



Sectoral Action Plans for  
Nigeria's Nationally  
Determined Contribution  
(NDC) to the United Nations  
Framework Convention on  
Climate Change (UNFCCC)



August 2017



*Empowered lives. Resilient nations.*

**Federal Government of Nigeria, Federal Ministry  
of Environment**

**Confidentiality, copyright & reproduction:**

This report is the Copyright of the Federal Government of Nigeria. It has been prepared with support from the United Nations Development Programme (UNDP). The contents of this report may not be reproduced in whole or in part, nor passed to any organisation or person without the specific prior written permission of the Federal Ministry of Environment.

**FMEEnv Contact:**

Director

Department of Climate Change  
Abuja, Nigeria  
[info@climatechange.gov.ng](mailto:info@climatechange.gov.ng)

# Table of contents

<b>Foreword</b> .....	<b>1</b>
<b>The project</b> .....	<b>2</b>
<b>1 Introduction</b> .....	<b>3</b>
1.1 NDC implementation through sectoral action plans .....	3
1.2 Structure of the document .....	3
<b>2 Background</b> .....	<b>4</b>
2.1 Country context .....	4
2.2 The SDGs and climate change action.....	4
2.3 Vulnerability .....	6
2.4 Vision and development priorities .....	7
<b>3 Nigeria's NDC at a Glance</b> .....	<b>8</b>
3.1 National Context .....	8
3.1.1 National Development Strategy and Planning .....	8
3.1.2 Climate change policy framework .....	9
3.2 Climate change adaptation.....	9
3.3 Climate change mitigation .....	9
3.4 Methodology and Information to facilitate clarity, transparency and understanding .....	11
<b>4 NDC Implementation</b> .....	<b>12</b>
4.1 Introduction.....	12
4.2 The High level Roadmap on Implementation of the NDC .....	12
<b>5 Sectoral Action Plans</b> .....	<b>14</b>
<b>6 Finance</b> .....	<b>15</b>
6.1 Introduction.....	15
6.2 Finance needs .....	15
6.2.1 Context .....	15
6.2.2 Finance needs in Nigeria.....	16
6.3 Finance sources .....	17
6.3.1 Context .....	17
6.3.2 Finance sources in Nigeria.....	19
6.4 Closing the financing gap .....	21
<b>7 Monitoring, Reporting and Verification (MRV)</b> .....	<b>24</b>
7.1 Introduction.....	24
7.2 International Context .....	24
7.3 MRV at the National Level in Nigeria .....	25
7.4 NDC implementation framework .....	26
7.5 Sector-level framework.....	26
7.6 Plan for Updating and Reporting .....	26
<b>8 Recommendations</b> .....	<b>28</b>
<b>9 Appendices</b> .....	<b>30</b>
Appendix 1	Monitoring, Reporting and Verification
Appendix 2	NDC Implementation Action Plan for Agriculture Sector
Appendix 3	NDC Implementation Action Plan for Industry Sector
Appendix 4	NDC Implementation Action Plan for Oil and Gas Sector
Appendix 5	NDC Implementation Action Plan for Power Sector
Appendix 6	NDC Implementation Action Plan for Transport Sector



## Foreword

By Ibrahim Usman Jibril, Honourable Minister of State, Environment



**Ibrahim Usman Jibril**  
Hon. Minister of State  
Federal Ministry of Environment

The Paris Agreement is unquestionably a tremendous opportunity for Nigeria to toe the line of Low Carbon Development with great optimism for the future of the country.

In our Nationally Determined Contribution (NDC) we have unconditionally pledged a 20% emissions reduction below Business as Usual (BAU) by 2030, and a 45% conditional commitment which can be achieved with financial assistance, technology transfer and capacity building from the more advanced and more willing international partners that care a lot about issues of climate change. We took these ambitious pledges to the Paris climate conference in December 2015, demonstrating our commitment to play the lead role on sustainable development. The Sustainable Development Goals (SDGs) are integral to Nigeria's development and fit into our Economic Growth Plan. The mission of this government and our NDC is fully aligned with the SDGs. We are focusing on reducing poverty, increasing food security, creating jobs by diversifying the economy, providing a healthy environment and, importantly, driving economic

development by providing access to energy. My immediate predecessor and team leader, Mrs. Amina Mohammed, made a strong start in taking the first steps to convert Nigeria's NDC ambition into action and I am committed to bridge the task ahead to completion as we domesticate the international debate.

