe and inclusive learning environment.

At the secondary school level, the performance of senior secondary students in the examination conducted by the regional examination body, the West African Examination Council (WAEC), provides a proxy indicator for quality of education. In 2016, the number of candidates that scored 5 credits and above including Mathematics and English language was 807,780 out of 1,543,974. This represented 52.3 per cent of the total number of candidates. The number and proportion of successful candidates reduced in 2018 to 756,726 out of 1,571,536 and 48.15 per cent respectively. The performance was almost similar in terms of entrance examination for tertiary institutions. In 2019, only 612,557 of the 1,157,977 that sat for the JAMB Unified Tertiary Matriculation Examination (UTME) scored above 140 marks and had Ordinary (secondary) Level credit passes in Mathematics and English Language. This represented 52.89 per cent of the total number of UTME candidates. Further analysis of the JAMB 2019 results shows that 52.9 per cent of applicants qualified for admission by virtue of having Ordinary level examination credits and scoring the JAMB cut off mark. However, only 27.4 per cent of the total number of qualified applicants were suitable for admission, i.e. they had UTME subject combinations and specific course deferential<sup>21</sup>.

At the tertiary level, global university ranking showed that Nigeria is relatively low in performance. Only three universities made it to the list of best 1,400 universities in the Times Higher Education World University Rankings in 2019, as against one university in 2018. Covenant University, University of Ibadan and University of Nsukka were ranked numbers 401–500, 601-800 and 1000+. This was low compared to China's 72 (best ranking of 22), South Africa's 9 universities (best ranking of 156), Brazil's 36 (best ranking of 251-300), and India's 49 (best ranking of 251-300)<sup>22</sup>.

Overall, access was even worse at the tertiary level. Nigeria's tertiary institutions generally have low-carrying capacity and most of the institutions are yet to meet the conditions for producing world class graduates required for 21<sup>st</sup> century economies. The ERGP prioritized education investments as part of the 'Investing in Our People' pillar. In line with this, government has implemented some strategic initiatives that aim to improve access to quality education vis-à-vis infrastructure development. These initiatives include:

- **Central Bank of Nigeria's Centre of Excellence project:** The CBN initiated the establishment of Centres of Excellence in Nigerian public universities. The project, which was estimated to cost over ₦63 billion (USD\$206 million) involves the construction and equipping of nine centres to increase access to post-graduate studies in Economics, Accounting, Banking and Finance, Business Administration and Statistics. Three Centres were completed at the end of 2019 in University of Ibadan, University of Nigeria, Nsukka and Ahmadu Bello University, Zaria. The remaining centres are expected to be established in

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<sup>21</sup> JAMB

<sup>22</sup> Times Higher Education University Rankings

the University of Lagos, University of Port Harcourt, University of Jos, Bayero University, Kano and University of Maiduguri.

- **Tertiary Education Fund (TETFund) High Impact Project:** TETFund had been one of the major sources of extra-budgetary financing for infrastructure development in Nigerian tertiary institutions, i.e. public universities, polytechnics and Colleges of Education (COEs). The Fund finances wide range of projects in 85 universities, 66 polytechnics and related institutions, and 67 COEs as at 2019. Between 2009 and 2013, TETFund earmarked ₦1,469 billion (\$4.8 billion), out of which ₦878 billion (42.8) was earmarked for infrastructure related projects. In 2016, ₦83.4 billion (\$273.5 million) was earmarked specifically for physical infrastructure, of which ₦42.8 billion (\$140.5 million) was disbursed to public universities, polytechnics and COEs. In addition, as at 2019 a total of ₦190.6 billion (\$624.9 million) was earmarked for the High Impact project, of which ₦136.3 billion (\$446.8 million) was released. 25,000,000.00 was released in 2019 by TETFund to all the Tertiary institutions in the country. The High Impact project aims to correct imbalances or deficiencies in critical areas in 99 public tertiary institutions<sup>23</sup>.
- **Universal Basic Education Commission (UBEC) interventions:** Universal Basic Education Matching Grants - The responsibility of providing quality education is shared among the three tiers of government: i.e. between the federal and sub-national (states and local) governments in Nigeria. The Federal Government introduced the Universal Basic Education Programme in 1999 and later established the Universal Basic Education Commission (UBEC) following the enactment of the Free Universal Basic Education Act 2004.
- **The Almajiri Project:** Nigeria was estimated to have over 9.5 million almajiris (itinerant Qur'anic school pupils) in 2010 mostly in the northern part of the country. The Federal Government introduced the National Framework for the Development and Integration of Almajiri Education into the Universal Basic Education Scheme. This framework provided guidelines for regulating almajiri schools to address challenges associated with the system, including itinerancy and begging. It also targeted the establishment of 400 almajiri model schools by 2015 and provision of support community owned Tsangaya/Islamiyyah and Tahfeez schools. By 2014, 152 almajiri model schools were completed.
- **UBEC Matching Grants:** To discharge its core responsibility of coordinating basic education development, UBEC provides matching grants to state and local governments for the purpose of basic education development. Between 2005 and September 2018, over ₦428.7 billion (USD\$1.4 billion) was disbursed to the 36 States and the FCT. In 2019, UBEC disbursed ₦208 billion (USD\$681.9 million) to sub-national governments. The sum of ₦36.3 billion (USD\$119.1 million) was released in 2018, down from ₦47.5 billion (USD\$156 million) in 2017<sup>24</sup>. 56,235,710,917.00 was released as matching grants for 2019 and 39,517,046,050.43 was unassessed.

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<sup>23</sup> TETFund

<sup>24</sup> UBEC

- **UBEC School-based Management Committee School Improvement Programme:** In 2019, Under this programme, UBEC targeted the construction and renovation of 5,010 classrooms across Nigeria. Over ~~₦~~2.76 billion (\$9.1 million) grant was given to 2,505 primary schools in the first phase of the programme.

### 3.6.2.2 Youth

The youths are the largest demographic group in Nigeria and have the potential to facilitate the rapid development of the country. They account for close to half of the labour force population of 80,291,894 in Q2 2020. The state of youth development is, however, problematic. Youth unemployment is high, particularly, amongst graduates from tertiary institutions. Higher population growth rate and Nigeria's fragile economic growth in the last quarters made it difficult to keep pace with the increase in unemployment rates. Unemployment has risen from 13.62 per cent in Q2 2017 to 22.7 per cent in Q2 2019 and 27.1 per cent by Q2 2020. In particular, 13,986,968 youths (34.9 per cent of the population in this age group) were unemployed in Q2 2020. The National Youth Service Corps (NYSC) provides graduate a unique opportunity for young graduates to have practical experience that prepares them for life and career development. Over 200,000 corps members are discharged yearly with less than 10.0 per cent of them gaining employment.

Government has intensified effort for job creation by setting up series of programmes such as N-Power as part of the ERGP the National Accelerated Youth Development Programme (NAYDEP) aims to create of over 15 million jobs (an average of 3.7 million jobs per annum) during the period 2017-2020. The N-Power programme was also introduced in 2016 to provide short term employment opportunities for 500,000 youths in the education, health and agriculture sectors. In spite of these efforts, the problem of youth unemployment remains challenging and requires a strong private sector support.

The job creation for the youths in Nigeria is characterized by the following challenges:

- peripheral involvement of the Ministry of Youth and Sports in core youth development programmes;
- dearth of 'employable' skills amongst the youth;
- inadequate data on youth and youth NGOs across the country; and
- Limited collaboration with relevant MDAs in addressing challenges faced by youth.

### 3.6.2.3 Sports

An efficient sports system will assist in nation-building through youth empowerment, wealth creation, employment generation, health and social mobilisation. The new strategic management activities for qualitative performance and mass participation are capacity building of coaches and administrators, early talent detection and development, policy direction on partnership and collaboration, sports facilities maintenance, a central national sports programmes system, and national sports performance monitoring and evaluation.

There are six national stadia at the federal level and 4 training centres, with three in a state of disrepair. The federal government has also 25 Grand Stands (Mini Stadia) across the country, which have been poorly funded. In addition, the state and local governments also have sports stadia and other sports facilities and some private training sports academies.

The National Sports Commission does not have a clear and integrated infrastructure plan except for some stated projects and programmes mentioned below.

- i. **New facilities.** Construction of 62 mini-sports centres in the various states, 15 grandstands and 3 football pitches.
- ii. **Zonal Offices for the supervision of the grassroots sport's development programme and assistance in the maintenance and security of the facilities.** The project stands at about 15 per cent completion.
- iii. **High Performance Centres.** These are specialised centres with advanced equipment managed by sports scientists for research aimed at achieving high performance. The high-performance centres projected to be constructed in each of the 12 zonal sports offices have only attained 15 per cent completion due to insufficient funds.
- iv. **Talent Development Centres.** The establishment of talent development centres in the six regions for the identification and development programme, along with required facilities, is still on the drawing board.
- v. **National Sports Information Centre.** The centre is still in the pipeline. It will provide a comprehensive database, statistics and general information to offer a reliable information network that will be optimally maintained through zonal offices; and
- vi. **Sports Medicine Centre (National Stadium, Abuja).** The centre is to foster research and development initiatives in high performance and develop standards for the analysis of high-performance athletes. The project stands at about 95 per cent completion.

Other related projects which have also reached advanced stages of completion include Athletes Hostel, Abuja (60 per cent completion); construction of NOCA offices (50 per cent completion) and maintenance of the five national stadia at Abuja, Lagos, Bauchi, Ibadan and Kaduna.

Under the Adopt-a-Sport initiative of the Federal Government, sporting facilities are expected to be upgraded and put to optimal use. The initiative is designed to enable the private sector to commit to rehabilitate and maintain sporting infrastructure and facilities across the country for an agreed period of time. Under this initiative, the following sporting infrastructure and facilities are expected to be completed, upgraded and optimally utilized:

- stadia (in Lagos, Ibadan, Kaduna and Abuja),
- 7 indoor halls,
- 3 training centers, and
- 25 mini stadia are expected



### 3.6.3 Environment, Tourism and Information

#### 3.6.3.1 Environment

As Nigeria embarks on a path of rapid economic growth, it also aims at being a nation with a healthy environment for sustainable socio-economic development.

The country is faced with a number of longstanding environmental challenges including land degradation and oil spillages, pollution, urban waste management, open defecation, desertification and erosion. Coupled with a poor response over the years to promptly address environmental degradation. These have led to negative indirect effects on other sectors of the economy and even direct threats to human existence and survival.

The Federal Government flagged off the remediation of contaminated sites in Ogoni Land in 2016. The government had through the Nigerian National Petroleum Corporation, and multi-national oil companies mobilised \$180 million for the exercise. The reformation of the Hydrocarbon Pollution and Remediation Project (HYPREP) under the Ministry of Environment is a positive development aimed at the sustainable clean-up of Ogoni land. Several initiatives had been taken to ensure the clean-up of Ogoni land by the Federal Government and UNEP, but with also these initiatives, there is the prolonged delay in the clean-up of the oil polluted region of Niger Delta. In Ogoni land, this is likely to trigger more deaths, as indicated by environmental experts. The clean-up exercise has not seen much progress since the process was initiated five years ago.

Some infrastructure developments have been planned over the years targeted at halting specific environmental hazards in Nigeria, such as:

- promotion of sustained reforestation programmes to increase forest cover from 6 per cent in 2008 to 12.0 per cent in 2015 and 18.0 per cent in 2020;
- management of the 3.2 million tons of garbage produced annually via landfill development and private investment; and,
- documenting and remedying past oil-impacted areas in the Niger Delta by the Nigeria Oil Spill Detection and Response Agency and the National Emergency Management Agency (NEMA).

Desertification and land degradation are major environmental challenges Nigeria is facing. To arrest the situation from deteriorating, Nigeria joined the Pan-African Great Green Wall (GWW) Initiative in 2013, which is being implemented in more than 20 countries across the world. The Initiative has the goal of restoring 100 million hectares of degraded land; sequester 250 million tons of carbon and create 10 million green jobs by 2030. In Nigeria, the initiative aims at, among others:

- Establishing Greenwall or shelterbelt from Kebbi State in Northwest to Borno State in Northeast, a distance of 1,500km and 15km across
- Provision of water for irrigation and domestic uses
- Development of Grazing resources
- Promotion of alternative and sustainable sources of energy
- Promotion of alternative means of livelihoods

By 2019, the GGW project had recorded the following achievements:

- Production of Five Million Assorted forest and fruit tree Seedlings
- Establishment of 415km shelterbelt
- Establishment of 135ha community woodlots
- Establishment of 235ha community orchards
- Establishment of 92 community tree nurseries

The United Nations Convention to Combat Desertification reported that Nigeria restores 5 million hectares of degraded land.

### **3.6.3.2 Tourism**

This sub-sector is currently hindered by infrastructural inadequacies, inadequate funding, weak product packaging and marketing approaches, security and safety issues, as well as neglect and underdevelopment of tourism assets. Others include the existence of an underdeveloped hospitality industry and low capacity building, poor data collection for planning purposes and poor inter-agency collaboration on tourism statistics.

The World Travel and Tourism Council released an analytical report on Nigeria's tourism that travel and tourism generated 838, 500 jobs directly in 2011 (1.4 per cent total employment), and was forecasted to grow by seven per cent in 2012 to 897, 500. This includes employment by hotels, travel agents, airlines, and other passenger services excluding commuter services). It also included, for example, the activities of the restaurants and leisure industries directly supported by tourists.

Despite the impressive potential of Nigeria's tourism as highlighted by the WTTC report, Nigeria has failed to evolve into a prominent tourism destination in Africa, let alone in the world. Yet, the country is enormously blessed with several resource-based tourist attractions, including some United Nations World Heritage Sites. Nigeria officially became a member of the United Nations World Tourism Organisation in 1975.

Over the years, the need for conservation caused the Federal Government to create some national parks and reserves. To date, Nigeria has eight National Parks and some State Governments nature reserves. But these parks are not adequately funded, neither are they strategically managed to attract spending tourists. Because these parks were set up for conservation purposes only, they have not added any value to tourism development. To this end, there may be a need for the Ministry of Tourism to co-manage the parks as they are currently under the Federal Ministry of Environment.

Cultural tourism, which is the most significant brand of Nigeria's tourism, is not strategically marketed to attract international tourists. The bane of tourism development in Nigeria has been the lack of concerted marketing strategy for both domestic and inbound tourism. Consequently, the industry's growth has been at a snail's speed. Notwithstanding, there have been a few successful tourist events such as the Carnival Calabar, tagged "Africa's Biggest Street Party" which have gained international recognition and tourist patronage.

### 3.6.3.3 Information

Information is a key instrument for transforming Nigeria into a critical player in the global political economy; the sector is a powerful tool for development in every human endeavour. Full participation of all citizens in the art of good governance is founded on the effective flow of information and the resultant dialogue between the government and the governed.

The information sector is thus vital to national developmental and it is in this respect that Government has deemed it necessary to provide:

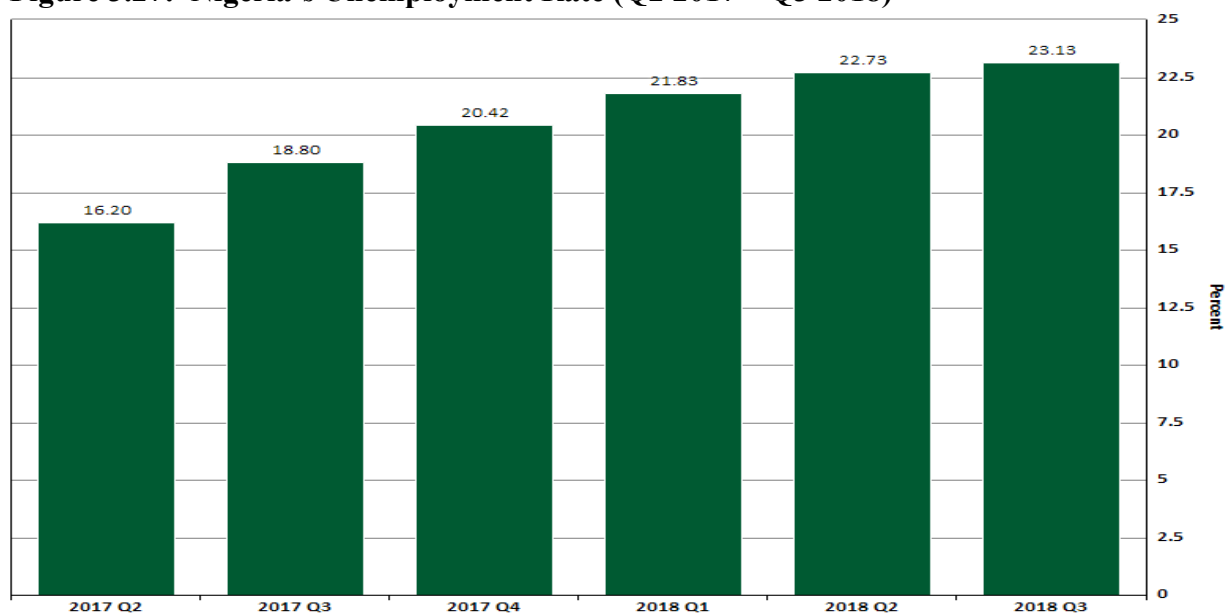
- an information culture that provides the public with easy access to official information through the Freedom of Information Act;
- a regulatory/political environment where government is tolerant of critical media reports and where journalists feel safe to report and analyse information;
- high standards of quality, professionalism and journalistic ethics in media and communication practices;
- easy access to funding for training and the provision of media equipment; and an established community
- media policy to relay information to the 90,000 communities in Nigeria

Digital broadcasting is gradually gaining adoption as television and radio stations have been mandated by the Nigerian Broadcasting Commission to go digital by December 2017. The initial deadline of June 15, 2015 could not be met. Nigeria will need about USD1.4 billion to purchase about 32 million Set-Top-Boxes (STBs) estimated to be adequate for national coverage, in order to achieve 95.0 per cent access to free digital television content across the country.

### 3.6.4 Labour and Productivity

Labour remains a Nigerian national asset and a critical development factor. However, statistics show that unemployment is gravitating towards a crisis. According to the National Bureau of Statistics (NBS), Nigeria's unemployment rate maintained a persistent increase from 16.2 per cent in Q2 2017 to 23.1 per cent by Q3 2018 (Figure 3.27). In 2019, the Nigerian states of Sokoto and Taraba were reported to have the largest percentage of people living below the poverty line. The lowest poverty rates were recorded in the South and South-Western states. In Lagos, this figure equalled to 4.5 percent, the lowest rate in Nigeria. An individual is considered poor in Nigeria when has less than 137.4 thousand Nigerian Naira (roughly 361 U.S. dollars) per year. In total, 40.1 percent of population in Nigeria lived in poverty.

**Figure 3.27: Nigeria’s Unemployment Rate (Q2 2017 – Q3 2018)**



Source: NBS (2017 – 2018).

Other available indicators of the Nigerian labour market include the following:

- The number of persons in the economically active or working age population (15 – 64 years of age) in Q2, 2020 was estimated at 116,871,186. This is 1.2% higher than the figure recorded in Q3, 2018, which was 115,492,969.
- The number of persons in the labour force (i.e. people within ages 15 -64, who are able and willing to work) was estimated to be 80,291,894. This was 11.3% less than the number of persons in Q3, 2018. Of this number, those within the age bracket of 25-34 were highest, with 23,328,460 or 29.1% of the labour force.
- The total number of people in employment (i.e. people with jobs) during the reference period was 58,527,276. Of this number, 35,585,274 were full-time employed (i.e. worked 40+ hours per week), while 22,942,003 were under-employed (i.e. working between 20-29 hours per week). This figure is 15.8% less than the people in employment in Q3, 2020.
- For the period under review, Q2, 2020, the unemployment rate among young people (15-34years) was 34.9%, up from 29.7%, while the rate of underemployment for the same age group rose to 28.2% from 25.7% in Q3, 2018. These rates were the highest when compared to other age groupings.