We are committed to transforming our climate action plans into results by turning international debate into pragmatic steps. Full ownership and commitment to the NDC by relevant Ministries, Departments, and Agencies (MDAs) is in fact crucial to delivering on pledges, and essential in order to mobilise the international support, which was part of the Paris package. With this spirit in mind we have prepared an implementation roadmap, and have been working with key MDAs to develop sectoral action plans for the five critical sectors in Nigeria's economy. Again, this is in line with the recently launched Economic Recovery and Growth Plan (ERGP) aimed at bringing the country out of economic recession and leading it to the path of sustainable development.

Internationally, Nigeria has pledged to support the Montreal Protocol, as well as removing ozone-destroying pollutants from our atmosphere, which offers the opportunity to further alleviate planetary warming. The Paris Agreement is succeeding as the climate change and development agenda can no longer be set by the global north for the global south, it has to be set by and for all - and the NDC is Nigeria's own plan of action to contribute to this international discourse. We must use the Paris Agreement to promote a low carbon but high growth development agenda. The development of our country is my highest priority, and for my ministerial team national development and the implementation of our NDC is about leaving no one behind.

We are well aware, however, that everyone has a part to play, and we are ready to be involved to help realise this change. Reform is thriving in Nigeria despite tough economic times and the challenges we are facing as a country. Ongoing inclusive approach, which recognises the importance of national development priorities vital to maintaining the political support needed for NDC realization.

I would like to take a moment here to echo the comments of our President, H.E. Muhammadu Buhari, when he commented on his great optimism on the future of Nigeria and Africa. "I believe that the greatest reason for optimism is in the incredible energy, talent and creativity of our young people, male and female who are completely undeterred by the failures of the past and are daily taking advantage of innovation and technology bringing about Nigeria of our dreams. I am already seeing fantastic stories of innovation coming from our country, such as the rapid emergence of so many off-grid solar initiatives many led by youthful entrepreneurs who think differently and embrace innovation".

The government is looking to matching this entrepreneurial thinking with innovative approach to mobilise finance and investment. Despite a drop in federal revenues we are committing part of the 2017 capital budget to this effort. We are also working hard to attract private sector partnerships in addition to support from our development partners. The 2017 budget will be a green budget to reflect Nigeria's efforts to realising its NDC. In addition, we are set to launch our first ever Sovereign Green Bond in 2017 to fund a pipeline of projects all targeted at reducing emissions towards a greener economy. I urged all sectors to embrace the opportunity provided by the sectoral Action Plans to conceive and implement actions towards a low carbon economic development.

The Paris Agreement is a tremendous opportunity for the people of Nigeria – but only if we seize the opportunity with both hands. We must do that because we have no better option. It is our own contribution to a sustainable economic growth.

## The project

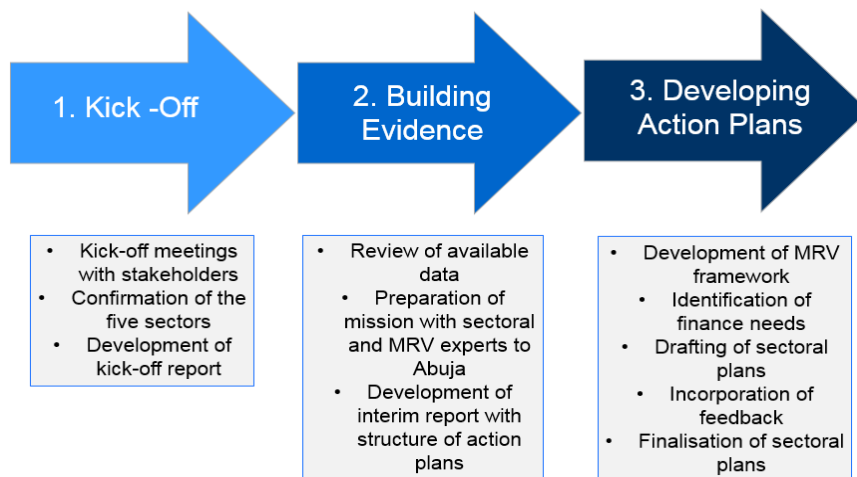
The Government of Nigeria and UNDP have contracted Ricardo Energy & Environment to deliver a component of the **NDC implementation in Nigeria**, focusing on the development of **five sectoral action plans**. Identified priority sectors are: Agriculture; Power generation; Industrial energy efficiency; Oil and gas; and, Transport.

A team of sectoral and national experts have gathered information and consulted with relevant stakeholders, in order to support the development of the action plans. The work has focused on:

- Understanding progress in the sector since the submission of the NDC
- Triangulating findings from a desk review, in particular with regard to baseline and emission projections
- Identifying priority climate change mitigation actions and confirm adaptation priorities
- Understanding whether the sector has identified 'lighthouse projects'
- Gathering indicator data to develop a monitoring, reporting, and verification (MRV) framework for the sector
- Identifying available data for high-level assessment of financial needs.

The project followed three distinct, but interrelated phases for 2016, ahead of COP22 in Marrakech, and the months just after, as displayed in Figure 1 below.

**Figure 1 Project phases**



These action plans have been distributed in draft format for review and comment to a wide range of stakeholders. The authors have welcomed any and all feedback and further information of relevance to the further elaboration and finalisation of the plans.

These plans were prepared by the Federal Ministry of Environment, Department of Climate Change, Federal Republic of Nigeria, from information provided by Ministries, Departments and Agencies (MDAs) and other stakeholders, and from available information in the literature.

# 1 Introduction

## 1.1 NDC implementation through sectoral action plans

In 2015, Nigeria prepared its Intended Nationally Determined Contribution (INDC). Following approval by H.E. President Buhari and submission to the United Nations Framework Convention on Climate Change (UNFCCC), Nigeria presented its INDC at the Conference of Parties (COP) 21 in Paris in December 2015. In March 2017, H.E. President Buhari ratified the Paris Agreement, paving the way for a new era of action on climate change.

The challenge now for all **INDCs is to become NDCs** – specific climate change action plans as opposed to ‘intentions’ – and to put in place frameworks for NDC implementation.

Since submitting the INDC, the government has been very forthcoming in turning ambition into implementable policies. The Federal Ministry of Environment has already developed an NDC implementation roadmap, setting out the requirements for implementation, in addition to roles, responsibilities, and timeframes. The roadmap broadly reflects the ongoing efforts at the international level to streamline NDC implementation and establish the systems and processes that are needed in country to support its development and delivery. Activities are aligned to five ‘pillars’ of NDC implementation framework of mitigation, adaptation, climate finance, MRV and governance. The Ministry is also discussing submission of the NDC and concurrent ratification.

The NDC Implementation plans contained in this document for the five sectors of power, transport, industry, agriculture and oil and gas make large strides in delivering government priorities in a way which is socially and environmentally sustainable. The five NDC sector plans, covering more than 80% of the Nigerian economy and associated emissions, provide further detail on how Nigeria intends to deliver on the contributions detailed in its NDC.

## 1.2 Structure of the document

This document is structured as follows:

- After this introduction, Section 2 provides a background to NDC implementation, alignment with SDGs, the country's vulnerability, and its vision and development priorities
- Section 3 contains a summary of Nigeria's NDC
- Section 4 details Nigeria's plan for NDC implementation, including the High Level Roadmap to guide work across government to take forward the commitments made under the Paris Agreement.
- Section 5 illustrates the structure of the sectoral action plans
- Section 6 provides available international and national information on finance needs, sources, and how to close the financing gap
- Section 7 contains information on Monitoring, Reporting, and Verification (MRV) at the international level and in the Nigeria context
- Section 8 details recommendations for NDC implementation going forward.