Several infrastructure-related measures are required to improve the current labour situation in Nigeria. These include:

- establishment of Labour Desk officers in all the MDAs to capture data on employment and vacancies;
- establishment of Nigerian Labour Exchange in all the states, for unemployed youths to access job vacancies/opportunities on the internet;
- Provision of a social security fund for vulnerable groups and unemployed youths;

- establishment of more and better coordinated skill acquisition centres;
- revival of ailing industries to create more job opportunities through improved infrastructure (e.g., power, roads, markets); and
- Facilitation of access to finance for MSMEs.

### 3.6.5 Aspirations and Targets for Social Infrastructure

Specific targets have been set for the Social Infrastructure sector by 2043. These objectives are divided between the four sub-groups as follows:

#### 3.6.5.1 Health, Women Affairs and Social Development

- Provide adequate infrastructure including laboratory and logistics support for ambulatory care services
- Develop a national/state strategic healthcare infrastructure plan
- Develop and review of policies, laws and guidelines on health infrastructure, equipment maintenance and management
- Advocate for dedicated funds for health infrastructure development and management in Nigeria
- Establish a PPP platform on health infrastructure procurement, service provision and maintenance (e.g. build and maintain, outsource, contract, concession etc.)
- Revitalize, upgrade and expand centres of excellence in the State
- Establish/strengthen logistics support including transportation and communication systems to aid referral
- Provide sustainable influx of input for production of drugs, vaccines, equipment, among others;
- Focus on making rural and community healthcare services adequate and improving rural and community health
- Increase use of ICT
- Boost capacity of healthcare response to the COVID-19 pandemic and other infectious diseases;
- Ensure access of every Nigerian to qualitative health services based on the prioritization of primary health care (building 15, 000 PHCs);
- Boost local research and development efforts aimed at the production of medical and pharmaceutical resources;
- Create a single national pool of resources for the purchasing of a defined package of health services to foster broader risk sharing and reduce duplication of effort;
- Expand universal health insurance to cover the poorest and most vulnerable by linking the National Health Insurance Scheme to the National Social Register;
- Accelerate implementation of the Basic Health Care Provision Fund (BHCPF) to achieve at least a 65.0 per cent increase in the share of the population covered by primary healthcare by 2023;
- Ensure access to power for health clinics through stand-alone systems or micro-grids (where necessary);
- Establish a favourable tariff regime to support domestic pharmaceutical companies and allied Manufacturers;
- Support domestic pharmaceutical companies to meet WHO prequalification criteria, and overcome a major challenge to production for export;

- Mobilize private sector resources to contribute to various health funds and services such as the National Emergency Health Fund or Basic Healthcare Provision Fund (BHCPF), health infrastructure development and granting incentives like tax exemptions; and
- Support local research and development efforts aimed at production of medical and pharmaceutical resources including vaccines and consumables.

In the Health sub-sector, targets set will ensure a significant increase in access to primary healthcare from 33.0 per cent in 2013 to 61.0 per cent in 2043 by:

- Increasing the number of primary healthcare clinics per LGA from 28 currently to 40 by 2023, and subsequently to 55 by 2043;
- Increasing the total number of hospital beds per 100,000 people from three currently to 200 by 2023, and to 450 by 2043.

### **3.6.5.2 Education, Youth and Sports**

- Provide equal access to education and sports development at all levels
  - Develop appropriate skills – mental, physical and social abilities and competencies – in citizens
  - Promote vocational and technical education
  - Use education and sports as catalysts for national consciousness and unity
- Provide a globally competitive education system.

In Education Sector, development of infrastructure to support attainment of targets is the most prominent, with projects planned to:

- Neutralise the 250,000 Classroom deficit by 2023 and create an additional 250,000 ECCDE and standard classrooms by 2043.
- Scope of the targets also includes increasing the number of federal universities, polytechnics and colleges of education by up to 300.0 per cent in the next 23 years.

### **3.6.5.3 Environment, Tourism and Information**

- Develop an effective pollution and waste management system in 36 states and the Federal Capital Territory with emphasis on “waste to wealth”
- Implement proper environmental control measures to check degradation
- Improve governance infrastructure to facilitate performance evaluation for the reward of excellence and transparency
- Develop world class tourism infrastructure to position Nigeria as a tourism destination;
- Establish effective private sector-driven tourism infrastructure by 2023
- Ensure citizens’ participation in governance, information dissemination and coverage.

### **3.6.5.4 Labour and Productivity**

- Promote employment – intensive economic growth
- Enhance employment generation by growing an entrepreneurial economy

- Transform the informal economy to further boost productive employment Develop a national policy on social security and safety nets
- Set productivity standards and a measurement system.
- Several initiatives are planned to achieve these ambitious targets within the various broad groups.

### 3.6.6 Private Sector Expectations and Priorities

#### 3.6.6.1 Health

With a functional financial resource pooling mechanism in place to cover the healthcare of citizens, the private sector support will be brought to bear on the effort to transform public secondary and tertiary health institutions into self-administering and self-sustaining enterprises with the capacity to manufacture basic commodities and consumables like intravenous fluids, laundry soap, surgical gloves, bed sheets and pillowcases, nurses and doctors' uniforms, etc.

Steps are being taken to

- Expand the National Health Insurance Scheme to cover all citizens;
- Ensure protection of health workers on the front lines of addressing COVID-19 threats and other infectious diseases;
- Establish a credible health insurance system by empowering the National Health Insurance Scheme as payment security for users, thus meeting buy-side demand.
- Ensure reduction of capital flight in the sub-sector through medical tourism by increasing investment in the sector, establishing world class hospitals and diagnostic centres;
- Develop strategies to stop the 'brain drain' of qualified healthcare personnel;
- Create regional centres of excellence related to common specialty fields; and
- Consider a private financing initiative as in the UK, where hospital infrastructure is built by the private sector under a concession and the concessionaire is paid a unitary charge for managing the hospital and other ancillary services (catering, laundry, etc.).

To this end, the Nigeria Social Insurance Trust Fund (NSITF) shall provide insurance coverage for health workers across all tiers of government as well as in the private sector.

#### 3.6.6.2 Education

- Build targeted research institutes with linkages to industry
- Implement the 10-year Strategic Plan which calls for greater private sector and industry participation in curriculum design at all levels as well as commitment to PPPs
- Initiate a coherent policy focused on enhancing technical education and a conscious effort to develop technical and vocational education to support planned infrastructure expansion.
- To enable increased private sector participation in the sector, the following strategies were identified.
- Concession tertiary hospitals (not to include medical colleges, e.g., Lagos University Teaching Hospital) under a PPP and introduce management contracts where necessary
- Concession all failed/abandoned federal and state hospital projects deemed attractive by the private sector

- Provide basic educational facilities in line with United Nations Sustainable Development Goals (SDGs)
- Ensure adequate electricity supply in schools
- Improve broadband, including rural broadband access
- Create centres of excellence in one university, polytechnic, and college of education in each of the six regions
- Build targeted research institutes linked to industry.

### 3.6.7 Required Infrastructure Investments

In order to achieve the goals and objectives mentioned in the previous section, Nigeria needs to increase its infrastructure spend in this sector. Using estimates combined with infrastructure requirements associated with identified development targets, the Federal Government alone is expected to commit at least N180 billion (or about USD47.4 million) per annum to social sector development projects in order to achieve the specific sub-sector targets. The biggest spend will be in Education and Healthcare infrastructure financing.

In particular, Nigeria will need an average investment of USD1.28 billion on social infrastructure development over the next five years (2020-2024). In view of the challenging public resources, it is expected that the private sector will account for greater percentage of the investment needs (65 per cent) to close the demand gap.

## 3.7 Vital Registration and Security

### 3.7.1 Current State of Infrastructure

#### 3.7.1.1 Vital Registration

Civil Registration and Vital Statistics (CRVS) Systems are playing increasing roles in national and global data infrastructure, facilitating the achievement of key developmental goals. The performance of CRVS systems in many developing countries including Nigeria is sub-optimal and information on their structure and operations scanty. Civil Registration and Vital Statistics is the continuous, permanent, compulsory, and universal recording by registration of the occurrence and characteristics of vital events pertaining to the population as provided through decrees or regulation following the legal requirements of each country. Vital events considered in the registration system include live birth, death, stillbirth, marriage, divorce, annulment of marriage, judicial separation of marriage, adoption, legitimization, and recognition. Birth, death, marriage, and divorce are priority vital events to be registered and statistics produced on a continuous and permanent basis by countries. An effective system of vital registration therefore must have fundamental characteristics such as continuity, permanence, and compulsion so as to detect and record all births, deaths, etc. regardless of the time or place, such an event takes place.

Within governments, input to the civil registration systems is made by few ministries or departments, including the National Population Commission, Ministry of Health, Ministry of Interior, National Identity Management Commission (NIIMC), and National Bureau of Statistics (NBS). Governments



at various levels rely on vital registration information for calculation and production of timely and accurate population estimates, which contributes to policy-making and long-term national planning. In other words, the accuracy of estimates in the NIIMP largely depends on the accuracy of estimates of births, deaths, marriages, and population projections.

Record available on “RapidSMSNigeria”, an online portal designed by UNICEF and implemented by National Population Commission (NPC) with support from UNICEF, showed improvement in current vital registration coverage.

**Table 3.24: Vital registration Coverage**

Coverage	Status
Birth Registration	43%
Death Registration	10%
Still Birth	1%
Marriages	Yet to commence
Divorces	Yet to commence
Internal Migration	Baseline survey conducted in 2010
International migration	Last published in 2004

Source: NIMC and UNICEF

The implementation of “RapidSMS” has the potential to expand coverage of vital registration towards the goal of universal coverage. The platform, implemented by NPC captures real-time birth and death registration addresses centre-by-centre birth registration disparities and facilitates prompt and appropriate action. This initiative covers 36 states plus FCT, across 774 LGAs. As at September 2020, about 1,246,279 under-1 births, 2,078,433 under-5 and 920,470 above-5 births have been registered with “rapid SMS”. Deaths reported on the platform as at September 2020 showed 64.0 per cent were male and 36.0 per cent female.

However, the current coverage is still below the gold standard of universal coverage. Although ongoing automation and digitalization of the system make the goal achievable. The achievement of 100.0 per cent coverage of civil registration by 2043 should follow the following principles:

- Total coverage – a complete vital registration coverage should cover all vital events happening in every state, local government, and community, and taking place in every demographic group
- Continuous collection and compilation of vital statistics should reflect short term movements, periodic fluctuation, and longer-term movements. This is easily achieved if established routine of reporting is instituted thereby leading to the availability of data on a monthly, quarterly, and annual basis.

Privacy of data should be maintained while data should be widely made available for legitimate uses.

**Table 3.25: Priority Projects on Vital Registration**

S/N	Activity	Duration
1.	Automation and digitalization of the Civil Registration and Vital Statistics processes	2020 - 2023
3.	- GIS final editing, cleaning and processing of all demarcated 546 LGAs EA Maps.	February 2021 – July 2021
4.	The completion of the on – going Enumeration Area Demarcation Exercise in the 774 LGAs of the Federation.	January 2021
7.	Production and compilation of thematic maps, charts and related datasets based on specific stakeholder needs on demand. Maintenance and continuous updating of the Geographic frame to reflect the realities on ground.	August 2022 – January 2023
8.	Conduct of National Demographic Surveys <ul style="list-style-type: none"> <li>- Nigeria Education Data Survey (NEDS)</li> <li>- National Malaria Indicator Survey (NMIS)</li> <li>- Nigeria Demographic and Health Survey (NDHS)</li> </ul>	2020 - 2023
9.	Development of Census database Stakeholders conference to present 2022 Census instrument Census Management training Training of staff on data collection and interviewing techniques at IPC, Washington Design of data collection Test of new methodology First pretest of Census instruments Second pretest of census instruments	2020       2020
11.	Field work for main Census Development of Census data base Development of Administrative and technical report for Census Post Enumeration Survey (PES)	2022
12.	Dissemination of Population Census data Archiving and Documentation of Census information.	2023

Source: NIMC.

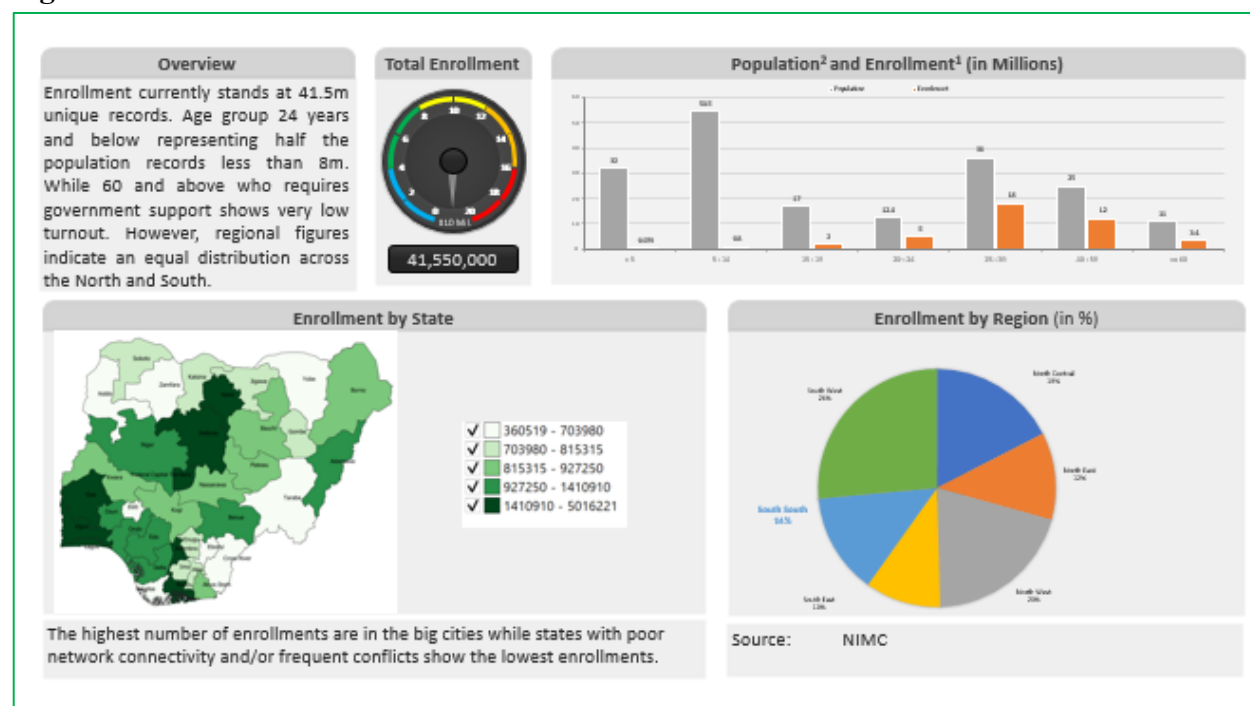
**TABLE 3.26: VITAL REGISTRATION SECTOR TARGETS**

	2020	2023	2043
Registration Offices (National Population Commission)	3,810	7,000	10,000
Complete coverage of birth registration	43%	70%	100%
Complete coverage of death registration	10%	60%	100%

Source: Vital Registration TWG.

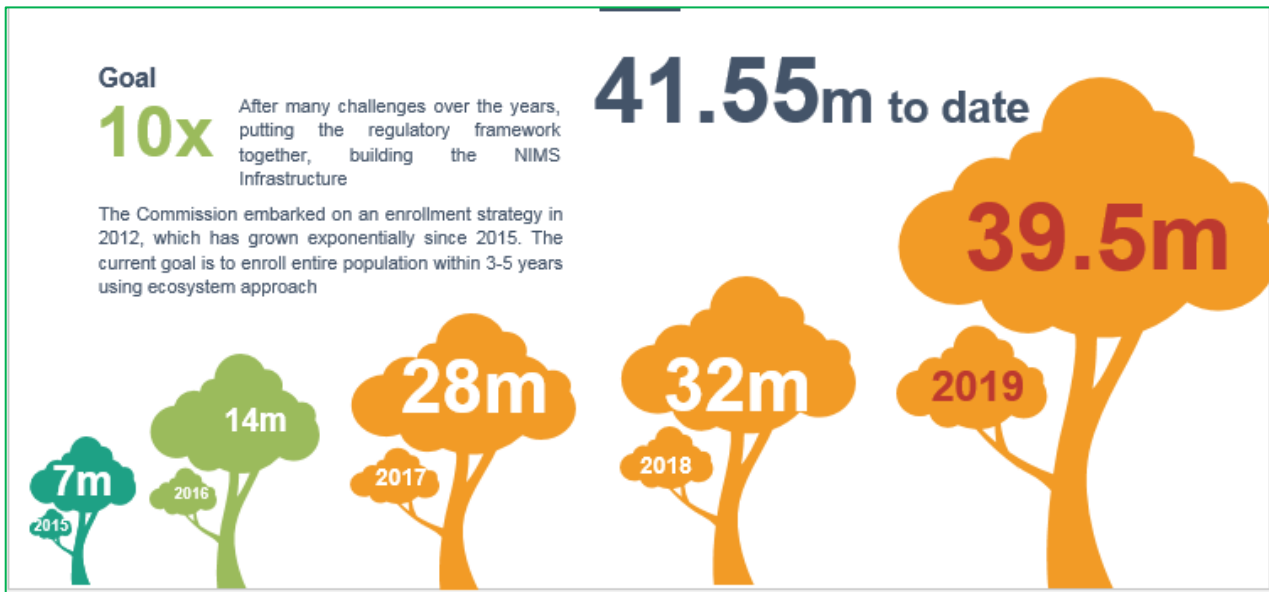
The National Identity Management Commission (NIMC) in its efforts to meet up with the enrollment of the entire population in the country and linking the Identity registration with other relevant agencies introduced the Ecosystem. Figures 3.28 to 3.32 show efforts of NIMC on improving the registration coverage of citizens and non-citizens as well as connectivity of such identity with other relevant agencies:

**Figure 3.28 Enrollment Dashboard as at June 2020**



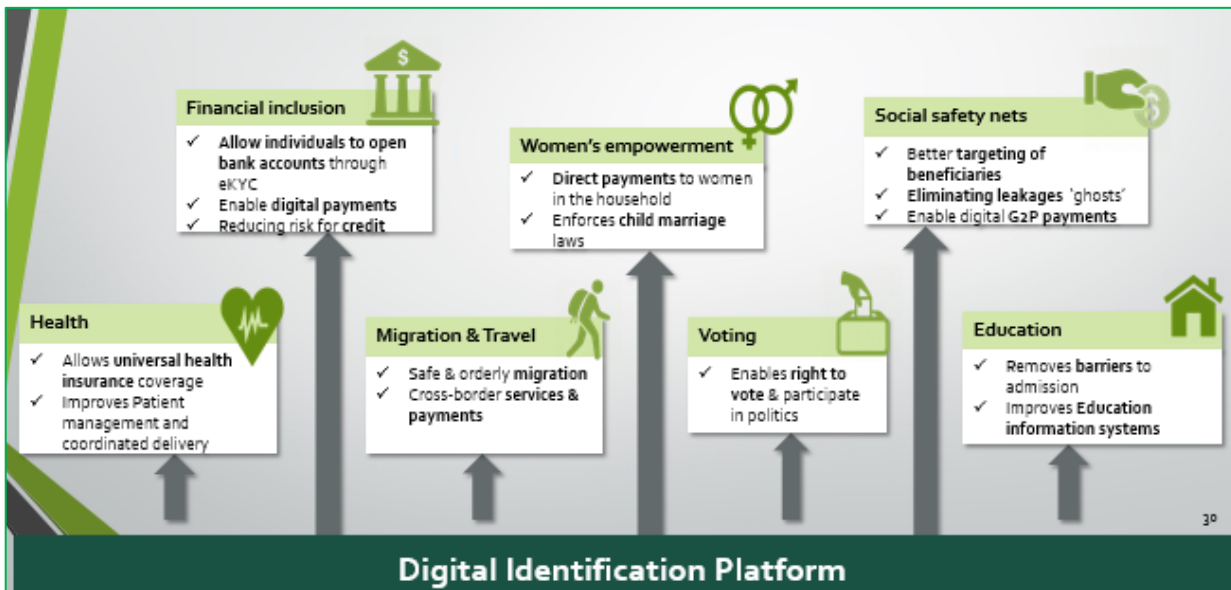
Source: NIMC.