## 2 Background

### 2.1 Country context

Nigeria is a lower middle income developing country, with income per capita in 2015 of about \$2,800<sup>1</sup>. In 2014, Nigeria became the largest economy in sub-Saharan Africa<sup>2</sup>. The economy is diversifying and has grown over 6% per year over the past decade. Despite this growth, significant development challenges remain. Food insecurity, poor access to energy, and high unemployment, amongst others, remain principal constraints on economic development, and are of primary concern to the government.

More recently, the collapse in international oil prices, along with other political and economic problems, resulted in a sharp rise in inflation, a shortage of foreign exchange, and a down-turn in growth. The recent steep decline in world oil prices has put pressure on the federal government budget, which continues to depend significantly on export revenues. For the first time since 2004, the economy recorded negative growth in the first quarter of 2016. Additionally, those below the poverty line of US\$1.25 PPP still make up 30% of the population<sup>3</sup>.

The Federal Government of Nigeria's (FGN) vision is to grow the economy and reduce poverty for a more prosperous future for all our citizens. Our goal is ambitious, sustainable economic growth of 5% per year. To meet this goal, the FGN is focused on diversifying the economy, reducing reliance on oil and promoting food, water and energy security.

The Nigerian NDC, therefore, focussed on the delivery of direct development benefits and sustainable growth of the economy. Nigeria unconditionally pledged a 20% reduction on Business as Usual (BAU) emissions by 2030, and a 45% conditional commitment which can be achieved with financial assistance, technology transfer and capacity building. Nigeria took these ambitious pledges to the Paris climate conference last December, showing that it is committed to leading on sustainable development.

### 2.2 The SDGs and climate change action

The Sustainable Development Goals (SDGs) are integral to Nigeria's development, and the mission of this government through the NDC is fully aligned with them. The livelihood of Nigerians is increasingly affected by climate change. The nexus of climate change and other development challenges, such as poverty alleviation, access to modern energy, food security and reducing inequality is complex. This complexity is reflected in the sustainable development goals. Goal number 13 states: "*Take urgent action to combat climate change and its impacts*". At the same time, there is a need to mainstream climate action through the other SDGs and targets to make them 'climate-proof' or 'climate-smart'. The Nigerian government is focusing on reducing poverty, increasing food security, creating jobs by diversifying the economy, providing a healthy environment and, importantly, driving economic development by providing access to energy.

Our ability to mitigate and manage climate impacts will be crucial to our ability to achieve, by 2030, not only SDG 13 on combatting climate change, but a number of other SDGs. Hence, the NDCs provide a bridge between the Paris Agreement and Agenda 2030, and an operational mechanism for countries to transition from the MDGs to the SDGs by 2030.

The salience of climate change for development is exemplified by the existence of carbon sinks in agriculture (Goal 2), the integration of mitigation and health (Goal 3), drivers of mitigation and

---

<sup>1</sup> Source: World Bank, GNI in current US\$

<sup>2</sup> In 2014, the Nigeria GDP was "rebased" to include a greater number of economic activities (46 compared to 33 previously). This improved coverage (including of the informal sector), the inclusion of new industries. Methodological improvements led to significant increases in the contribution of the services sector, manufacturing, construction, and water & electricity. On the other hand, value added by the agricultural and the oil & gas sectors declined notably relative to GDP.

<sup>3</sup> In October 2015, the global poverty line was set at US\$1.90 in 2011 prices. This, however, can be compared to US\$ 1.25 in 2005 prices. The World Bank has not yet published the most recent data for Nigeria.

adaptation in energy (Goal 7) and economic growth (Goal 8), carbon emissions as a reflection of inequality (Goal 10) and decarbonisation of consumption and production patterns (Goal 12)<sup>4</sup>.

There is great convergence between the SDGs and the Paris Agreement<sup>5</sup>: Mitigation and adaptation are taken up in a number of targets under six SDGs other than Goal 13, for instance regarding resilience of the poor (Target 1.5), agricultural practices (Target 2.4), infrastructure (Targets 9.1 and 9.a) and cities and human settlements (Target 11.b). Nevertheless, most of the SDGs and their respective targets fall short of comprehensively promoting co-benefits between action on climate change and other development goals.

**Figure 2 Mapping the NDC implementation modules to the SDGs**

**Table A2: Mapping the NDC implementation modules to the SDGs**

SDG	Governance	Mitigation	Adaptation	Finance	MRV
1. No poverty – end poverty in all its forms everywhere	•		•	•	
2. Zero hunger – end hunger, achieve food security and improved nutrition and promote sustainable agriculture		•	•		
3. Good health and well-being – ensure healthy lives and promote well-being for all at all ages		•	•		
4. Quality education – ensure inclusive and equitable quality education and promote lifelong learning opportunities for all					
5. Gender equality – achieve gender equality and empower all women and girls	•	•	•		
6. Clean water and sanitation – ensure availability and sustainable management of water and sanitation for all		•	•		
7. Affordable and clean energy – ensure access to affordable, reliable, sustainable and modern energy for all		•	•		
8. Decent work and economic growth – promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	•	•	•	•	•
9. Industry, innovation and infrastructure – build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation		•	•	•	
10. Reduced inequalities – reduce inequality within and among countries	•			•	
11. Sustainable cities and communities – make cities and human settlements inclusive, safe, resilient and sustainable	•	•	•	•	•
12. Responsible consumption and production – ensure sustainable consumption and production patterns		•			
13. Climate action – take urgent action to combat climate change and its impacts	•	•	•	•	•
14. Life below water – conserve and sustainably use the oceans, seas and marine resources for sustainable development		•	•		
15. Life on land – protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and reverse land degradation and halt biodiversity loss		•	•		
16. Peace, justice and strong institutions – promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels					•
17. Partnerships for the goals – strengthen the means of implementation and revitalise the global partnership for sustainable development	•			•	•

Source: Ricardo and CDKN (2016)

<sup>4</sup> *Translating an ambitious vision into global transformation: The 2030 Agenda for Sustainable Development* by Markus Loewe / Nicole Rippin (Eds.), DIE 2015.

<sup>5</sup> Northrop, E., H. Biru, S. Lima, M. Bouye, and R. Song. 2016. "Examining the Alignment between the Intended Nationally Determined Contributions and Sustainable Development Goals." Working Paper. Washington, DC: World Resources Institute.



Delivery of the SDGs, the Paris Agreement and the NDC is a task for the entire government. It is, however, important to remember that the UNFCCC and its Paris Agreement are legally binding international treaties, whereas the SDGs are not. The SDGs are normative and were adopted through a resolution by the UN General Assembly<sup>6</sup>. This difference between the two processes is important to acknowledge when assessing the institutional arrangements at the national level, and in terms of budgeting, accountability and reporting obligations.

## 2.3 Vulnerability

Nigeria is very vulnerable to climatic shocks and trends, in particular to floods and droughts. The 2014 World Climate Change Vulnerability Index, classifies Nigeria as one of the ten most vulnerable countries, and Lagos the tenth most vulnerable city in the world<sup>7</sup>.

A 2009 DFID study estimated GDP loss from climate change of between 2-11%, a figure brought into sharp focus by some of the major social and environmental crisis of recent times: the shrinking of Lake Chad and subsequent increase in poverty and attendant insecurity, and the devastating impacts of the 2012 floods. The total value of destroyed infrastructure, physical and durable assets caused by the 2012 floods has been estimated to be ₦1.48 trillion (US\$9.5 billion) or about 2% of the rebased GDP of US\$510 billion<sup>8</sup>. This number alone calls into question the conservative end of the DFID estimate cited above.

Not all segments of the population are, however, equally vulnerable to the impacts of climate change. The UN World Economic and Social Survey 2016 shows that economic, political and social inequalities increase the exposure of the disadvantaged groups of society to climate hazards and their susceptibility to the damages<sup>9</sup>. Importantly, inequality decreases peoples' ability to cope with and recover from the damages caused by climate hazards. The poor are particularly affected, but inequality regarding gender, age, ethnicity, race, religion and geographical location also play a role in determining the exposure, susceptibility and ability of people to cope with and recover from climate hazards.