**Figure: 3.29 Digital National Identity Data Growth (2015-2019)**



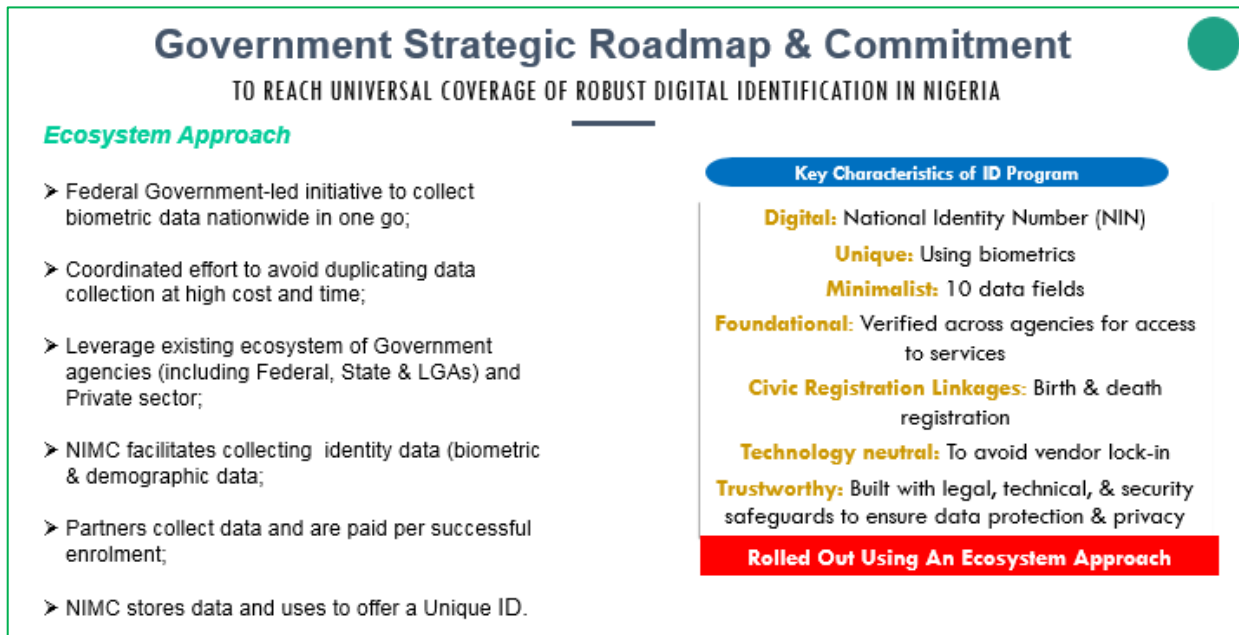
Source: NIMC.

**Figure 3.30 Benefits of National Identity Card Programme**



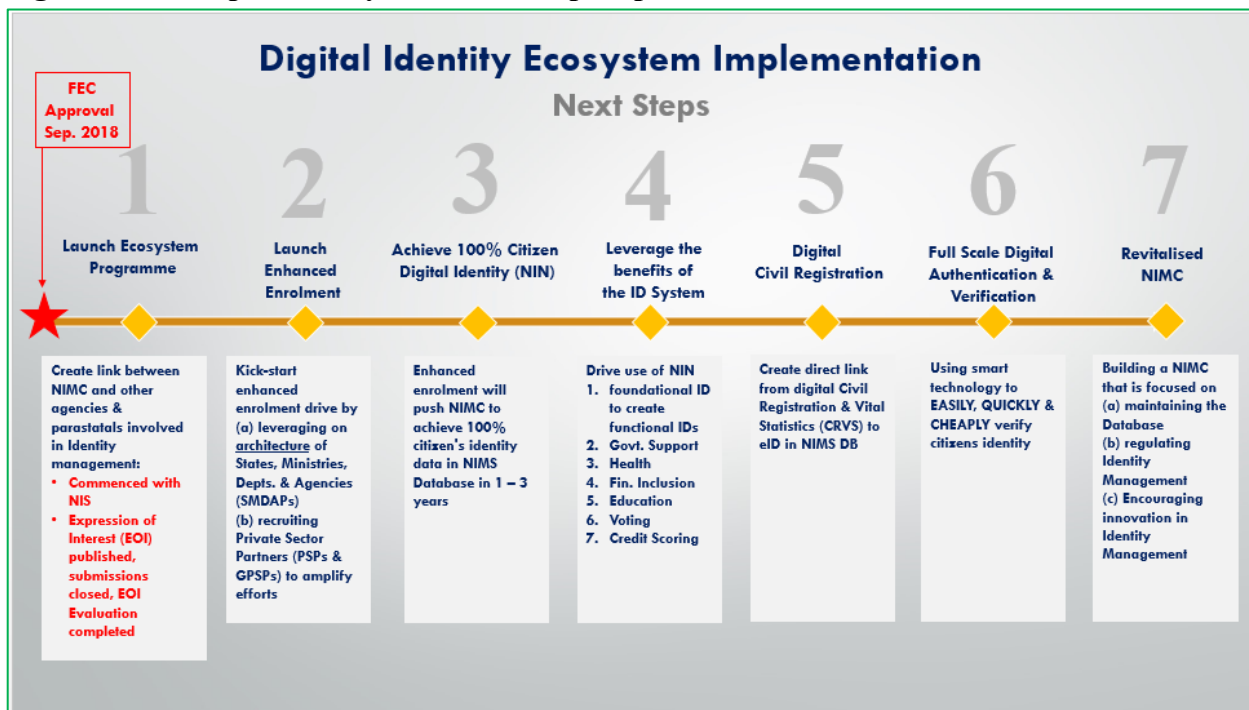
Source: NIMC.

**Figure 3.31: Ecosystem Roadmap Program**



Source: NIMC.

**Figure 3.32: Steps to Ecosystem Roadmap Implementation**



Source: NIMC.

### 3.7.1.2 Security

Twelve Agencies were considered to fall under the security sub-sector. These include the Nigerian Police Force (NPF), Nigerian Correctional Service (NCS), Federal Fire Service (FFS), Nigerian Army, Nigerian Navy, Nigerian Air force, Federal Road Safety Commission (FRSC), Defence Industry Corporation of Nigeria (DICON), Nigeria Immigration Service (NIS), Nigeria Security and

Civil Defence Corps (NSCDC), Nigerian Communication Satellite (NigComSat) and Nigerian Space Research and Development Agency (NASRDA).

In this document and for simplification, the 12 agencies have been categorized into two - the Military and Civilian Defence. Military covers the operations of the Armed forces (Army, Airforce and Navy) while civilian defence includes operations of the police and other para-military agencies (Nigeria Security and Civil Defence, Nigeria Immigration Service, Federal Fire Service, and Nigeria Correctional Service, etc).

Nigeria is grappling with new and more complex security challenges. Most of the contemporary security threats are internal and are mainly unconventional in nature. These threats include:

- **Insurgency** characterized by terrorism and kidnapping. The activities of insurgents in the North East has had significant toll on the economy and society in the region and beyond. It caused loss of lives, serious destruction on infrastructure and disruption of livelihoods.
- **Organized crime** such as smuggling, oil theft, illegal bunkering, pipeline vandalism, drugs trafficking, arms trafficking, including heavy calibre weapons, human trafficking and internet – cyber related crimes
- **Cross border banditry and ethno-religious conflicts** which have significantly spread among various parts of the country with the North-Western parts heavily affected by banditry and the North-Central having higher cases of violent communal conflicts.

The Nigerian government has continued to prioritize security by constantly upgrading its military and civil defence infrastructure. Table 3.27 shows the capital budgetary allocations to security for the past few years. The data indicates that on the aggregate, government allocation to security sectors has generally increased over the years under review (except in 2015 and 2019 which witnessed slight reductions). The nature of contemporary security challenges and the magnitude of its impact on the economy and society would necessitate more funding and the adoption of new ways of responding. Therefore, addressing the current and future security challenges require upgrading and expanding existing infrastructure that enables effective operations of various security formations and related organizations.

**Table 3.27: Capital Budget allocation to Security Agencies (\*Billion)**

Sub-sector	2013	2014	2015	2016	2017	2018	2019
Nigerian Army	8.77	4.89	5.75	19.79	20.92	19.62	19.62
Nigerian Navy	15.03	8.99	8.65	25.65	26.45	27.45	27.15
Nigerian Airforce	14.24	7.26	7.63	24.46	29.45	44.65	45.05
Police	10.25	3.44	17.8	16.12	16.12	25.19	22.06
NSA	22	28.52	11.3	15.23	25.31	46.66	33.87
Min. of Interior	9.46	6.95	2.89	45.61	47.15	49.9	31.61
DICON	1.7	0.8	0.82	3.83	3.58	3.73	3.23
<b>Total</b>	<b>81.45</b>	<b>60.85</b>	<b>54.84</b>	<b>150.69</b>	<b>168.98</b>	<b>217.2</b>	<b>182.59</b>

**Source:** Budget Office of the Federation.

## **a. Civilian Defence**

### ***i. Nigeria Correctional Service***

The total population capacity for the Nigeria Correctional Service (NCS) is 50,153 but NCS has historically been overcrowded. In 2016, the Prison population in Nigeria was 63,142 and by 2018 the population increased to 71,522. This overcrowding in the correctional centres brought about the need for construction of more cell blocks and the releasing of inmates through judiciary processes to decongest the existing centres. New satellite correctional facilities were constructed in 2016, 2017 and 2018, making the total number of correctional facilities in the country to increase to 240 as at 2018. Also, there are ongoing 3,000 correctional model facilities in Kano, Karshi-Abuja and Bori.

Overall, some of the major challenges facing the Nigerian Correctional Service include:

- Congestion, especially among those awaiting trial in Urban Areas Inadequate manpower to effectively manage the Correctional Centres;
- Weak and inadequate structures;
- Poor logistic fleets to meet the courts' needs of ATPs;
- Inadequate and poorly equip correctional facilities for identification, treatment, and reintegration of convicted persons to become law-abiding citizens on discharge inmates upkeep;
- The slow judicial process in deciding cases of ATPs Insufficient budgetary allocation.

### ***ii. Federal Fire Service***

The Federal Fire Service is responsible for the rescue, fire prevention and migration, firefighting, paramedic and information services. The main goal of the Fire Service is to minimize fire and other emergency incidents resulting in loss of life and property. The infrastructural stock of the Agency consists of 328 Fire Stations and fire training schools. Out of which, 10 fire stations and two training schools are owned by the Federal Government while the remaining are owned by the various State Governments and the FCT. The average emergency response time for buildings within 18 square kilometres of a fire station is 35 minutes. Nigeria has 8,000 firemen, of whom only 1,200 are trained according to standard requirements. The ratio of fire-fighters to the population in Nigeria is 1:20000, while the internationally recommended ratio is 1:1000. The Service is constructing Metropolitan fire station spread across the six geo-political zones of the country and the benefiting States are Benue, Bauchi, Abeokuta, Enugu, Akwa-Ibom and the FCT.

### ***iii. Nigeria Immigration Service***

The key mandate of this Agency is to establish a technology platform to address the operational challenges of modern migration, relevant to the world security order and responsive to global migration trends. An opportunity exists for improving the level of monitoring at the borders by installing CCTV cameras.

#### ***iv. Nigerian Security and Civil Defence Corps (NSCDC)***

NSCDC is a para-military Agency of the Federal government commissioned to provide measures against threats, attacks and disasters against Nigeria and its citizenry. The NSCDC is responsible for:

- Protection of critical infrastructure and national assets;
- Licensing, supervision and monitoring the operations of private guard companies in the country; and
- Providing rescue and emergency aid during natural or man-made disaster.

The Agency's current infrastructure stock consists of three State Commands, ten (10) Divisional offices, 12 dormitories, three training colleges, 30 classrooms, three commandants' residences and two shooting ranges. The main challenges facing the NSCDC include:

- Shortage of manpower;
- Inadequate funding; and
- Weak synergies and collaboration with other security agencies.

#### ***v. Defence Industries Corporation of Nigeria (DICON)***

The main mandate of the Agency is to produce arms, ammunition, weapons and machinery to meet Nigeria's defence needs. However, the Agency is faced with the challenge of unavailability of production plants and simulation centers. DICON's current infrastructural stock includes, nine factories and workshops, one arms production line and two laboratories.

#### ***vi. Nigeria Communication Satellite (NigComSat)***

The key mandate of this Agency is to deploy communication satellite resources for maritime, aviation defence and other security needs of the nation. The opportunities for NigComSat include:

- Capacity to provide the military and other security agencies with a communications service and bandwidth requirements for all platforms;
- Deploying Beyond Line-of-Site (BLOS) connectivity for Unmanned Aerial Vehicles (UAVs) in Nigeria; and
- Becoming the cornerstone for universal access, bedrock for ICT development, backbone of social, political and economic re-engineering in Nigeria and Africa in general.

#### ***vii. Nigeria Police Force***

The vision of the Police Force is to make Nigeria safer and more secure for economic growth and development and to create a safe and secure environment for everyone living in Nigeria. Substantial expenditure has been made on infrastructure and training programmes for the Police Force since 2013 to date. A total of N6.5 billion was budgeted from 2014 to 2017 for the construction of new police stations. Within this period, 318 new police stations were constructed which brought the total number Police stations to 1,598 (Table 3.28). However, additional 145 police stations are required to meet the short-term target of 1,743 stations by the year 2018.



**Table: 3.28: Current State of the Nigeria Police Force.**

No. of Area Commands	No. of Divisions	No. of Police Stations	No. of Police Posts	No. of Village Posts
127	1,040	1,598	2,631	3,920

Source: Nigeria Police

Despite increase in budgetary provision and infrastructure, the Police Force is still grappling with the following challenges:

- Lack of trust and support by the Public
- Weak Investigation Infrastructures
- Creation of multiple security institutions with same mandate
- Lack of effective ICT Infrastructure
- Old and dilapidated Police Stations, Buildings and Offices
- Lack of Modern Residential Accommodation
- Lack of Forensic laboratories/fingerprint database
- Inadequate training infrastructure
- Insufficient Police Buildings, Housing and Police Stations

#### **viii. Federal Road Safety Commission (FRSC)**

The FRSC is a Government Agency with statutory responsibility for road safety administration in Nigeria. The FRSC currently have, among others, 203 Unit commands, 29 outposts, 211 driver's license centres and 12 license plate production plants.

There exists a strong nexus between vital registration and security. Thus, national security must become imperative if proper fields of statistics are captured and unique to each person for the purpose of facilitating health care, access to education, procurement of international passport, driver's license and vehicle number plates for crime detection and prompt apprehension of criminals. Other opportunities that exist for the FRSC include:

- An electronic national driver's license, vehicle, and offenders register hosting over 10 million records managed by Federal Road Safety Corps officials which can be integrated into a national database. This should be accessible to all the security agencies.
- Twelve number plate production plants for the production of number plates as well as driver's license workstations infrastructure in each state of the federation for production of driver's license. It is important to build on this to reduce the waiting period of subscribers.
- An ultra-modern communication centre including a 3-digit emergency number, 122 that facilitates 15 minutes' response time to road traffic crash victims
- Emergency ambulances and road side clinics located at crash-prone areas for prompt response and first aid medical treatment to road traffic crash victims;

- Corporate strategic road map with the vision of eradicating road traffic crashes in Nigeria: aimed at transiting Federal Road Safety Corps from an enforcement Agency to a regulatory Agency and manager of federal highways;
- Production of National Road Safety Strategy envisioned to address consistent road crashes and zero death;

Generally, the FRSC is faced with the following challenges:

- lack of electronic monitoring facilities on the highway
- insufficient collaboration among various highway security agencies
- Inadequate capacity by highway security agencies
- Unreliable identity check mechanism
- Lack of ICT security gadgets, and
- Inadequate equipment to cover the entire country

## b. Military Defence

### i. Nigerian Army

The Nigerian Armed Forces currently have 200,000 troops and over 300,000 para military personnel on active duty. The mandate of the Armed Forces are to:

- Defend the territorial integrity of Nigeria and provide aid to civil authority to attain a safe and secure environment for economic growth
- Achieve a full complement of the military defence system of Nigeria in air, sea and on the ground.

Table 3.29 shows the various formations of the Nigerian Army

**Table 3.29: Nigerian Army Formations**

Division	Coverage	Area of Responsibility	Main Operations
1 Division	Kaduna	North West	A mechanized infantry with affiliated combat service units
2 Division	Ibadan, Oyo State	South West	A mechanized infantry with affiliated combat service units
3 Division	Jos	North Eastern flank	Armoured division with affiliated combat support and combat service support units
6 Division	Port-Harcort	Niger Delta/Coastal region	Charged with the responsibility of securing the Niger Delta/coastal region with its critical national oil and gas assets and infrastructure.
81 Division	Lagos Garrison Command	Lagos and Ogun	Mechanized infantry affiliated with combat

			support and combat service units
82 Division	Enugu	South East and South-South flanks	Composite Division with affiliated combat support and combat service support units
7 Division	Maiduguri	North-eastern States	Counter insurgency
8 Task Force Division	Maiduguri	North-eastern States	Task Force Division responsible for Operation Dole
Guards	Abuja	FCT- Presidential Villa and Brigade Presidential wing of the Airport	Responsible for the protection of the President, the Presidency, and the Presidential Villa

**Source: Nigerian Army**

Some of the challenges of the Nigerian Army includes:

- Amorphous nature of the enemy: decentralized and loosely connected – capable of taking decisions and springing surprise attacks
- Urban warfare: Enemies operate in urban areas and urban operations are the most difficult and consume a lot of manpower
- Porous borders which facilitate arms proliferation and cross border infiltration by terrorist groups.

## *ii. Nigerian Air force*

The Nigerian Air Force is adjudged to be one of the largest in West Africa with manpower of about 10,000 personnel stationed around ten bases. The Air Force is organised to meet current requirements of the service and the defence needs of the country. Its current structure consists of six (6) principal staff branches, four (4) Direct Reporting Units and four (4) Operational Commands. The main opportunity available for the Air Force is the use of communications satellites and unmanned aerial/ground/surface vehicle. This provides capabilities for effective surveillance, tactical mobility, border patrol, military operations, disaster and emergency management and monitoring of critical infrastructure such as pipeline monitoring.

The Air Force has opportunities to use communication satellites and Unmanned Aerial/Ground/Surface Vehicle across the globe (e.g. in Israel, China, Iraq, Afghanistan, Sri Lanka, Iran, Europe, Russia, USA, South-Africa, France, South-Korea, India/Pakistan and Singapore etc). This will greatly improve the effectiveness of the military in providing capabilities for effective surveillance, tactical mobility, border patrol, military operations, disaster and emergency management and monitoring of critical infrastructures such as pipeline monitoring, medical evacuation, protection of Maritime Resources (Maritime Air Patrol, Maritime Air Defence, Anti-Shipping) as well as protection of energy resources.

The challenges facing the Air Force include:

- Dilapidated Runways and Taxiways at (Kaduna, Kainji, Makurdi and Port Harcourt). Navigational Aids/Radars.
- Inadequate Operational Support Facilities.
- Ineffective Hangar Facilities and Workshops. Staff/Crew Utility Vehicles
- Unserviceable Bulk Fuel Installations
- Inadequate Electronic Communications/Radars, navigational aids, control tower/base ops equipment, and meteorological equipment)
- Insufficient Information Communication Technology
- Unserviceability of aircrafts
- Insufficient Funding
- Inadequate ammunition storage facilities
- Shortage of manpower
- Inadequate infrastructure and training aids
- Dearth of ground-based air defence systems.

### *iii. Nigerian Navy (NN)*

The Nigerian Navy is responsible for the naval defence of Nigeria; assisting to enforce customs laws; carrying out hydrographical surveys and safeguarding the country's maritime economy especially in the oil and gas sectors. The Navy currently has 39 vessels and more than 10 helicopters split between the Western Naval Command and the Eastern Naval Command. The main infrastructure-related mandate of the Navy is to develop infrastructure support for sustaining its operational, administrative and welfare responsibilities for the next two decades. The following represent challenges facing the Nigerian Navy:

- Poor maritime and air domain Intelligence Surveillance and Reconnaissance (ISR) awareness of Nigeria's maritime environment vis-à-vis the Gulf of Guinea;
- Lack of target identification and maritime picture compilation within Nigeria's maritime environment and the Gulf of Guinea;
- Coastal observation posts;
- Quick response to emergencies at sea with essential facilities such as jetties, armouries, fuel dumps or Petroleum, Oil and Lubricant (POL) reservoirs, helicopter landing pads, offices, and accommodation quarters;
- Platforms available to the NN are unsuitable and inadequate when compared with the essential requirements for effective maritime policing that would enhance the nation's maritime security;
- Maritime Patrol Aircraft for the surveillance of vast expanse of sea;
- Helicopters for patrolling coastal areas from operational bases, preferably FOBs, for refuelling and basic maintenance; and
- The present equipment holding of the NN cannot adequately meet the emerging threats for the effective maritime defence of Nigeria as envisaged in the National Defence Policy and the transformation objectives of the Armed Forces.

### 3.7.2 Targets for the Security Agencies

**Table 3.30: Civil Defence Infrastructure Target**

Sub-sector	Description	2017	2018	2023 (Target)	2043 (Target)
POLICE	Police Stations	1,598	1,743	2,206	4,057
	Standard Correctional Centres	240	241	245	272
	Correctional Service Barracks	30	50	100	200
	Training Schools	6	6	7	8
	Armouries	1	3	15	37
FIRE SERVICE	Fire Stations	322	750	1,500	2,500
	Disaster response centres	0	2	4	6
	National Data Centres	0	1	1	1
	Number of fire service training school (intermediate and officers)	5	13	26	44
	Fire hydrants in major cities and towns (percentage of towns)	≤5	20	40	≥80
ROAD SAFETY	Unit Command	182	282	482	744
	Academy	0	1	3	6
	Driver's licence farm	1	3	4	6
	Number of plate production farm	3	6	9	15
	Drivers' licence centres	140	240	440	744
	Roadside accident clinic	24	124	174	400
	Training school	0	1	12	37
	Accommodation units	5	82	130	234
	Traffic incident fatality/100,000 population, numbers	4	3	3	2
	Ratio of personnel/100,000 population number	11	15	19	22
	Reduce vehicle per personnel numbers	451	350	300	200

Source: NCSDC.

**Table 3.31a: Military Defense Sector Target**

Agency	Outcome KPI	2017	2018	2023(Target)	2043(Target)
Airforce	Operation Response Time	72hrs	48hrs	36hrs	12hrs
	Emergency Response Time	48hrs	24hrs	12hrs	6hrs
	Disaster Response Time	24hrs	12hrs	6hrs	1hrs
Navy	Regional Maritime Awareness Capacity	MDAs	Enhanced MDAs	TSC	TSC
	Coastal Maritime Surveillance System	MDAs	Enhanced MDAs	TSC	TSC
	Berthing Space for Ships	Poor	20%	60%	100%

Source: Ministry of Defence.

**Table 3.31b: Military Defence Infrastructure Target**

Agency	Description	2017	2018	2023(Target)	2043(Target)
Airforce	Command (Barracks)	4	5	6	8
Navy	Naval Airforce Units	14	20	26	36
	Jetty Locations	8	12	20	All
	Slipways Location	4	10	15	All
	Dockyard/Shipment Locations	2	3	4	All
	Helipads Locationns	2	6	10	All
	Fleet Support Group Workshops	2	3	5	5
	Forward Operating Base Locations	5	10	15	15
	Communications/ICT Infrastructure Locations	6	20	100	All

Source: Ministry of Defence.

**Table 3.32: Other Security Agencies Sector Targets**

Sub-sector	Outcome KPI	2017	2018	2023(Target)	2043(Target)
DICON	Percentage of small arms and Ammunition produced locally	25%	45%	60%	90%
	Quality and Quantity of small arms and Ammunition supplied to security agencies	35%	50%	65%	85%
	Use of excess capacity for civilian Products	Poor	20%	40%	80%
Nig-ComSat	Satellite base communication	30%	50%	50%	50%
	Indigenous navigation system using the L-band	50%	100%	100%	100%
	Remote isolated Systems integration and connectivity between security agencies	Nil	20%	40%	100%

Source: Ministry of Defence.

### **3.7.3 Required Infrastructure Investments**

Security is still exclusively the responsibility of the Federal Government. The NIIMP estimates that Nigeria needs to spend a total of USD 45 billion over the next 23 years on vital registration and security. This estimated amount would be spent on military and civilian security infrastructure as well as expanding infrastructure backbone for vital registration. It does not include expenditure on military and civilian security hardware, weaponry, personnel and general operations of the military and para-military agencies. Priority will be given to provision of barracks, operational buildings (stations, outstations, correctional centres, etc), training infrastructure and communication.

### **3.7.4 Private Sector Expectations and Priorities**

The Security Sector is largely managed by the Federal Government. The recommendation on enablers for private sector participation and priorities for the Vital Registration and Security sector deals with:

- Establishment of core and support infrastructure to ensure national security
- Inclusion of security training in curricula for primary and secondary schools;
- Creation of a security training academy;
- Professional and proactive regulatory agency for private security companies
- Availability of low-interest loan facilities to private security companies; and
- CCTV and other surveillance systems installed on all roads and connected to control rooms of database and biometrics banks to support forensic laboratories.

### **3.7.5 Legal Enablers**

The primary legislation reviewed for this sector was the Prisons Act. The provisions of the Constitution places Correctional centres solely under the purview of the Federal Government; the Prisons Act does not make provisions for the private sector to establish Correctional Centres. The Act does not allow private sector investments in the sector and encourages States participation, as only the Federal Government can regulate matters relating to the nation's Correctional Centres. There is room for the Act to be amended in order to allow States and private investors to invest in Correctional Centres in line with global best practices. Furthermore, there is need for institute reforms in the Correctional Centres, particularly with regards to decongestion of the nation's inmates.

## 4.0 Regional Infrastructure Investment Priorities

### 4.1 Regional Starting Positions and Economic Priorities

Nigeria's commitments toward regional development are conveyed by her National Development Plans and such development policies like the River Basin Development Authorities Act 1990, the Niger Delta Development Commission Act 2000 and recently, the North-East Development Commission Act 2017. Also, the South East Development Commission Bill is still undergoing the processes of passage at the National Assembly. Other regional efforts include the creation of the Development Agenda for Western Nigeria (DAWN) Commission.

Central to these policies is to engender simultaneously balanced economic growth and development across the 6 geopolitical zones, and to provide the basis for regional planning and development by ensuring that both rural and urban areas are equipped to achieve equitable socioeconomic and spatial development to function appropriately in their roles in the development of the national economy. Although appreciable levels of these goals have been accomplished, existing urban-rural development disparities are attributed to weak policy implementation coordination, lack of mechanisms for regional and economic integration, weak governance framework, poor funding and inadequate resource allocation, and lack of integrated regional infrastructure clusters.

Against this background, national development plans have consistently pursued a regional development goals as means of ensure even or balanced development among the regions in the country. The most recent ERGP identified a clear need for an integrated regional development policy that will cater for Nigeria's immediate and future development needs by identifying short, medium and long-term development programmes that can drive economic growth and prosperity on the basis of a clear regional development strategy. The goal of such an integrated approach is to harness the benefits of clustering certain sectors around prevalent basic resources and to leverage the creation of economic corridors as a basis for the distribution of critical infrastructure deployment across the geo-political zones. This would promote integration, sustainable use of renewable resources, improve local participation in industries and reduce poverty.

The objectives of Nigeria's integrated regional development are to:

- galvanise all existing regional development policies into a single integrated National regional Development Policy/framework;



- formulate a system of integrated infrastructure clusters in the wider regional context;
- create a comprehensive rural-urban integration system and hierarchical ordering of settlements;
- improve access to all areas within the country;
- balance economic development of the regions; and
- achieve economies of scale and high degree of self-sufficiency in food production.

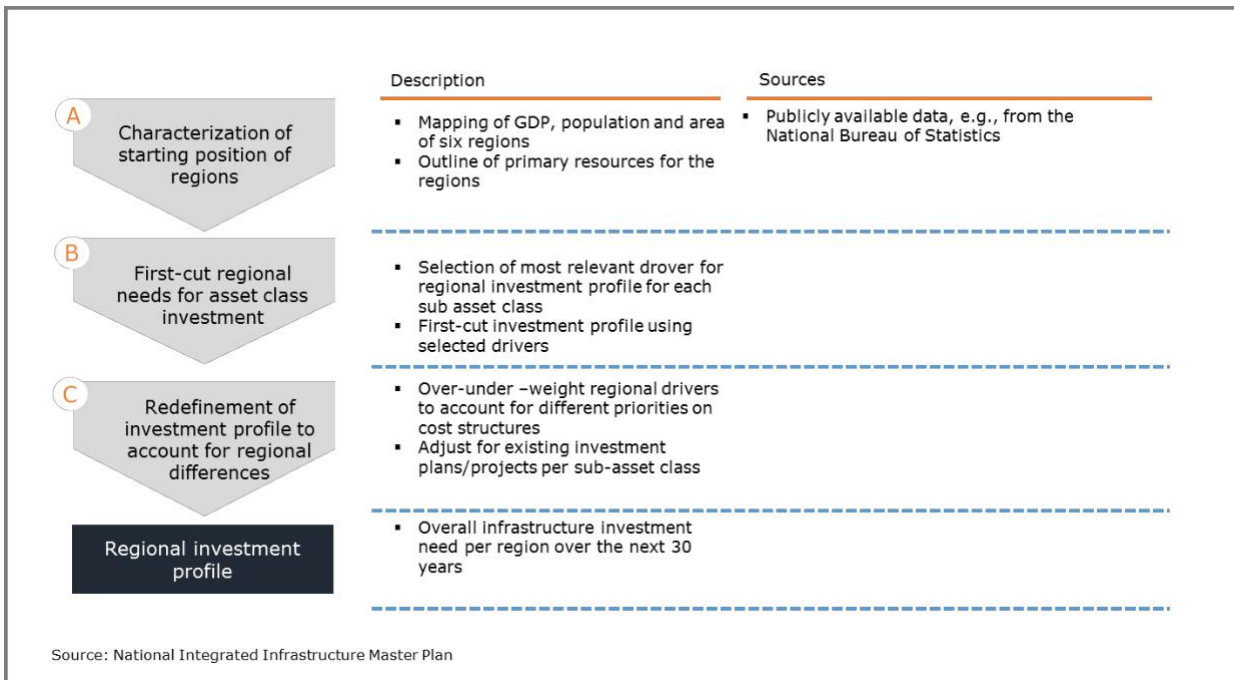
In this plan, consideration has been given to infrastructure investment requirements across regions, based on regional baselines, and natural endowments that can provide regional competitive advantage and serve as a starting block for regional planning and development of regional economic corridors.

## **4.2 Regional Development Potentials and Priorities**

The NIIMP identified required investment priorities of the six geopolitical zones using a 3-step approach (See Figure 4.1):

- Characteristics of each region were considered, including demographical spread of population across regions, the spread of economic activities, area of the region and primary resources that can form a basis for comparative advantage for the region determine economic focus areas.
- Each of the asset classes under consideration was then reviewed and a preliminary assessment of requirements for infrastructure was performed based on the key drivers for each asset class as well as minimal infrastructure requirements;
- Finally, the requirements were adjusted based on economic development patterns and development priorities for each region (e.g., increased investments in rail are required in regions with higher potential for the mining industry, as well as for connectivity to ports). These adjustments were based on a validation workshop with the states' infrastructure TWG, followed by validation workshops in each of the six geopolitical zones.

**Figure 4.1: Approach for Driving Regional Development Priorities**



Specific potential and comparative advantages as well as challenges facing the various regions can be summarised as follows:

**North West** – The region has potentials in wind and solar energy development and is endowed with vast deposits of solid minerals (iron ore, gold, and kaolin). There is a significant potential for up-scaling agricultural production, and with an estimated population of about 49.5 million people in 2016, it is also the most populous of the 6 regions, which conveys an abundance of inherent human resources potential. The region’s challenges include poor road infrastructure, a harsh climatic condition with significant threats of erosion and desertification, a weak industrial base and a rapid increase in rural-urban migration.

Recent activities of cross border bandits and cattle rustlers have heightened security related crises within the zone and has further imposed the need to enhance the existing national security and defence infrastructure in the zone.

**North East** – The region, being the largest of the six regions in terms of landmass, possess abundant arable land for agricultural cultivation, significant amount of surface water resources (including for hydropower), huge deposits of solid mineral (limestone, barite, coal), and vast potentials for wind and solar power development. Currently, Gas reserves in the region are being explored. However,

the region's challenges include security concerns, undeveloped rural areas, lack of storage for excess agricultural produce, and lack of a detailed base map.

**North Central** – The region has potential in surface water resources, large solid minerals reserves (iron ore, coal, limestone, tin etc.), fertile land, skilled manpower and long stretches of inland waterways. The region's challenges include poor industrial presence, poor sanitation as only 20 per cent of the population has access to good sanitation, heavy erosion in the Jos (Plateau) area caused by uncontrolled mining, and a lack of detailed base maps for the zone.

Also, with a high and rapidly growing population influx and increased economic activities, the Federal Capital Territory has peculiar characteristics that differ from the rest of the country and the region. Its high urbanisation and population density favour manufacturing and commercial activities, but also means an over stretched urban infrastructure base and a substantial need for the rapid expansion of the infrastructure base, particularly in transportation, housing, urban city works and health and education. Being home to the nation's capital, the FCT also requires the development of particular security infrastructure development needs to match its character.

The activities of the Boko Haram insurgents have led to a gradual degradation of the public infrastructure utilities existing in the zone. This has imposed the need for rehabilitation and reconstruction of the infrastructure within the zone.

**South West** – The region constitutes a major economic centre of Nigeria. It has very high potentials in the supply of skilled manpower, high population density and urbanization, solid minerals (gold, glass sand, and granite), huge number of commercial clusters, high industrial density, vast network of inland waterways and very fertile land for agricultural development. The region's challenges include inadequate physical infrastructure (transport, housing, health, education and power), rapid unplanned urbanisation, high unemployment, low agricultural productivity and environmental degradation.

**South East** – The region has potential in oil and gas and solid minerals reserves (coal, black marble, etc). Its high urbanisation rate and population density favours manufacturing clusters as well as commercial activities of wholesale trade and retailing, and financial establishments. The region suffers from a poor infrastructure base to support intensified trade and commerce (e.g., transportation, communications infrastructure, power and water supply), as well as intense issues of erosion.

**South South** – The region has extremely huge potentials in oil and gas development. It possesses a very huge amount of surface water resources and a vast network of inland waterways. The region has exceptionally fertile land and favourable climate for agriculture, a huge amount of forest resources, and very high potentials for the development of tourism, seaports and inland ports. The region’s challenges include poor road network, underdeveloped waterways and shores, lack of railway service (except the Port Harcourt to Kaduna link), extensive environmental degradation (oil pollution, coastal erosion and gas flaring) and security issues arising from the activities of militant groups and other violent youth militias that engage in kidnapping, sabotage and arson.

### 4.3 Regional Infrastructure Investment Priorities

In order to identify the regional infrastructure investment priorities, the main drivers for regional deployment of infrastructure and adjustments in this distribution were considered as shown in Table 4.1

Table 4.1: Regional Infrastructure Investment Drivers

Sector	Responsible	Main adjustments made and rationale
Transport	<ul style="list-style-type: none"> <li>Locations of largest cities (urban transport)</li> <li>Sites of economic importance (road/rail links)</li> <li>Economic activity (all other assets)</li> </ul>	<ul style="list-style-type: none"> <li>Maritime and aviation infrastructure needs to reflect major port and airport locations</li> <li>Rail infrastructure requirements should consider main rail expansion plans</li> </ul>
Energy	<ul style="list-style-type: none"> <li>Population and economic activity (power infrastructure)</li> <li>Oil and gas industry cluster (oil and gas infrastructure)</li> </ul>	<ul style="list-style-type: none"> <li>Higher generation and transmission investment in regions of higher processing and manufacturing importance</li> <li>Exploration needs of new potential oil and gas reserves in the North East</li> </ul>
ICT	<ul style="list-style-type: none"> <li>Population and economic activity</li> </ul>	<ul style="list-style-type: none"> <li>High urbanization and population density favour fibre backbone investments</li> </ul>
AWM	<ul style="list-style-type: none"> <li>Space for agriculture, soil fertility (agriculture)</li> <li>Water storage capacity, population (water)</li> <li>Natural resources, location of minerals processing clusters (mining)</li> </ul>	<ul style="list-style-type: none"> <li>Higher investments into regions with largely unexploited potential (e.g., northern regions for agriculture)</li> </ul>
Housing	<ul style="list-style-type: none"> <li>Population</li> </ul>	<ul style="list-style-type: none"> <li>Different housing costs in different areas of the country</li> </ul>
Social Infrastructure	<ul style="list-style-type: none"> <li>Population (all asset classes)</li> </ul>	<ul style="list-style-type: none"> <li>Consideration of economic activity for labour and productivity and education sub asset classes</li> </ul>
Security and Vital Registration	<ul style="list-style-type: none"> <li>Population</li> </ul>	<ul style="list-style-type: none"> <li>Necessity to settle security issues around industrial assets (e.g., oil and gas assets in the South South)</li> <li>Need to address political situation in the North East</li> </ul>

Source: National Integrated Infrastructure Master Plan

Larger shares of regional infrastructure investment required on the basis of asset class across the six geopolitical zones are investments in energy (power generation and transmission) and transport infrastructure. Ramping up investment in these asset classes, particularly in the South-south, South-west and North Central zones to meet the high energy requirements of industrial scale mineral processing and manufacture would drive innovations and the development of local capacities in technology. To escalate the distribution of finished goods and the supply of raw materials, improved networks of transport infrastructure, particularly railways and roads connecting economic nodes and industrial clusters would, drive trade and commerce across the six zones.

Table 4.2: Regional Infrastructure Investment Priorities

Region	Demand/Potentials	Infrastructure Investment Ramp-up Priorities
North-Central	Huge energy needs Poor transport network	<ul style="list-style-type: none"> <li>• Power generation, transmission and distribution</li> <li>• Road rehabilitation and expansion</li> <li>• Rail network for mining</li> </ul>
North East	Transport for link remote agric producing areas Optimizing alternative energy sources	<ul style="list-style-type: none"> <li>• Road rehabilitation and expansion</li> <li>• Alternative power generation/mini grids</li> <li>• Cross-national railway links</li> </ul>
North-West	Transport for link remote agric producing areas Energy demand to meet industrial activities	<ul style="list-style-type: none"> <li>• Road rehabilitation and expansion</li> <li>• Power generation, transmission, and distribution</li> <li>• Urban transport network expansion and upgrade</li> <li>• Cross-national railway links</li> </ul>
South-East	Energy demand to meet industrial activities Transport network to support industrialization and mining activities	<ul style="list-style-type: none"> <li>• Power generation, transmission and distribution</li> <li>• Railway infrastructure to mining sites</li> <li>• Urban transport network expansion and upgrade</li> </ul>
South-South	Multi-nodal transport network to link seaports and inland waterways Energy demand gap Huge oil and gas potentials	<ul style="list-style-type: none"> <li>• Power generation, transmission and distribution</li> <li>• Oil and gas exploration and refining</li> <li>• Urban transport network expansion and upgrade</li> </ul>

<b>South-West</b>	Energy demand to meet industrial activities Multi-modal transport network Upgraded urban and inter-city transport networks	<ul style="list-style-type: none"> <li>• Power generation, transmission and distribution</li> <li>• Urban metro and inter-city rail links</li> <li>• Road rehabilitation and expansion</li> </ul>
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Source: 6 Geo-political zones.