A 2015 Pew Research Center global attitudes survey found that 65% of Nigerians are very concerned about the threat climate change poses, ahead of global economic instability (48%)<sup>10</sup>. The data encouragingly suggests that more than two thirds of the population think that it is appropriate for the country to take action to reduce its emissions.

Nigeria's vulnerability to climate change may also affect its credit rating. Moody's has measured sovereign debt issuer's vulnerability by "exposure" and "resilience" to climate change. Exposure is determined by location, with sub-Sahara Africa and Asia particularly exposed, and economic diversification, while resilience is measured by adaptive capacity, fiscal flexibility and income levels. In April 2016, Nigeria was rated B1 with a stable outlook<sup>11</sup>.

It is clear then that Nigeria's development goals will be severely undermined unless climate resilience is strengthened across all sectors of the economy. Further sector-specific information is cited in the individual sector plans.

<sup>6</sup> See [http://www.un.org/en/ga/search/view\\_doc.asp?symbol=A/RES/68/309](http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/68/309) (last accessed 9 February 2017).

<sup>7</sup> The index is prepared annually by risk management consultancy Verisk-Maplecroft. See [https://maplecroft.com/about/news/ccvi\\_2013.html](https://maplecroft.com/about/news/ccvi_2013.html) (last accessed on 29 November 2016)

<sup>8</sup> According to the comprehensive Post Disaster Needs Assessment conducted from November 2012 to March 2013 by the National Emergency Management Agency, the floods affected over 7 million people in several States. NEMA estimated the total value of infrastructure, physical and durable assets destroyed at ₦1.48 trillion (US\$9.5 billion) while the total loss across all sectors of the economy was estimated at ₦1.1 trillion (US\$7.3 billion).

<sup>9</sup> See <http://www.un.org/en/development/desa/policy/wess/> (last accessed 28 November 2016)

<sup>10</sup> Pew Research conducts regular polls in Nigeria as part of the global attitudes research program. See <http://www.pewglobal.org/2015/07/14/climate-change-seen-as-top-global-threat/> (last accessed 29 November 2016)

<sup>11</sup> For comparison, Africa's second largest economy South Africa is rated Baa2 – negative and Egypt B3 – stable.

---

## 2.4 Vision and development priorities

The development and budget priorities of the government have been articulated in detail in the 2016 "Budget of Change," presented by HE President Buhari to the National Assembly on 22 December 2015, and in its implementation plan, as well as in the draft 2017-2019 Medium Term Expenditure Framework and Fiscal Strategy.

Nigeria's economy operates against a backdrop of declining crude oil price (from US\$ 114 per barrel in June 2014 to US\$ 38 per barrel by December 2015, slowly recovering to US\$ 55 per barrel in February 2017). In addition to this, the global economic outlook has not been encouraging. There has been a general weakening of economic growth in emerging market economies and security challenges in very many different parts of the world. The above have tremendous effect and influence on the direction of economic development and aspiration the nation is aspiring into.

On the domestic side, challenges including insurgency in parts of the North East, high rate of unemployment (especially among the youth), huge infrastructure and housing deficits, among others, characterise the Nigerian economic landscape. These have imposed significant fiscal strains on Government revenues, as well as other real sector and external account indicators. Government in re-appraising the national economy identified the primary goal of reflating and repositioning the economy for change.

In summary, the President's priorities and key objectives are:

- Ensuring a stable macroeconomic environment for real sector development
- Investments in critical infrastructure, science, technology and innovations that will enhance productivity and lower costs of doing business
- Creating a significant number of jobs to reduce unemployment and underemployment especially among the youth
- Protecting the poor and vulnerable by special social intervention programmes
- Building an economy that is less vulnerable to oil price shocks by vigorously pursuing economic diversification.