In the South-south and South-west, transport infrastructure requirements are closely linked with connecting seaports and inland waterways with inland ports and economic centres. Improved railway and road infrastructure in the North-west, North-east and North-central is required to evacuate agricultural produce to industrial clusters for processing and value-chain improvements, likewise, improvements of railway and road infrastructure in the Southern regions would particularly support trade and commerce, especially in the southeast, and stronger supply chains.

Generally, the potentials for domestic energy consumption and the global focus on the environment drives investments in the development of marginal oil fields and gas processing in the South and Greenfields in the Northeast. The global pace of economic digitization and the burgeoning local financial technology market propels increased investment in ICT infrastructure, while the up scale of supply of critical social infrastructure is to optimize the competitive advantage of a very young and mobile human capital base.

## 5.0 Medium - and Long-Term Sector Targets

### 5.1 Transport

**D**uring the plan period, the transport sector will focus on the following infrastructure development priorities:

**Roads** – priority portfolios focus on refurbishing and expanding the cross-national highway network. This include general rehabilitation and dualisation of major routes, and the rehabilitation and expansion of regional road networks.

**Rail** – emphasis is placed on the rehabilitation of all existing railway lines and to build additional lines for enhanced reach and service delivery. Priority is given to railway links to sites of economic importance as priority.

**Aviation** – the air transport sector needs to upgrade and expand existing airport infrastructure. Particularly, 11 airports are to be renovated and its facilities upgraded to international standards for passengers and cargo handling.

**Maritime** – the short-term focus in maritime sector is on increasing the share of inland waterway transportation through dredging of waterways and upgrading inland ports. Also, 2 new seaports are to be constructed and existing ports are to be upgraded and expanded.

**Urban transport** – in the short-term, investment is needed in the provision of shuttle buses, establishment of road terminals, bus lanes, Motor Park, traffic control system and initial works for rail mass transit systems. In the long-term, the construction of rail mass transit for urban areas with population of more than 1 million people would require substantial investments later than the initial 5-year period.

### 5.2 Energy

The Energy sector will focus on the following infrastructure development priorities:

**Power:** First, power generation was set to reach the target level of 20 GW in 2018. Immediate focus has been on gas and hydro-power generation through the planned execution of 13 priority hydro and five priority gas projects, with an option to add alternative power sources after 2023. Secondly, transmission capacity is envisaged to increase with an immediate focus on the cross-national grid. Adequate transmission lines (330KV, 132KV, 66KV) are to be

extended and commensurate with the capacity of sub-stations to wheel 20 GW in the short-term. The extension/growth of the transmission capacity is planned such that transmission losses, ease of connectivity to planned production plants and access to distribution points are taken into consideration. The planned increase in both production and transmission capacity is to be put in place along with the building of adequate manpower capacity to manage installations and handle associated projects. The establishment of a plant each is planned for biomass, wind, solar and nuclear energy during the plan period. Ongoing construction work on three Centres of Excellence in Hydropower Research and Development in University of Ilorin, Ilorin; Centre of Excellence in Petroleum Research and Development in Abubakar Tafawa Balewa University, Bauchi; and Centre of Excellence in Energy Efficiency and Conservation in University of Lagos, Lagos will be completed during the plan period to ensure sustained flow of technical manpower in the management and maintenance of associated infrastructure in Nigeria.

**Oil and gas:** Over the next five years, increase in the capacity of the pipeline network is planned to support gas-to-power and gas-to-industry needs. The planned projects include ELPSII, OB3, QIT-OB3, Calabar-Umuahia Ajaokuta, Obigbo Node – Ajaokuta, and Ajaokuta-Kaduna-Kano pipelines and related gas handling and processing facilities and LPG and LNG processing and bottling plants. Also, establishment of industrial park Ogidigbe free trade zone is foreseen. Four refineries in Akwa Ibom, Lagos, Kogi, and Bayelsa States are also planned to meet the domestic demand for petroleum products. Continued investments in crude production and exploration projects are planned to meet the sector targets.

### **5.3 ICT**

During the plan period, the ICT sector will focus on the following infrastructure development priorities:

**Telephony** – priority portfolios are set to enhance and expand the mobile network to ensure ubiquitous and continuous coverage. This includes expansion of satellite and ground infrastructure, expansion of base stations and establishment of last mile connectivity in major cities.

**Internet and broadband** – priority portfolios will be on expanding the fibre-optic network in order to increase end-user access to the existing broadband capacity. Internet access for underserved parts of the population is set to increase by creating Public Access Venues and



Universal Access Centres. The objective to establish Nigeria as a centre of ICT technology and entrepreneurship development shall be advanced by the establishment of fabrication centres for ICT hardware as well as ICT-enabled incubation centres.

## **5.4 Agriculture, Water and Mining**

The extended Agriculture, Water and Mining sector focus in the development of infrastructure priorities is as follows:

**Agriculture** – The prospect of the Nigerian agricultural sector revolves around partnerships that would deliver an affordable mechanization to farmers, access to timely supply of standardized inputs, revamping extension services and an integrated approach to value-chain development that would ensure an effective link between the agricultural sector and the industrial sectors. With COVID-19, the potential of agriculture as a viable growth and employment alternative to crude oil is even more pronounced. In appreciation of the potential of the agricultural sector in ensuring food security, growth and employments, the Ministry is embarking on a four-year strategic plan to consolidate on the successes of ATA and APP and also bridge implementation gaps while focusing on local knowledge generation, local sourcing of inputs and changing the rudimentary farming practices. Ultimately, the policy envisaged massive reduction in food import bills, with emphasis on reducing over-reliance on dairy and fish importation, among others. Specifically, FMARD envisaged to launch and implement National Agricultural Technology and Innovation Plan (2021-2024). The policy strategy is designed to:

1. Implement the integrated Livestock development by implementing model grazing reserves and integrated dairy processing for adoption in states;
2. Implement a comprehensive mechanization programme that would cover all the rural local governments across the country;
3. Repositioning and restructuring Agriculture Research Institutes and Colleges for increased research output to be used in boosting agricultural productivity;
4. Introduce a cluster model for promoting commodity value chains in partnership with interested States and Private Sector;
5. Work with States to build rural road, electricity and water to increase farm to market access and support enterprise initiative across the Federation;
6. Re-launch Zero-Reject initiative along with Commodity Standardization programme and operationalizing the Seeds and Fertilizer laws;

7. Establish Embryo Transfer Centres to improve domestic milk production;
8. Revamp extension services starting with the training of 75,000 extension worker, strengthening farmer education, and e-extension; and integrating N-Power beneficiaries in the extension programmes;
9. Establish Agro-Processing Centres/zones of food and cash crops across the country;
10. Fast-track the recapitalization of the Nigerian Agricultural Insurance Cooperation and Bank of Agriculture in collaboration with CBN, Ministry of Finance, Budget and National Planning;
11. Support the development of Private-Sector led Agricultural commodity exchange to enable Nigeria become Agricultural Commodity Marketing hub in the West African Region and beyond;
12. Support the establishment of 5 modern abattoir 1 each in Enugu, Rivers, Taraba, Benue and Bauchi States;
13. Engaging in land clearance and development in collaboration with State and Local Governments to widen the area of operation and expand agricultural activities nationwide;
14. Implementing programmes on Transboundary Animal Diseases/Pests Control, and upgrade Veterinary Hospitals/ Health Centres and Apiculture Development;
15. Rehabilitating and constructing Water Harvesting Structures and Mini-Earth Dam across the States to augment rain-fed agriculture, assist dry season farming and increase agricultural production in the country;
16. Intensifying National Accelerated Fish Production Programme through the exploitation of marine resources in the Nigeria's Deep Sea/Exclusive Economic Zone (EEZ) by Nigeria's fish merchants, as well as the exploration of inland water bodies by fish farmers to diversify domestic fish species, for overall sufficiency of national fish requirements;
17. Supporting food and nutrition programme to enhance the quality and safety of food production consumption from crop, livestock and fishery value chains through proper standardization, certification and control; and
18. Enhancing National Food Reserve Stock by procuring crops at harvest, mopping-up excess production, balancing price volatility and enabling farmers to increase output.

**Water** – emphasis is placed on ensuring sustainable access to safe and adequate water resources to meet the socio-economic needs of all Nigerians. Accordingly, priority portfolios

focus on water supply schemes, sanitation, drainage and irrigation, with inter-basin water transfers and basic databank infrastructure also being in scope. The medium – long term targets include:

1. Completion of inherited projects;
2. Enhanced operations of RBDAs;
3. Vigorously pursue the “Clean Nigeria: Use the Toilet” Campaign and implementation of Executive Order No. 009;
4. Implementation of the WASH ACTION PLAN including the PEWASH programme;
5. Accelerated implementation of the Transforming Irrigation Management in Nigeria (TRIMING) projects;
6. Expansion of the network for the Telemetry Data Collection Platform (DCPs) and upgrading of Hydrological Modelling Centre;
7. Support for transboundary activities and programmes;
8. Accelerate implementation of the National Irrigation Development Programme (2016-2030);
9. More collaborative efforts between the three tiers of Government that would provide funding for critical investment in water and sanitation infrastructure/programmes across the country;
10. Delineation of floodplains in the 36 States of the Federation and Production of Flood Vulnerability Maps;
11. Groundwater Monitoring and production of Hydrological Maps of the country;
12. Expansion of a Flood Early Warning & Alert System (Real -time Based System) and upgrading of Web - based and database Hydrological Information System;
13. Source funding for the Flood Management Master Plan for Rivers Niger and Benue Study;

14. Commence Design studies for the engineering works on the improvement of the hydraulicity of the River Chari – Logone and reservoir capacity of the Lake Chad as Phase I of the Interbasin Water Transfer Project;
15. Source funding for the Final Design of the water transfer project based on the selection of the feasible components that could meet the objectives of restoring and maintaining the Lake Chad sustainably; and
16. Future programmes and projects of the Ministry will be guided by the provisions of the Water Resources Master Plan (2016 -2030), the Water Sector Roadmap (2016 - 2030) and the Sustainable Development Goals (2016 - 2030).

**Mining** – priority portfolios of the Mining sector include:

1. Complete automation of payment processes in respect of royalty, permits, and licenses;
2. Complete upgrade, automation, and integration of the mining cadastre office (MCO) license online application and renewal processes;
3. Resolve all pending legal issues in respect of titles in line with the Nigerian Minerals and Mining Act, 2007 and resolve all community consent and community development agreement disputes;
4. Review current holders of bitumen mining leases and pursue the bidding process for delineated bitumen blocks;
5. Embark on extensive exploration activities to improve the geological data of the country’s mineral resources to attract investment;
6. Finalize the national goal policy as well as the presidential initiative on gold mining and implementation for the purpose of job creation and revenue generation;
7. Unlocking the socioeconomic potentials of artisanal and small scale mining for job creation and poverty reduction;
8. Continue formalization programme and empowerment of artisanal and small-scale miners; and
9. Effective management and prevention of heavy metals poisoning associated with artisanal mining.

## **5.5 Housing**

The extended priority for the Housing sector is to increase the available over 12 million housing units to 17.4 million units in 2025, 23.5 million units by 2030, and about 40 million

by 2043. This will be achieved through the provision of legal enablers to stimulate investments in the development of local capacities and value-chains to mass produce housing based on domestic technological base, and modernization of existing land and property registry systems.

Other priorities are strengthening mortgage financing to support longer-term lending at very minimal single digit rates, and to make land easily available, transferable and affordable for housing development through the domestication of the NIIMP by subnational governments, preparation and adoption of regional development plans, preparation of National Street Addressing System and formulation of an appropriate National Land Policy.

Some specific short-term activities to drive the objectives of the plan, include:

- Construction of Building Material Testing Workshop at Kuje, Federal Capital Territory;
- Provision of infrastructure (Roads, Drainages, electricity supply and water supply in new towns in FCT);
- Upgrading of cadastral geographic information system laboratory in headquarters and zonal offices;
- Construction of office headquarters for 5 regulatory bodies in housing sector in Abuja, FCT;
- Slum upgrade: construction of classrooms blocks, primary healthcare, skill acquisition centres, borehole, electricity, erosion control, etc. in 36 states of the federation and FCT.
- Collaboration with research institutions and public sector to build houses for Nigerians at lowest possible cost.

## 5.6 Social Infrastructure

The extended focus for Social Infrastructure comprises of the following infrastructure development priorities:

**Health** – the priority is to develop an integrated healthcare system with an infrastructure base that guarantees high quality, affordable and sustainable world-class healthcare services for all. Identified projects include building hospitals, health centres and specialist centres across the whole country, as well as establishing health education centres and drugs/vaccines manufacturing centres. Specifically, focus will be on establishment of 6 world-class specialist

hospitals, primary health centres in each political ward, 3 health centres in each LGA and 3 general hospitals, as well as establishment of reference laboratories equipped for virology research and the development of realtime healthcare solutions.

Women – priority portfolios focus on establishing basic infrastructure for the advancement of the development of capacities in women and girls and the promotion of maternal and child health.

**Education, Youth, Sport, Environment, Tourism, Information, Labour and Productivity** – priority portfolios for all of these sub sectors centre around creating new infrastructure and rehabilitating/upgrading existing ones, such as facilities for education, sports and youth development, pollution and waste management systems, environmental control, information dissemination, training institutes and safety net centres.

## **5.7 Vital Registration and Security**

The sector focus is on the following infrastructure development priorities:

**Vital Registration** – the priority is to provide adequate infrastructure for Vital Registration services, i.e., establish a functional registration system across the whole country.

**Security** – priority portfolios focus on the provision of adequate internal security by establishing effective crime prevention, effective correctional services, state-of-the-art fire services and adequate road safety. In terms of immigrations, the provision of the state-of-the-art immigration security infrastructure would address the operational challenges of modern migration and enhance immigration related service delivery. For external security, adequate state-of-the-art modern military infrastructure is to be provided and cooperation with indigenous industries would be leveraged in advancing local development and production of military technologies.

## **5.8 Federal Capital Territory**

The FCT focus is on the following infrastructure development priorities:

**Housing** – including slum upgrades, and the establishment of new residential districts and satellite towns.

**Transportation** – include construction and expansion of the road and rail networks required to transport the FCT's fast-growing population

**Social Infrastructure** – include the expansion of health and education infrastructure to accommodate the rapidly growing population.

**Security** - infrastructure to meet the evolving security challenges.

## 5.9 Quick Wins

Special consideration is given to projects that are considered “quick wins”. These projects have potentials of immediate benefits or “low hanging fruits”. Very high priority is placed on immediate “quick wins” on a national scale, i.e. projects with the largest economic and social benefits. Projects considered as in the category include:

### *Energy:*

- Power and gas infrastructure, especially to increase generation and transmission network capacity. As the privatisation of generation and distribution assets continues and is expected to support growth of the country’s power capacity, it is important to ensure timely availability of critical inputs (such as gas pipelines, with ELPSII and OB3 being most critical), as well as evacuation capacity through the transmission network.

### *Transportation:*

- Rehabilitation of major cross-national transport links, particularly major South-North road connections such as the Lagos-Kano link, East-West connections such as Calabar-Lagos-Badagry/Seme link, East-North connections, such as Port-Harcourt-Abuja link and the rehabilitation of existing railway network.
- Improvement of cross-modal connectivity links. Today, the connectivity from one mode of transport to another mode of transport is limited, both for human and material goods transport. The connection links between major ports with the relevant road networks and airports is of utmost priority.
- Upgrading of major airports, as well as enhancing connectivity of international-international and international-domestic links, e.g., in Lagos airport.
- Improvement of urban transportation. Many of Nigeria’s major urban centres, such as Lagos and Port Harcourt for example, are currently struggling to meet the demands of urban transportation. Upgrades in capacity and quality are required in urban mass transportation to significant cut-down on efficiency.

### ***Agriculture, Water Resources and Mining:***

- Development of Staple Crop Processing Zones and linking these areas to the market.
- Development of priority minerals, including iron ore and coal. Today, Nigeria has a very limited development of iron and steel industry, which is disproportionate to the available iron ore reserves. Also, despite locally available coal, it uses as a power generation source is non-existent. To stimulate growth in these sector, quick wins can be realised through intensified exploration studies and increased mining infrastructure development like the completed Ajaokuta-Warri Railway to support existing Steel iron and steel processing Plants.

### ***ICT:***

- Expansion of broadband connectivity to improve existing internet access and to make internet connectivity from landing points available to the end-users across the country.

### ***Social Infrastructure:***

- Development of public health facilities and diagnostic centres to provide basic health services to the population across the country.
- Upgrading of primary, secondary and tertiary education facilities. This should be considered jointly with a broader set of changes and reforms required in the education sector to intensify innovation and Research and Development activities, especially in areas of the country's comparative advantage.

### ***Security and Vital Registrations:***

- Rehabilitation of security facilities and infrastructure to improve the provision of quality security services and identification of citizens and other residents.

### ***Housing:***

- On-going development of mass housing market in Nigeria to significantly reduce the housing deficit through investment in local capacities for building materials manufacturing and middle-level technical capacities.
- Fast track statutory approvals for new housing developments with inputs of relevant built-environment design professional.
- Train and certify 200,000 artisans in trades within housing delivery value-chain.
- Develop modular housing production facilities across 2 states in respective geopolitical zones.
- Develop new low-cost local building materials based on indigenous technologies and increase volume of local materials and technologies.



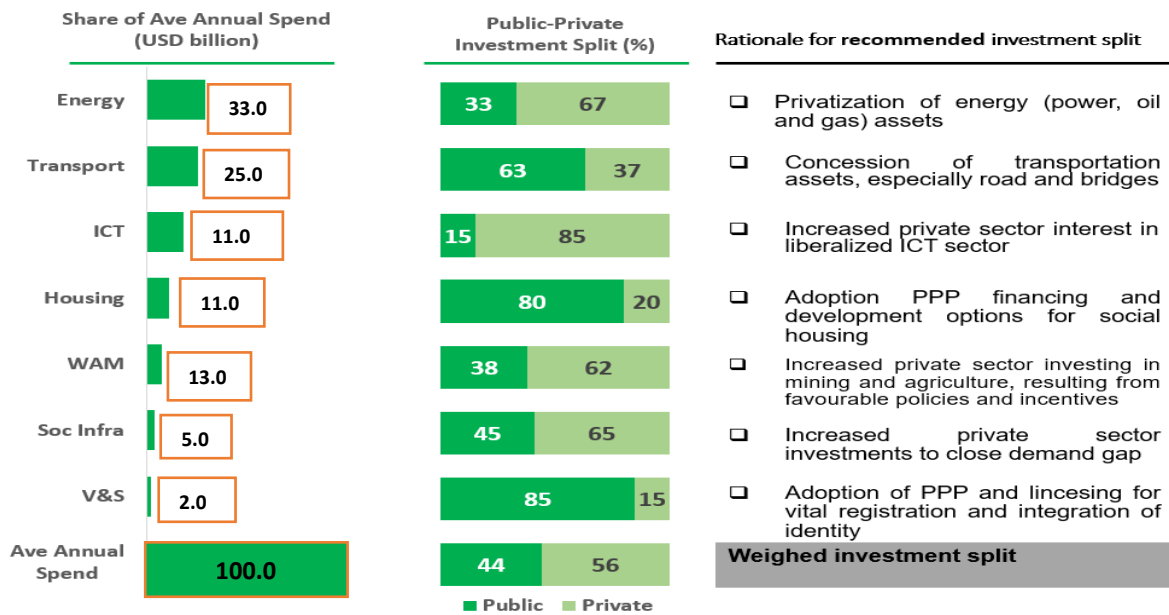
## 6.0 Financing Plan

### 6.1 Financing the Plan

**A**s governments around the world continue to take extraordinary measures in response to the impact of the COVID-19 pandemic, scaling up public investments in infrastructure is expected to play a key role in supporting productivity, economic recovery and job creation. Nigeria, in particular, requires significant investment in critical infrastructure to ensure economic recovery and meet its medium to long-term development needs. Overall, the implementation of this master plan is estimated to require a total investment need of USD 2.3 trillion over the 23-year period. However, for the next five years of the plan, about USD 150.0 billion is an expected annual financing requirement from both the public and private sectors as shown in Figure 6.1.

Between 2014 and 2018, the private sector was expected to account for about 48 per cent of the infrastructure investments in Nigeria. However, increase adoption of PPP financing models, particularly in the transport, energy, vital registration and housing sectors, is expected to further increase the share of private sector investment. With the implementation of privatization plans and deepening of reforms, the share of private sector investments is therefore expected to increase to about 56.0 per cent or USD 84 billion by 2025. The private sector share of spending primarily accounts for assets that are fully owned and financed by the private sector.

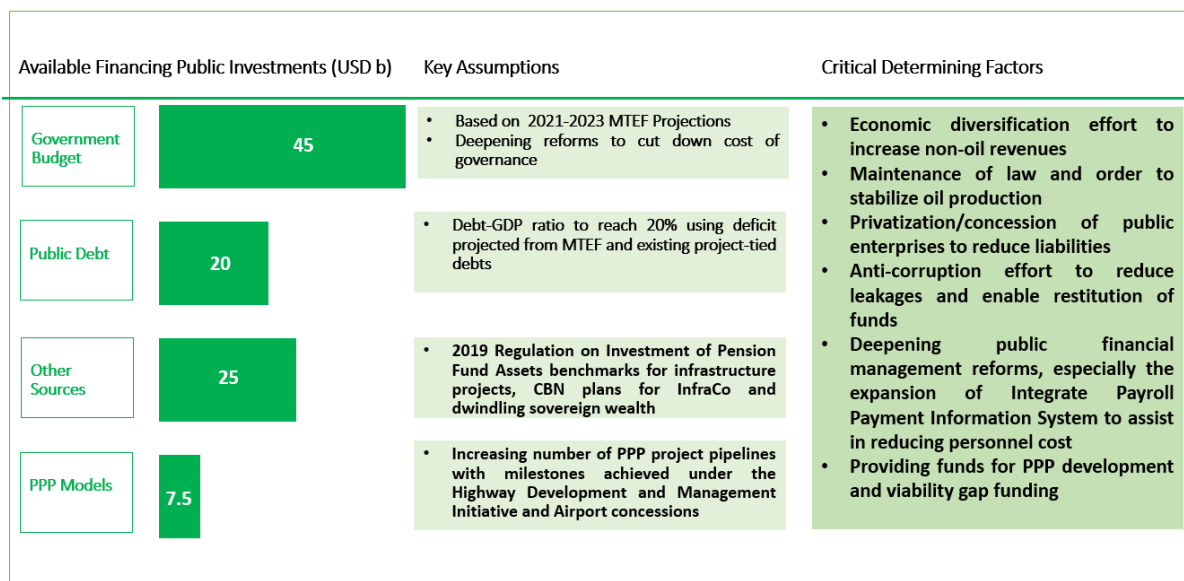
**Figure 6.1: Expected Public-Private Infrastructure Investment Split (2021-2025)**



Source: NIIMP Review Team.

The remaining 44.0 per cent of the required infrastructure investment (USD 66 billion) will be financed annually by the public sector using a combination of funding models and sources. These include: 1) government budgets (federal and state), 2) new borrowing, 3) other public sources (e.g. InfraCo, SWF), and 4) public-private partnerships (PPPs). Figure 6.2 summarizes the estimated amount of financing resources from each of these sources as well as the underlying assumptions and enablers.

**Figure 6.2: Available Financing for Public Investments**

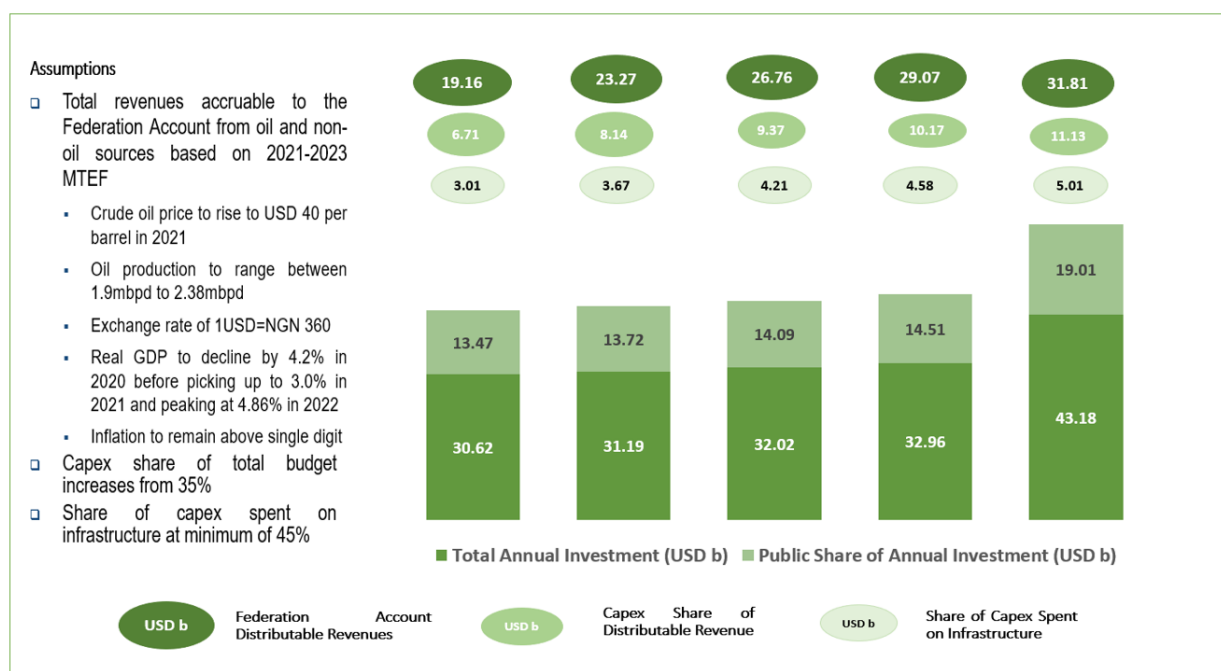


Source: 2021-2023 MTEF and NIIMP Review Team.

### 6.1.1 Government Budgets (Federal and States)

Federation Account distributable revenues is projected at about USD 129 billion over the next five years, based on projections from the 2021-2023 MTEF (see Figure 6.3). Up to USD 45 billion could be freed up for capital expenditure, if governments intensify effort aimed at cutting down the cost of governance to moderate the growth of recurrent expenditure. This will enable the proportion of capital expenditure in the total annual budget to rise to a minimum of 35.0 per cent while the share of capital expenditure spent on infrastructure increase to a minimum of 45.0 per cent. It is expected that the level of implementation of capital budget will be sustained at above 75.0 per cent during the period.

**Figure 6.3: Annual Investment Requirement (2020-2024)**



Source: NIIMP Review Team.

### 6.1.2 New Borrowings

The COVID-19 pandemic, no doubt, has contrained the fiscal space in a number of countries and pushed debt levels to new heights. Compared to end-2019, the IMF projected average debt ratios by 2021 to rise by 20.0 percent of GDP in advanced economies, 10.0 per cent in emerging economies and about 7.0 per cent in low income countries. However, with Nigeria's debt-GDP ratio of 19.7 per cent in 2019 and the need to ensure rapid economic recovery from an imminent recession, government can still afford new borrowings of about USD 20 billion to finance its infrastructure over 2020-2024, without stepping out of the fiscal safe zone of 25.0 per cent of GDP.

The share of sovereign bonds in infrastructure financing is expected to increase during the plan period, with the Sukuk Sovereign accounting for substantial part. It is assumed that up to 80.0 per cent of additional debt from both capital and financial markets incurred during the period will be used directly or through deficit financing for infrastructure projects.

### 6.1.3 Other Public Sources

Government could also employ alternative sources of public investments to finance the required infrastructure needs. For instance, the CBN InfraCo PLC initiative has the potential

of bridging financing gap in the public sector. This special infrastructure development vehicle, which would be managed by an independent fund manager, could generate up to USD 22.5 billion (i.e. over 55.0 per cent of the target to be raised in five years) through debt and equity.

#### **6.1.4 Increasing the Share of PPPs**

With limited fiscal space occasioned by the response to the COVID-19 pandemic, PPPs will be crucial to mobilize new sources of long-term financing for infrastructure investment. Over the years, government has demonstrated commitment to the adoption of the PPP financing option and there are strong indications of optimizing potentials of this mode of financing in the future. This is established from the following major developments in the Nigerian PPP ecosystem since the beginning of NIIMP implementation:

- Development and deployment of the ICRC-World Bank PPP Projects Disclosure Portal, the first of its kind in the world;
- The number of PPP project pipelines published by ICRC increased significantly from 18 in 2013, 48 in 2014 to 77 by 2017;
- Establishment of Presidential Infrastructure Development Fund;
- Initiation of the Road Infrastructure Development and Refurbishment Investment Tax Credit Scheme which is leveraging private sector capital for the development and refurbishment of road networks in industrial clusters and key economic areas in Nigeria;
- Nigerian Sovereign Investment Authority (NSIA) and Third-Party Infrastructure Guarantee Fund (InfraCredit);
- By October 2019, there were 139 PPP pre-contracts at development and procurement phases;
- By mid-2019, there were 69 post-contract PPP projects under implementation;
- A total of 76 Outline Business Case (OBC) and 31 Full Business Case (FBC) Compliance Certificates were issued by ICRC from inception to 2019. Out of these numbers, 9 OBCs and 9 FBCs were issued in 2019; and
- Between 2010 and 2018, PPP projects worth USD 8.0 billion were approved by the Federal Government.

The interest in and commitment to financing infrastructure using the PPP option is expected to increase in the coming years. It is estimated that up to USD 7.5 billion of infrastructure investments could be financed through PPPs over the next five years.

## **6.2 Key Financing Decisions Required**

More than ever before, the COVID-19 crisis has heightened the need to take bold steps and make strategic choices required to improve allocation efficiency, ensure fiscal discipline, and optimize non-budgetary sources. The share of recurrent expenditure needs to be moderated and capital project prioritization process need to be improved to reduce leakages and imprudence. Already, government has taken steps to reduce its debt-revenue ratio and vulnerabilities through improved domestic revenue mobilization drive, optimization of public expenditure through the IPPIS implementation across MDAs and discontinuation of the costly subsidy regime on PMS in order to free-up scarce resources for priority infrastructure projects.

In addition to the above, approvals for key reform initiatives need to be accelerated to build confidence of the private sector and seize the opportunity created by the pandemic. Of importance are the CBN InfraCo initiative, deepening liberalization as well as privatization and concession of selected public assets.

These financing decisions will need to be made on a project-by-project basis to ensure optimal risk allocation. Government has to follow a carefully structured process when considering whether to finance.

Four important questions can help to determine which financing option is best for a given project. These are:

- What are the main goals to be achieved by the asset? (What is the public service mission of the asset? What are the non-financial goals?); who needs to maintain ownership over the asset or its revenues? (Public developer, private developer or a mixture of both?);
- Which option will minimize financing costs? (How important is minimizing the cost of financing to the project?);

- What overall project budget can be supported by each financing option? What degree of flexibility is required for repayment of debt? What level of risk is inherent in the project?); and
- What are the capabilities required for the project, and who is in the best place to ensure these capabilities? (How important are specialized skills? Where do these skills exist today? Where should they exist?).

### 6.3 Strategies to Increase Private Sector Participation

Increased private sector participation, both through PPPs and full privatization, is required to decrease the burden of the infrastructure investments on the public sector. To enable increased participation, the government needs to address issues that discourage private sector players from investing in infrastructure. Such issues include:

- Difficulties in access to and cost of finance due to lack of maturity in Nigeria's credit/venture capital market
- Security concerns, corruption and other governance issues
- Lack of economic incentives in some sectors to encourage private sector investment
- Inconsistency in enforcing policies and unpredictable regulatory regimes that limit investors' ability to protect investments
- Insufficient public sector capability to design and implement PPP projects.

Nigeria will, therefore, need to address these issues in order to unlock the private sector investment required to successfully implement the master plan. Key actions that need to be taken include:

- a) **Access to capital:** Establish long-term financing and refinancing mechanisms for viable projects, especially, in the early stages (e.g., specialized funds for infrastructure).
- b) **Political/Cost Risks:** Assure macroeconomic stability policy consistency and eliminate corruption. Provide electricity to support growth and reduce cost of operations. Provide critical infrastructure such as link roads. Ensure standardization and central access to infrastructure and provide partial risk guarantees to projects, as appropriate.

- c) **Fiscal incentives:** Offer business and fiscal incentives to encourage private sector investments in infrastructure (e.g., granting pioneer status and duty exemptions, especially during construction).
- d) **Government rules and regulations:** Establish a clear legal and regulatory framework for private financing of infrastructure and establish a standard process for delegating authority from the Federal Government for infrastructure development.
- e) **Capabilities in managing PPPs:** Establish a well-functioning PPP unit to build capabilities and manage financing of PPPs; Develop capacity building initiatives for public sector stakeholders; Identify/establish implementation teams within the MDAs; Develop templates for PPP procurement and implementation.

These actions (which are further summarized in Table 6.1) align with some of the recommendations proffered by the Central Bank of Nigeria for increasing PPP activity in Nigeria. Specifically, these include:

- Create an Infrastructure Project Development Facility to finance early project development activities so as to create a pipeline of bankable PPP projects
- Establish a dedicated, cash backed fund (Government Resource Fund) outside the annual budgetary allocation process to finance the government’s contributions on infrastructure involving the private sector
- Establish long-term refinancing mechanisms aimed at refinancing short-term infrastructure loans
- Provide fiscal incentives, such as exemptions from customs duties for equipment to be used for infrastructure development, for selected infrastructure projects.

The private sector has indicated its readiness to take complete responsibility for selected sectors, provided government puts in place a clear, transparent and consistent enabling environment for private sector investments. Such sectors include Agriculture, Aviation, Housing, Oil and Gas, SMEs, and Trade and Commerce. It also indicates readiness to participate in the power and transport sectors under PPP schemes.

**Table 6.1 Recommendations for Increasing Private Sector Financing**



Access to capital	<ul style="list-style-type: none"> <li>Establish long-term financing and refinancing mechanisms for viable projects, especially in the early stages</li> </ul>
Political/cost risk	<ul style="list-style-type: none"> <li>Assure macroeconomic stability, policy consistency and eliminate corruption</li> <li>Provide electricity to support growth and reduce cost of operations</li> <li>Provide critical infrastructure such as link roads</li> <li>Ensure standardization and central access to infrastructure</li> <li>Provide partial risk guarantees to projects as appropriate</li> </ul>
Fiscal/monetary incentives	<ul style="list-style-type: none"> <li>Offer business, fiscal, and monetary incentives to encourage private sector investments in infrastructure</li> <li>Reform interest rate regime to reduce cost of funding</li> </ul>
Government rules and regulations	<ul style="list-style-type: none"> <li>Establish a clear legal and regulatory framework for private financing of infrastructure</li> <li>Establish a standard process for delegation of authority on infrastructure development</li> <li>Provide framework for ensuring continuity of government rules and regulations</li> </ul>
Government rules and regulations	<ul style="list-style-type: none"> <li>Develop pipeline of bankable PPP projects</li> <li>Establish a PPP unit to build capabilities and manager financing of PPPs</li> <li>Develop capacity building initiatives for public sector stakeholders</li> <li>Identify/establish implementation teams within the Ministries, Departments and Agencies (MDAs) and provide PPP support to states</li> <li>Develop templates for PPP procurement and implementation</li> </ul>

## 6.4 Legal Enablers to Increase Private Sector Participation

A review of relevant infrastructure-related legislations for increasing private sector participation in infrastructure pointed to some of the key legal enablers for Public Private Partnerships (See Table 6.2). The primary focus was on Public Private Partnerships as regulated by the Infrastructure Concession Regulatory Commission Act. The Commission was established to provide an enabling institutional, legal and regulatory environment within which the public and private sectors could partner to bridge the infrastructure gap in Nigeria.

The ICRC Act empowers the Commission with the functions and powers to:

- Provide general policy and guidelines, rules and regulations;
- Take custody of every concession agreement; and
- Ensure efficient execution of any concession agreement or contract entered into by the Federal Government.

The Act also provides for MDAs (Ministries, Departments and Agencies) to enter into contracts with or grant concession to any duly pre-qualified private sector proponent for the financing, construction, operations and maintenance of any infrastructure that is financially viable or any development facility of government.

Another key regulation is the National Policy on PPPs (N4P), which provides MDAs with operational guidelines for PPP project development. However, this policy and the ICRC Act have some limitations which include:

- Limited scope, with an emphasis on concession contracts to the exclusion of other PPP options
- Legislations regarding jurisdictions and definition of terms. The Act is presently somewhat outdated
- Lack of clarity on the Commission’s role as facilitator, as well as regulator of PPPs in Nigeria
- No powers conferred on the Commission to summon parties to a PPP contract in order to obtain information or intervene in runaway transactions
- No provision for unsolicited bids or inherited legacy of PPP projects.

While the ICRC Act has no identifiable conflicts with the Constitution, in the area of conflicts with other laws, there are areas of difficulties between the provisions of the Act, and the Bureau for Public Enterprises and the Bureau of Public Procurement.