## 3 Nigeria's NDC at a Glance



Source: NIAF 2016

### 3.1 National Context

In 2014, Nigeria became the largest economy in sub-Saharan Africa. Having grown over 6% per year for the past decade, it is now a lower middle income developing country, with a GDP per capita of US\$2,950 (2014). Despite this growth, significant challenges remain: food insecurity, poor access to energy, and high unemployment are the principal concerns to the government. The recent sharp decline in global oil price has put significant pressure on federal budgets. The country is also very vulnerable to climate change, with the north of the country particularly affected by drought.

His Excellency President Buhari stated in his inaugural speech that Nigeria is committed to tackling climate change, and the NDC sets out the ambition of sustainably growing Nigeria's economy while reducing carbon pollution. The policies and measures set out in the NDC are development-focused: they contribute to poverty alleviation, increase in social welfare and inclusion, as well as improvement of individual well-being, which includes a healthy environment.

Nigeria has been actively engaged in international climate policy negotiations since it became a Party to the UNFCCC in 1994. The country is host to a number of Clean Development Mechanism Projects, as well as projects funded by the Global Environment Facility.

#### 3.1.1 National Development Strategy and Planning

In recent years, two development strategy documents have directed the development process in Nigeria:

- i. Vision 20:2020. The Federal Government's economic growth plan published in 2009 recognises climate change as a threat to sustainable growth in the coming decades. It sees climate change as a potential driver of "*damaging and irrecoverable effects on infrastructure, food production and water supplies, in addition to precipitating natural resource conflict*".
- ii. Transformation Agenda 2011-2015. The agenda converts the full suite of priority policies into projects in order to ensure consistency and commitment of national development efforts. It identified 1613 projects across 20 ministries.

### 3.1.2 Climate change policy framework

In order to reflect the increasing importance of climate change issues in Nigeria, the Federal Executive Council adopted the Nigeria Climate Change Policy Response and Strategy (2012), with the aim of fostering low-carbon, high growth economic development and building a climate resilient society.

## 3.2 Climate change adaptation

The 2014 World Climate Change Vulnerability Index classifies Nigeria as one of the ten most vulnerable countries in the world. The impacts of climate change in Nigeria vary in extent, severity and intensity, with the north east of the country being the most vulnerable area and the south east the least. Climate change poses a significant threat to the achievement of the country's development goals, and the impacts are strongly felt in the economic sectors and areas of agriculture and food security, water, floods and drought, soil erosion, sea level rise, energy, tourism, and ecosystems.

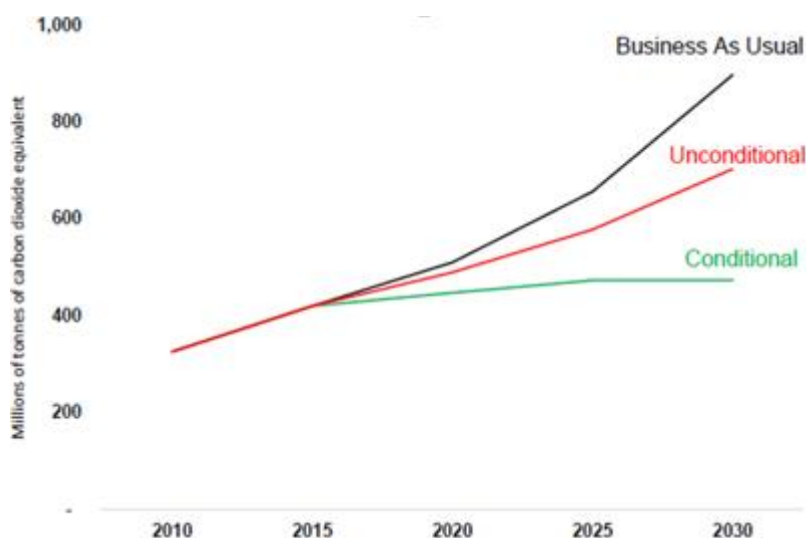
The National Adaptation Strategy and Plan of Action for Climate Change Nigeria (NASPA-CCN 2011) describes Nigeria's adaptation priorities, bringing together existing initiatives and priorities for future action. A set of thirteen sector-specific strategies, policies, programmes and measures have been identified. Additionally, the National Agricultural Resilience Framework (NARF 2014) sets the policy options for this key sector of the country's economy.