**Table 6.2: Suggested Initiatives for Increasing Share of PPPs**

	Description	Responsible	Rationale
Infrastructure Project Development Facility (IPDF)	<ul style="list-style-type: none"> <li>Facility to finance early project, development (PD) activities ahead of procurement of private sector investors and ensure (a) creation of pipeline of bankable PPP projects; (b) clear direction of government’s development priorities; (c) optimal allocation of risk between public and private sectors</li> </ul>	<ul style="list-style-type: none"> <li>NPC, FMoF, MDAs, Budget Office</li> </ul>	<ul style="list-style-type: none"> <li>Financing of PD by specialized company enhances timely preparation of PPP project pipeline</li> <li>Effective allocation of risks between public and private sectors</li> <li>Continuity in project implementation via competitive selection process</li> </ul>
Government Resource Fund (GRF)	<ul style="list-style-type: none"> <li>Provision of a dedicated, cash-backed fund outside annual budgetary allocation to finance government’s contributions on infrastructure involving private sector</li> </ul>	<ul style="list-style-type: none"> <li>FG, NASS, Donor Partners, DMO</li> </ul>	<ul style="list-style-type: none"> <li>Dedicated fund will provide financing independent of annual budgetary cycle to support PPP projects</li> <li>Improve commercial viability of projects and attract capital</li> </ul>
Long Term Refinancing Mechanisms	<ul style="list-style-type: none"> <li>Group of mechanisms aimed at refinancing short-term infrastructure loans, including infrastructure assets refinancing facility (IARF), cash flow securitisation and establishment of specialized infrastructure financing companies</li> </ul>	<ul style="list-style-type: none"> <li>FG, CBN, NIF, SEC</li> </ul>	<ul style="list-style-type: none"> <li>Encourage continuous debt and equity investments from banks and private equity funds</li> <li>Cash flow securitization will support development of the Nigeria debt capital market</li> </ul>
Long Term Refinancing Mechanisms	<ul style="list-style-type: none"> <li>Existing incentives promoting industrialization extended to infrastructure projects, such as exemptions from customs duty on machinery and spare parts to be used for infrastructure development</li> </ul>	<ul style="list-style-type: none"> <li>Presidency, Nigeria Customs Service</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of overall project cost</li> <li>Incentivize private sector participation in infrastructure development</li> </ul>
<p><b>Supporting initiatives</b></p> <ul style="list-style-type: none"> <li>Clear legal and PPP regulatory framework</li> <li>Standardized public and private procurement process</li> <li>Immediate capacity building programme for public stakeholders</li> <li>Implementation of shared investment appraisal services for pension and insurance fund administrators</li> <li>Standard process for delegation of authority by FG on infrastructure development</li> </ul>			

## 7.0 Implementation Plan

### 7.1 Introduction

Infrastructure development in Nigeria is mainly hindered by challenges that border on inadequate comprehensive legal and regulatory governance framework, poor project preparation, programming and implementation coordination, poor results documentation, very low private sector participation, and huge technical and resource capacity gap. To address these challenges, short and medium-term measures are outlined to accelerate the achievement of desired results on the NIIMP implementation. This would quickly create steam and address structural issues that are critical to sustaining the long-term impact of the NIIMP.

### 7.2 Short Term Measures

#### 7.2.1 Strengthen the Legal Framework for the NIIMP

This Plan is expected to create greater access to new and improved social and economic infrastructure that would support economic recovery, sustained and inclusive growth, increased job creation and poverty reduction. To accelerate the achievement of the plan objectives, a legislation is required to remedy and clear clogs from existing legislations that interfere with accelerated infrastructure development. Table 7.1 shows some legislations that affect NIIMP implementation.

**Table 7.1: Some Legislative challenges to infrastructure development**

Legislation	Sector	Challenges
<b>NNPC Act, Petroleum Act</b>	Energy	<ul style="list-style-type: none"> <li>- Many and complex laws making it challenging for investors.</li> <li>- Little room for states to support investments.</li> </ul>
<b>Land Use Act</b>	All	<ul style="list-style-type: none"> <li>- Creates several bottlenecks that discourage capital inflow.</li> </ul>
<b>Nigerian Mining Corporation</b>	Mining	<ul style="list-style-type: none"> <li>- Prevents private sector involvement.</li> <li>- Corporation has sole responsibility for exploration, prospection, and mining of minerals.</li> </ul>
<b>Nigerian railway Corporation Act, Nigerian Ports Authority Act, National Inland Waterways Act</b>	Transport	<ul style="list-style-type: none"> <li>- Prohibits construction/ extension of some infrastructure (e.g. rail) without Ministerial permission.</li> <li>- Limits private sector participation.</li> </ul>
<b>Federal Highway Act</b>	Transport	<ul style="list-style-type: none"> <li>- Reduced private sector involvement,</li> <li>- Minister of works responsible for all construction and maintenance.</li> </ul>
<b>ICRC Act</b>	All	<ul style="list-style-type: none"> <li>- Emphasize concession contracts to the exclusion of other PPP options.</li> <li>- Unclear role of Commission as facilitator or regulator.</li> <li>- No provision for unsolicited bids of legacy projects.</li> </ul>

**Note:**

- Selected examples highlighted. Total of about 20 acts are in need of adjustments.
- A NIIMP act to consolidate all required challenges should be considered.
- Act will be challenging. However, it may be a faster route than changing respective laws, one-by-one.

### 7. 2.2 Strengthen the Capacity of the Infrastructure Delivery Coordination Unit

Successful implementation of the NIIMP requires a significant effort to co-ordinate and implement the plan. It was in this context that the Infrastructure Delivery Coordinating Unit (IDCU) was established in the Federal Ministry of Finance, Budget and National Planning to provide coordination to the implementation of planned programmes and projects. The Unit is expected to undertake several important functions for the implementation of the NIIMP, which include:

- **Plan monitoring and evaluation:** Develop and implement M&E strategy, collect and analyse data on NIIMP implementation, produce reports and identify implementation areas that require intervention;
- **Programme Management and Development:** Analyse programmes/projects implementation as per asset class/sector, implementing MDAs and other partners, and make recommendations on how to address bottlenecks and improve implementation results;
- **Communication and Capability building:** Communicate progress of the NIIMP internally and externally, support MDAs and other partners with crucial capability building initiatives and facilitate ongoing dialogue with the private sector.
- **Projects Support and Private Sector Investment:** Support high-priority projects and attract private sector investment.

For effective and efficient delivery on these mandates, it is important to reposition and strengthen the capacity of the Unit.

### **7.2.3 Establish a National Council on Infrastructure (NCoInfr)**

For efficient and effective implementation of infrastructure projects, the National Council on Infrastructure [NCoInfr] and a Technical Working Group [TWG] to handle technical level analysis and appraisal of issues and policies to support the delivery of infrastructure projects in the country need to be established. The Council, when established, is expected to meet twice in a year while the TWG meetings will be at least four times in a year. Outside of the quarterly meetings, the TWG could meet to address emerging issues that require urgent attention. This is in conformity with the NIIMP Governance Structure. The Council shall be chaired by the Vice President of the Federal republic, and assisted by the Honourable Minister of Budget and National Planning. The Permanent Secretary, Ministry of Budget & National Planning shall serve as the secretary and head of Council's Secretariat to be domiciled in the Ministry.

### **7.2.4 Ensure Financing for Immediate Projects**

Federal, state, and local governments are expected to employ a standard framework for prioritising projects to ensure the right strategic fit, commercial viability and socio-economic

impact. Priority projects should be refined and submitted by September of every year to ensure that they form part of the succeeding year's annual budget appropriation.

### **7.2.5 Launch Broad Communication Programme**

Continuous engagement and broad communication of the intent and provisions of this document to all stakeholders remain critical for its successful delivery. The Plan must be effectively communicated to at least the following four (4) core stakeholder groups:

- **The public sector, MDAs and States**, to inform them of the required infrastructure investments and co-ordinate their activities to execute/implement;
- **Private sector/potential investors**, to generate investment interest and gather support for implementation;
- **Donors/Development partners**, to co-ordinate the Master Plan with donor activities and obtain their support for implementation; and
- **The general public**, to create awareness and public support for the plan.

## **7.3 Medium-Term Initiatives**

Medium-term initiatives are aimed at addressing three major concerns:

- How to ensure that the right infrastructure projects are prioritized and implemented;
- How to ensure effective project execution; and
- How to align both public and private sector investments with the NIIMP.

Within these context, four medium-term initiatives are crucial for the success of the NIIMP:

- Optimise the public infrastructure governance model;
- Promote alignment/support of the private sector;
- Bridge the capability gap; and
- Develop engineering infrastructure.

### 7.3.1 Optimise the Public Infrastructure Governance Model

Currently, public projects selection process is confronted by many challenges that frequently distorts the original objectives of projects. To address these shortcomings, four (4) reforms to optimise the process include:

- Making mandatory feasibility studies as critical resource for project(s) preparation;
- Restructured budget cycle process to ensure prompt release of project implementation funds;
- Establish a functional and robust Result-Based Monitoring and Evaluation system to support project implementation; and
- Leverage existing public asset management system.

### 7.3.2 Promote Alignment/Support of the Private Sector

As the volume of PPP projects in Nigeria significantly lags those of other successful developing economies, there is an urgent need to align projects with private financing to ramp up investments in the NIIMP. To accelerate result delivery, the current PPP framework should be strengthened to foster increased private sector participation in infrastructure investment. Key activities include:

- **Establish a unit to identify potential PPP projects:**
  - Develop a shortlist of potential projects for PPPs;
  - Refine the process to identify future potential PPP projects; and
  - Introduce standard tools and analytics to ensure all potential PPP projects are assessed on merit.

- **Provide financial incentives for investors:**
  - Set up a government-backed fund (e.g., government resource fund for infrastructure projects) that will offer financial support to PPPs and boost investor confidence;
  - Establish a specialised Development Finance Organisations (like the IDC in South Africa, and IDFC in India) that focuses purely on financing infrastructure projects; and
  - Mobilise additional sources of revenue that can be used to finance PPPs (e.g., through the Sovereign Wealth Fund).
  
- **Refining the legal framework to encourage PPP investment:**
  - Review current legal framework to better cater for PPPs as opposed to the current focus on public sector financing;
  - Institute standard PPP procurement framework based on global best practice;
  - Commit to a competitive transparent procurement process;
  - Offer sector specific tax incentives through reductions or removal of import tariffs, tax breaks, tax credit scheme and subsidies to encourage investments.
  - Offer revenue guarantees to investors for specific projects (e.g. toll roads).

### **7.3.3 Bridge the Capacity and Resource Gap**

Nigeria requires an increase in the number of skilled workers, especially in two areas. First, the construction industry requires an estimated 600,000 additional trained workers over a period of 5 years to build new infrastructure and maintain existing stock. These professionals include architects, building and services engineers, surveyors, technicians and high-skilled artisanal craftsmen. Secondly, the training of additional 7.7 million people in the next 5 years is required to operate this infrastructure. These groups of users include doctors, nurses, policemen, teachers, farmers, etc.

To address the gap in capacity and resources, immediate priority is to ensure that sufficient technical capacity required to build this infrastructure is available by:



- **Building a robust basic skills base**– Focus is to scale up the training capacity of the Industrial Training Fund (ITF) to meet industry needs in terms of workers with basic skills and engage public vocational training institutes and private companies under the supervision and coordination of the ITF. Also, strengthen existing job-creation programmes develop required skills among the unemployed. Priority is on the use of skill development centres in tertiary institutions and vocational centres for a broad-based skill development outcome;
- **Ensure skills transfer** – Focus is to provide incentives to skilled Nigerians in the Diaspora to return and work in infrastructure development. Ensure that infrastructure contracts and conditions of engagement for highly skilled expatriate workers facilitate the transfer of specialised and technical skills through clear contractual agreements for apprenticeship, training, etc.

In the medium-term, the priority is to build Nigeria’s local skill base to meet appropriate quality standards, by:

- **Establishing strong standards** – Introduce international certification standards per sector, regulated and enforced by the ITF and provide additional training programmes to allow experienced workers to acquire certification.
- **Building advanced/specialised skills** – Increase the capacity and quality of current institutions to train the necessary number of specialist engineers, architects, etc. The actions to develop human capacity for building, maintaining and operating infrastructure should be considered in the context of broader reforms within the education system.

#### 7.3.4 Develop Engineering Infrastructure

In order to successfully build the required infrastructure, consideration must be given to the creation of ‘engineering infrastructure’, which comprises of:

- **Infrastructure standards** – Development and enforcement of industry standards is necessary to manage the quality of infrastructure planning, development, operation and maintenance. These standards would provide a basis for audits and validations, as well as package new projects for PPP, ensuring consistent high-quality delivery of infrastructure.

- **Technologies for infrastructure development** – Infrastructure development related research and development would be up-scaled to accelerate the domestication of modern technologies and innovations that ensures cost effective and high-quality infrastructure.
- **Availability of raw materials** - Promotion of local industrial development need to be prioritised to ensure sustainable supply of critical input material for manufacture and construction, among others, in the medium-to long-term. In the short-term, it is important to increase investment in the development of locally available raw materials that are required at significantly higher volumes. For example, Nigeria has the 12<sup>th</sup> largest iron ore deposits in the world but its current steel production is only approximately 0.4 Mtpa, significantly lower than for example, South Africa (8.5 Mtpa), Brazil (33 Mtpa) and India (67 Mtpa). Similarly, considerations should be given to other construction materials, such as asphalt for roads, glass, and other metals. Only in cement industry has Nigeria achieved self-sufficiency to date. However, even in this area, considerations should be given to specialty cement availability.

#### **7.4 Role of the State and Local Governments**

There is need to critically synergize the efforts made at developing public infrastructure utilities at the federal level and at the various sub-national levels (these include the infrastructure development plans and programmes executed by the 36 State Governments and FCT as well as the 774 Local Governments spread across the country).

The 1999 Constitution of the Federal Republic of Nigeria (as amended with all the relevant provisions) has outlined the different areas of responsibilities assigned to each of the tiers of Government. While some responsibilities fall under the Exclusive List, many others are under the Concurrent List (which implies that these are areas that the Federal Government and other Sub-National Governments have varying and joint responsibilities).

The critical functions that need to be carried out at the State and Local government levels include:

- **Development of State Integrated Infrastructure Master Plans (SIIMPs)** – state Government and the FCT are expected to develop their Integrated Infrastructure Master Plans with medium term operational delivery plans in line with their priorities and with

consideration of national strategies/priorities in order to ensure a single seamless effort. The aggregate of these plans will invariably feed into the consolidated NIIMP. The efforts made at the sub-national levels are to be complimentary to the efforts carried out at the national level.

- **Prioritisation of Projects for Implementation** – Following a similar logic as proposed in the prioritisation framework, states and local governments will need to review projects for implementation, and prioritise projects based on their alignment with their local priorities. In doing this, it is expected that preference would be given to projects with the highest socio-economic benefits and the most positive business cases while taking into account the integrated perspective of infrastructure development – (e.g. considerations of inter-modality and inter-sector linkages). For federal projects, it is recommended that feasibility studies should be completed for local projects, to ensure availability of complete and accurate information for project selection.
- **Monitoring and Evaluation of implementation at State and Local Government level** – Infrastructure Delivery Coordination Units are also expected to be set up at the sub-national levels to collect and process data on the implementation of their respective infrastructure plans. This is necessary to review progress, identify areas requiring intervention, and perform post-implementation reviews to ensure completion of projects in line with initial expectations.
- **Programme Management and Development** – the state Infrastructure Delivery Coordination Unit should also analyse execution per asset class/sector, and support collaboration with the Federal Delivery Unit to ensure information exchange and alignment, as well as collect and provide information to the federal government for planning purposes.
- **Communication and Private Sector Collaboration** – the Infrastructure Delivery Coordination Unit will also be responsible for communicating the plans and progress of infrastructure projects internally and externally, and to facilitate ongoing dialogue with the private sector for engagement in sub-national projects. Due to the high level of priority required for infrastructure investments, it is recommended that local

infrastructure development teams should report to the highest level of authority at their respective levels.

The following areas are of importance to the sub-national infrastructure development efforts:

- **Transport:** There is need to construct, rehabilitate and maintain existing Trunk B and C roads nationwide. There is also the need to construct and maintain internal transport systems within the different states that will fit into modern intermodal transport network. Particular attention should be given to development of good quality rural access roads that will aid rural development, facilitate trade and improve economic activities and wellbeing of the people.
- **Energy:** Working in collaboration with relevant federal regulatory authorities, sub-national authorities can develop power generation utilities (including mini and off grid power generation solutions). Also, there is the need for collaboration with the REA to develop efficient and affordable rural access to power.
- **ICT:** Development of broadband ICT infrastructure at the sub-national levels in order to improve and increase Internet connectivity. Also, investment in the development of e-Government platforms across the country is equally important.
- **Social Infrastructure:** Education and health fall under the Concurrent List. The state governments have responsibilities for the development of infrastructure to support basic education and up to the senior secondary school level. They also own and maintain tertiary institutions (Universities, Teaching Hospitals, Polytechnics, Colleges of Education and Technology). Within the health sub-sector, the sub-national governments have responsibilities for the provision Primary Health Care facilities that handle among other maternal and childcare related health care requirements. Some state governments also have tertiary institutions that run Teaching Hospitals which provide tertiary health care services.

- **Housing:** This also falls under the Concurrent List. Under the Land Use Act, the ownership of land in each state is vested in the State Governor. The States issue land titles and maintain land registries that hold such records of assigned land titles and approved surveys. They also issue building permits and have responsibilities to ensure the enforcement of building regulations. The sub-national governments can also make investments in development of Housing Schemes as well as various Urban Renewal, Regeneration and Development Schemes. The purpose of these schemes essentially is targeted at checking the prevalent rural-urban migration that has put pressure on facilities at the designated urban areas.
- **Agriculture, Water Resources and Mining:** The Sub-national governments are also expected to make substantial investments within their localities that are aimed at improving the enabling environment to carry out commercial farming activities. These will seek to improve on the wide-spread subsistence farming that is the current prevalent practice. These can be achieved by investment in the development of a good and well-maintained rural access road networks. These roads will greatly facilitate agricultural activities. Other required investments required will be in the development of crop processing installations, grain storage facilities, agriculture produce markets, abattoirs and meat processing installations etc. Governments at the sub-national levels can make investments, in active collaboration with the River Basin Development Authorities within their catchment's areas, in the development of water harvesting facilities, mini earth dams, and irrigation channels. These water resources development infrastructure utilities will go a long way in boosting agricultural activities within these areas. In the Mining Sub-Sector, and acting within the limits set under the Mining Act, states can make investments in the development of solid mineral resources that are found within their areas.

## Appendix

**Table A1: Priority Road Projects as at 2020.**

S/No.	Route/Description	Project Location	Road Characteristics
<b>National Priority Projects 1: Projects on Critical Economic Routes</b>			
1	Abuja-Abaji Road (Section 1, International Airport Link Road Junction-Sheda Village Junction) C/No.5862	FCT	Dual Carriageway
	Abuja-Abaji Road (Section ii, Sheda Village Junction-Abaji) C/No.5863	FCT	Dual Carriageway
	Abuja-Lokoja Road Section iii (Abaji-Koton karfi) C/No.5884	Kogi	Dual Carriageway
	Abuja-Lokoja Road Section iv (Koton Karfi-Lokoja) C/No.5885	Kogi	Dual Carriageway
2	Kano-Maiduguri Road (Section i, Kano-Wudi-Shuari) C/No.5878	Kano	Dual Carriageway
	Kano-Maiduguri Road (Section ii, Shuari-Azare) C/No.5879	Bauchi	Dual Carriageway
	Kano-Maiduguri Road (Section iii, Azare-Potiskum) C/No.5880	Bauchi	Dual Carriageway
	Kano-Maiduguri Road (Section iv, Potiskum-Damaturu) C/No.5881	Yobe	Dual Carriageway
	Kano-Maiduguri Road (Section v, Damaturu-Maiduguri) C/No.5869	Borno	Dual Carriageway
3	Dualisation of Obajana Junction to Benin Phase 2: Section 1 (Obajana Junction to Okene) C/No.6135	Kogi	Dual Carriageway
	Dualisation of Obajana Junction to Benin Phase 2: Section ii (Okene to Auchi) C/No.6136	Edo	Dual Carriageway
	Dualisation of Obajana Junction to Benin Phase 2: Section iii (Auchi to Ehor) C/No.6137	Edo	Dual Carriageway
	Dualisation of Obajana Junction to Benin Phase 2: Section iv (Ehor-Benin) C/No.6138	Edo	Dual Carriageway

4	Rehabilitation of Enugu-Port Harcourt Dual Carriageway Section I: Lokpanta-Umuahia in Abia State C/No.6208	Enugu	Dual Carriageway
	Rehabilitation of Enugu-Port Harcourt Dual Carriageway Section ii: Umuahia-Aba in Abia State C/No.6209	Abia	Dual Carriageway
	Rehabilitation of Enugu-Port Harcourt Road Section iii: Enugu-Lokpanta C/No.6251	Abia	Dual Carriageway
	Rehabilitation of Enugu-Port Harcourt Road Section iv: Aba-Port Harcourt C/No.6252	Rivers	Dual Carriageway
5	Rehabilitation, Construction & Expansion of Lagos-Shagamu-Ibadan Dual Carriageway Section I in Lagos State C/No.6204	Lagos	Dual Carriageway
	Rehabilitation, Construction & Expansion of Lagos-Shagamu-Ibadan Dual Carriageway Section ii in Oyo State C/No.6205	Oyo	Dual Carriageway
6	Construction of Main Works for The Second Niger Bridge Linking Anambra and Delta States C/No.6475	Anambra/Delta	Single Carriageway
	Early Works iv for the Construction of Second Niger Bridge including Access Roads Phases 2a and 2b in Anambra and Delta States C/No.6296	Anambra/Delta	Single Carriageway
	Construction of Access Road to The Second Niger Bridge Linking Asaba and Onitsha in Delta/Anambra States (Phase 2a)	Anambra/Delta	Single Carriageway
	Construction of Access Road to The Second Niger Bridge Linking Asaba And Onitsha in Delta/Anambra States (Phase 2b)	Anambra	Single Carriageway
7	Reconstruction of The Outstanding Sections of Beni-Ofosu-Ore-Ajebandele-Shagamu Expressway Phase Iii, C/No.6133	Ondo	Dual Carriageway
	Pavement Strengthening and Asphalt Overlay of Ajebandele- Ijebu Ode-Shagamu Road in Ogun State C/No.6241	Ogun	

8	Dualisation of Ibadan-Ilorin Section ii in Oyo State Contract No.1793a	Oyo	Dual Carriageway
9	Rehabilitation of Ilorin-Jebba-Mokwa-Bokani Road in Kwara State C/No.6210	Kwara	Single Carriageway
	Dualization of Ilorin-Jebba-Mokwa/Bokani Junction Road Section I: Ilorin-Jebba in Kwara State C/No.6468	Kwara	Dual Carriageway
	Dualization of Ilorin-Jebba-Mokwa/Bokani Junction Road Section ii: Jebba-Mokwa-Bokani Junction in Kwara and Niger States C/No.6469	Kwara/Niger	Dual Carriageway
10	Rehabilitation of outstanding Section of Onitsha-Enugu Expressway: Amansea-Enugu State Border C/No.6266	Anambra	Dual Carriageway
	Rehabilitation of Enugu bound Carriageway of the Onitsha-Enugu Road, Phase I of Section I) in Anambra State C/No.5929	Anambra	Dual Carriageway
	Rehabilitation of Onitsha-Bound Carriageway of the Onitsha-Enugu Road, Phase I of Section ii) in Anambra State C/No.5929a	Anambra	Dual Carriageway
	Rehabilitation of Onitsha-Enugu Dual Carriageway Section ii (Anambra State Border- Enugu) in Enugu State, C/No. 5988	Enugu	Dual Carriageway
11	Dualization of Kano-Katsina Road Phase 1: Kano Town at Dawanau Roundabout to Katsina State Border in Kano State C/No.6213	Kano	Dual Carriageway
12	Rehabilitation of Calabar-Ugep-Katsina Ala Road Section ii (Ugep-Katsina Ala) in Benue/Cross River States, C/No. 5991	Cross River	Single Carriageway
13	Rehabilitation of Odukpani-Itu-Ikot Ekpene Road in Cross River State Section I: Odukpani-Itu Bridge Head in Cross River State	Cross River	Single Carriageway
14	Construction of Apakun-Murtala Muhammed International Airport Road in Lagos State on Dbfomt Basis Under A PPP Scheme	Lagos	



15	Design Aand Dualization of Otukpo Township Road (General Hospital Otukpo to Enugu Roundabout) C/No.6259	Benue	Dual Carriageway
16	Dualisation Of Onitsha - Owerri Road and Onitsha Eastern Bypass C/No. 5660	Anambra/Imo	Dual Carriageway
17	Rehabilitation of Abuja-Kaduna- Zaria-Kano Road Section i: Abuja-Kaduna in FCT/Kaduna State	FCT/Kaduna	Dual Carriageway
	Rehabilitation of Abuja-Kaduna- Zaria-Kano Road Section ii: Kaduna - Zaria Kaduna State	Kaduna	Dual Carriageway
	Rehabilitation of Abuja-Kaduna- Zaria-Kano Road Section iii: Zaria -Kano in Kaduna/Kano States	Kaduna/Kano	Dual Carriageway
<b>National Priority Projects 2: Projects on Major Branch Routes</b>			
1	Dualisation of Sapele-Ewu Road: Section I: Sapele-Agbor in Delta State C/No. 6249	Delta	Dual Carriageway
	Dualisation of Sapele-Ewu Road: Section ii: Agbor- Ewu in Delta State C/No. 6250	Edo	Dual Carriageway
2	Addendum iii to Dualisation of Lagos-Otta Road in Lagos State C/No.3278a	Lagos	Dual Carriageway
3	Rehabilitation of Hadejia-Nguru Road in Jigawa State Phase ii: Kirikasama- Nguru in Jigawa State C/No. 6072	Jigawa	Single Carriageway
	Rehab. of Nguru-Gashua-Bayamari Rd. Section I (Nguru-Gashua) C/No. 5966	Yobe	Single Carriageway
	Rehabilitation of Nguru-Gashua-Bayamari Road, Section I (Nguru-Gashua) Phase ii (Km 30+000-62+000) in Yobe State C/No. 6348	Yobe	Single Carriageway
	Rehabilitation of Nguru-Gashua-Bayamari Road, Section ii (Gashua-Bayamari) Phase ii (Km 22+000-59+000) in Yobe State C/No.6479	Yobe	Single Carriageway
	Rehab. of Nguru-Gashua-Bayamari Rd. Section ii (Gashua-Bayamari) C/No.6139	Yobe	Single Carriageway
4	Construction of Kaduna Eastern By-Pass, C/No. 5346	Kaduna	Dual Carriageway

5	Construction of Kano Western Bye Pass C/No. 5960	Kano	Dual Carriageway
6	Rehabilitation of Vandeikya-Obudu-Obudu Cattle Ranch Road (Vandeikya-Obudu Section) in Benue State C/No. 6156	Benue	Single Carriageway
7	Rehabilitation of Ilorin-Kabba-Obajana Road in Kwara/ Kogi States C/No. 6212	Kogi	Single Carriageway
	Rehabilitation of Ilorin-Kabba-Obajana Road in Kwara/ Kogi States C/No. 6212a	Kwara	Single Carriageway
8	Construction of Oshogbodo-Oweto Road C/No. 6265	Benue	Single Carriageway
9	Reconstruction of Nasarawa -Loko Road in Nasarawa State C/No. 5846	Nasarawa	Single Carriageway
10	Construction of Panyam-Bokkos-Wamba Road, Wamba-Wanse Road in Nasarawa State C/No.6258	Nasarawa	Single Carriageway
11	Rehabilitation of Okene-Itobe Road in Kogi State C/No.6260	Kogi	Single Carriageway
12	Construction of Bidida-Sacci-Nupeko Road and the Nupeko/Patigi Bridge across River Niger Linking Nupeko And Patigi in Niger/Kwara States C/No. 6648	Niger/Kwara	Single Carriageway
13	Rehabilitation of Kontagora-Rijau-Tunga Magajia Road in Niger State C/No. 6141	Niger	Single Carriageway
14	Construction of Damasak-Dutse (Nigeria)-Diffa (Niger Republic) Road in Borno State C/No. 6071	Borno	Single Carriageway
15	Rehabilitation of Maiduguri-Bama-Gwoza-Mubi-Hong Road Section I: Maiduguri-Bama With Spur to Banki in Borno State, C/No. 5974	Borno	Single Carriageway
16	Rehabilitation of Damaturu-Biu Road in Yobe/Borno States C/No. 6256	Yobe	Single Carriageway
17	Construction of Ningi-Yadagungume-Fuskar Mata Road Phase II in Bauchi State C/No. 6264	Bauchi	Single Carriageway

18	Rehabilitation of Maiduguri-Dikwa-Gamboru Road Section Ii: Dikwa-Gamboru I n Borno State C/No. 6069	Borno	Single Carriageway
19	Design and Construction of Birnin Gwari-Dan Gulbi Road in Kaduna/Zamfara States C/No. 6257	Kaduna/Zamfara	Single Carriageway
20	Rehabilitation of Zaria-Funtua-Gusau-Sokoto-Birnin Kebbi C/No. 6029	Zamfara	Single Carriageway
	Rehabilitation of Zaria-Funtua-Gusau-Sokoto-Birnin Kebbi C/No. 6029a	Zamfara	Single Carriageway
21	Rehabilitation of Funtua - Yashi - Dayi - Kano State Border Road. C/No. 5264	Katsina	Single Carriageway
22	Design and Construction of Road from Wudil-Utai-Acika-Darki-Jigaware in Wudil LGA C/No. 6140	Kano	Single Carriageway
23	Construction of Nsukka - Obollo - Afor - Ehamafu - Nkalagu C/No. 5962	Enugu	Single Carriageway
24	Rehabilitation of Oba-Nnewi Road Section I in Anambra State, C/No. 5986	Anambra	Single Carriageway
	Rehabilitation of Oba-Nnewi Road Section ii in Anambra State, C/No. 5986a	Anambra	Single Carriageway
25	Rehabilitation of Ozalla-Akpugo-Amagunze-Ihuokpara-Nkomoro-Isu-Onicha (Enugu-Onicha) with a spur to Onunweke C/No. 6078	Enugu	Single Carriageway
26	Construction of Yenegwe-Okaki-Kolo-Nembe-Brass Road C/No. 5990	Bayelsa	Single Carriageway
27	Construction of Ikot Ekpene Border-Aba-Owerri Dualization C/No. 6155	Akwa Ibom	Single Carriageway
28	Dualisation of Yenegwe Road Junction-Kolo-Otuoke-Bayelsa Palm (20km) C/No. 6248	Bayelsa	Single Carriageway
29	Dualisation of Ibadan Road (Mayfair Junction)-Lagere-Iremo-Enuwa-Ilesha Bypass C/No. 6080	Oyo	Single Carriageway
30	Dualisation of Ijebu Ode-Ibadan Road Phase I: Rehab of Ijebu-Ode-Mamu Oyo S/B Road in Ogun State C/N. 6082	Ogun	Dual Carriageway
31	Rehabilitation of Oshogbo-Ilesha Road in Osun State C/No. 6075	Osun	Single Carriageway

32	Emergency Repairs of Apapa-Oworonsoki-Ojota Expressway Km 1+900-Km7+080 in Lagos State C/No. 6203	Lagos	Dual Carriageway
33	Dualisation of Abeokuta-Ibadan Road C/No. 6081	Ogun/Oyo	Dual Carriageway
34	Completion of Rehabilitation of Ogbomosho - Oko - Oshogbo Federal Road in Oyo -Osun States Route 35a/F26. C/No. 6031	Oyo/Osun	Single Carriageway
35	Construction/Rehabilitation of Gbongan-Iwo-Oyo Road in Oyo State C/No. 6102	Oyo	Single Carriageway
36	Rehabilitation of Otukpo - Oweto Road in Benue State C/No. 6076	Benue	Single Carriageway
37	Rehabilitation of Otukpa-Ayangba-Ajaokuta-Okene Road in Kogi State C/No. 6030	Kogi	Single Carriageway
38	Rehabilitation of Mararaba-Pambeguwa-Saminak-Jos Road, Section Iii Pambeguwa-Saminaka Road in Kaduna State C/No. 6013	Kaduna	Single Carriageway
39	Rehabilitation of Lafia-Obi-Awe-Tunga Road in Nasarawa State C/No. 6065	Nasarawa	Single Carriageway
40	Potiskum - Udubo - Gamawa - Gamayin Road (R333) Section Ii (Udubo - Gamawa - Gamayin Road) in Bauchi State C/No. 6067	Bauchi	Single Carriageway
41	Rehabilitation of Bauchi-Dass-Tafawa Balewa Road in Bauchi State, C/No. 6068	Bauchi	Single Carriageway
42	Rehabilitation of Funtua--Gusau-Sokoto Road Sections Ii & Iii, C/Nos. 5694 & 5695	Sokoto	Single Carriageway
43	Reinstatement of Washouts at Km 6+750 on the Onitsha Bound Carriageway and two (2nos) others on the Enugu Bound Carriageway (Km 30+400 And 35+325 Rhs) along Onitsha-Enugu Dual Carriageway in Anambra and Enugu States as additional works to the subsisting contract No.5929	Anambra	Dual Carriageway

44	Emergency Reinstatement of Gully Erosion at Km 127+000 Along Benin-Okene Road Route 50(A2) and Km 14+000 Along Auchi Agenebode Road in Edo State C/No.6120	Edo	Single Carriageway
45	Re-Alignment and Construction of Dangerous Curves Between Akwanga And Lafia Road (Km 10+300 - Km 23+600) in Nasarawa State, C/No. 5972	Nasarawa	Single Carriageway
46	Emergency Reinstatement of Collapsed Section of Wukari-Mutum Biyu Road in Taraba State C/No.6123	Taraba	Single Carriageway
47	Potiskum - Udubo - Gamawa - Gamayin Road (R333) Section I (Potiskum - Udubo Road) in Yobe State C/No. 5896	Yobe	Single Carriageway
48	Construction of Takum-Wukari Road Section Ii Phase I: Chanchangi Bridge C/No.6245	Taraba	Single Carriageway
49	Rehabilitation of Owerri - Umuahia Road with Roundabout at Knwogwu: Section ii (Spur at Enyioyugu To Aboh In Imo/Abia States C/No.6126	Imo	Single Carriageway
50	Rehabilitation of Calabar-Itu-Ikot Ekpene-Aba-Owerri Road Section iii: Ikot Ekpene Border - Ikot Umuessien-Aba in Akwa Ibiom State C/No. 6036	Akwa Ibom	Single Carriageway
51	Completion of Auchi Poly-Ekperi-Uzea-Ohe (With Spur to Fugar) Afuda-Usugbenun Road; (Water Works-Ivue-Ibore/Irrua, Section I and Reconstruction of a Pedestrian Bridge at Auchi Poly Main Gate in Edo State C/No.6142	Edo	Single Carriageway
52	Rehabilitation of Umuahia-Ikot Ekpene Road Phase I in Abia and Akwa Ibom States C/No. 6083	Abia	Single Carriageway
53	Design and Construction of Benin/Adumagbae - Egba - Akure Road (25km) C/No.6235	Edo	Single Carriageway
54	Rehabilitation of Yola-Hong-Mubi Road in Adamawa State	Adamawa	Single Carriageway
55	Rehabilitation of Cham-Numan Section of Gombe-Yola Road in Adamawa State C/No.6300	Adamawa	Single Carriageway

<b>National Priority Projects 3: Roads to Refineries, NNPC Depots, Ports and Mineral Producing Areas</b>			
1	Rehabilitation of Apapa - Oshodi Express Way in Lagos Phase ii Sections I & II C/No.6202	Lagos	Dual Carriageway
2	Construction of Bodo-Bonny Road with a Bridge Across the Opobo Channel in Rivers State C/No. 6247	Rivers	Single Carriageway
3	Dualisation Of Suleja-Minna Road in Niger State C/No.6077	Niger	Dual Carriageway
	Dualisation Of Suleja-Minna Road Phase ii C/No.6267 (Km 40+000 - Km 101+000) in Niger State C/No.6267	Niger	Dual Carriageway
4	Construction of Agaie-Katcha-Baro Road in Nigeria State C/No.6254	Niger	Single Carriageway
5	Rehabilitation of Access Roads to NNPC Depot at Ejigbo in Lagos State C/No. 6026	Lagos	Single Carriageway
6	Access Roads to Apapa/Tincan Port, NNPC Depot (Atlass Cove) To Mile 2 C/No. 6005	Lagos	Single Carriageway
7	Rehabilitation of Access Road to Apapa/Tincan Island Port - NNPC Depot in Lagos State C/No.6246	Lagos	Single Carriageway
8	Rehabilitation of Ikorodu Shagamu Road Including Access Road to Mosimi In Lagos State C/No.6253	Lagos	Single Carriageway
	Rehabilitation of Ikorodu Shagamu Road in Lagos State C/No..6289a	Lagos	Single Carriageway
9	Rehabilitation of Access Roads to Eleme Port Harcourt Refinery C/No. 6025	Rivers	Single Carriageway
10	Access Roads to Warri Refinery C/No. 6051	Delta	Single Carriageway
<b>National Priority Projects 4: Roads Through Agricultural Producing Areas</b>			
1	Rehabilitation of 9th Mile-Enugu-Port Harcourt Dual Carriageway in Enugu/Benue States, C/No 6018	Enugu	Dual Carriageway

2	Rehabilitation Of 9th Mile-Oturkpo-Makurdi Road (Otukpa-Oturkpo Section) in Benue State, C/No. 5983	Benue	Single Carriageway
3	Rehabilitation of Sokoto-Tambuwal-Jega-Kontagora-Makera Section I in Sokoto/Kebbi States C/No.6161	Sokoto/Kebbi	Single Carriageway
	Re-Construction of Sokoto-Tambuwal-Jega-Kontagora-Makera Section ii in Niger State C/No.6162	Niger	Single Carriageway
4	Rehabilitation of Wukari-Mutum Biyu-Jalingo-Numan Road Section I: Wukari-Mutum Biyu Road in Taraba State, C/No. 5981	Taraba	Single Carriageway
5	Rehabilitation of Abakaliki-Afikpo Road Section I: Abakaliki-Onueke-Abomega Road in Ebonyi State, C/No. 5989	Ebonyi	Single Carriageway
	Rehabilitation of Abakaliki-Afikpo Road Section II: Abomega-Afikpo With Spur to Ugba-Akam/Ahabba Junction Road in Enugu State, C/No. 5989a	Enugu	Single Carriageway
6	Rehabilitation of Makurdi-Gboko Road (Wannune-Yandev Section) in Benue State C/No. 6159	Benue	Single Carriageway
7	Rehabilitation of Akure-Ondo-Ore C/No.6115	Ondo	Single Carriageway
8	Rehabilitation of Aba-Azumini-Opobo Road: Aba-Azumini Road Section I: (Ch0+500 - Ch13+800) In Abia State	Abia	Single Carriageway
9	Construction of Efire (Ogun State)-Araromi (Ondo State)-Aiyede (Ogun State)-Aiyela (Ondo State)	Ogun/Ondo	Single Carriageway

**Source:** Federal Ministry of Works and Housing

## REVIEW COMMITTEE TECHNICAL WORKING GROUP

i.	<b>Olusola O. Idowu (Mrs.)</b>	-	<b>Permanent Secretary (MBNP), Chairman/ Overall Coordinator</b>
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v.	<b>Prof. Dahiru H. Balami</b>	-	<b>Member</b>
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vii.	<b>Dr. Usenobong Akpan</b>	-	<b>Member</b>
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ix.	<b>Mr. Henry Famakinwa</b>	-	<b>Member</b>
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xi.	<b>Mr. Kenneth Onyemaechi Kwujeli</b>	-	<b>Member</b>
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xv.	<b>Mr. Abdullahi Ahmed J.</b>	-	<b>Member</b>
xvi.	<b>Dr. Obasi Philip Ikechi</b>	-	<b>Member</b>
xvii.	<b>Engr. Adebayo Aderolu</b>	-	<b>Co-opted Member</b>
xviii.	<b>Dr. Kenneth Onye</b>	-	<b>Co-opted Member</b>
xix.	<b>Mr. Godwin Esu</b>	-	<b>Co-opted Member</b>
xx.	<b>Mr. Odu Ada Tony</b>	-	<b>Co-opted Member</b>
xxi.	<b>Mr. Ali A. Garba</b>	-	<b>Co-opted Member</b>
xxii.	<b>Mr. Inuwa A. Tony</b>	-	<b>Co-opted Member</b>
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xxviii.	<b>Mr. Jonah Mshelia</b>
xxix.	<b>Arc. Igboke Augustine Basse</b>
xxx.	<b>Mr. Hassan Mubaraq Bayo</b>
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