## 3.3 Climate change mitigation

Greenhouse gas (GHG) emissions are projected to grow 114% by 2030 to around 900 million tonnes – around 3.4 tonnes for every Nigerian. This scenario assumes an economic growth at 5%, population growing at about 2.5% per year, all Nigerians to have access to electricity (on-grid or off-grid) and demand is met, and industry triples its size.

Nigeria's NDC includes an unconditional contribution to reduce GHG emissions by 20% below BAU projections by 2030, and a conditional contribution of 45%, based on commitment of international support.

**Figure 3 Mitigation contributions**



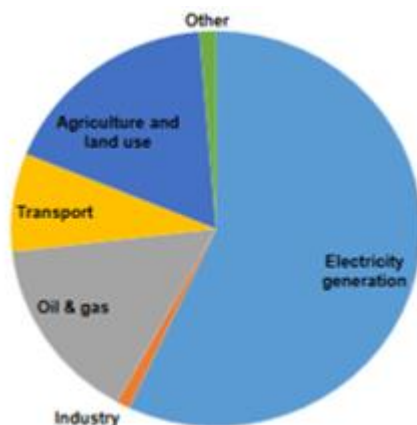


Through modelling and stakeholder engagement, priority measures were identified the following five sectors:

1. Energy
  - Renewable energy, particularly decentralized such as Off-grid solar PV
  - Multi-cycle power stations
  - Scalable power stations of 20-50MW
  - Enforced energy efficiency, 2% per year (30% by 2030)
  - Use of natural gas rather than liquid fuels
2. Gas flaring
  - Improved enforcement of gas flaring restrictions
3. Agriculture and Land Use
  - Climate Smart Agriculture and reforestation
  - Stop using charcoal
4. Industry
  - Benchmarking against international best practice for industrial energy usage
  - Adoption of green technology in industry
5. Transport
  - Modal shift from air to high speed rail
  - Moving freight to rail
  - Upgrading roads
  - Urban transit
  - Toll roads/ road pricing
  - Increasing use of CNG
  - Reform petrol/ diesel subsidies

Figure 4 illustrates where emission reductions may be achieved in the conditional contribution.

**Figure 4 Sources of emissions by sector**



The NDC also highlights the importance of keeping major fast-growing cities (Lagos, Kano, Abuja) liveable, and that new policies and measures need to be assessed against their ability to bring social inclusion and be culturally and gender appropriate, as well as improve livelihood security, increase resilience and reduce emissions.

### 3.4 Methodology and Information to facilitate clarity, transparency and understanding

The NDC contains key data that may enable independent assessment of ambition and compatibility through full transparency, despite the country not having a full GHG inventory (GHGI) yet. Additionally, it provides quantitative and qualitative information to facilitate an assessment by the UNFCCC secretariat and the international community of fairness and ambition.

## 4 NDC Implementation

### 4.1 Introduction

NDC Implementation will fall under the remit of the Nigeria Climate Change Policy Response and Strategy (NCCPRS 2012), with coordination managed by the Department of Climate Change of the Ministry of Environment. The FME is the lead co-ordinating agency for NDC implementation and, as a first step, has re-convened the Inter-Ministerial Committee on Climate Change (ICCC).

The following specific actions have already been taken to kick-start NDC Implementation:

- By early 2017, finalisation of sectoral action plans in five priority areas identified in the NDC.
- Strengthening the enabling framework for NDC implementation, using the High-level NDC Implementation Roadmap prepared by the Inter-Ministerial Committee on Climate Change (ICCC) and summarised below.
- Assessing the need for amendments of the legislative framework in order to facilitate NDC implementation.
- A review of Nigeria's current climate finance landscape, support needs and international funding landscape. Preparation for the issuance of a green bond in the first half of 2017.
- Promotion of public awareness and education material on climate-compatible and low emissions development.
- Implementation of measures to strengthen the GHGI and the monitoring, reporting and verification (MRV) system.
- Training and capacity building.
- The FME as the lead co-ordinating agency for NDC implementation has re-convened the Inter-Ministerial Committee on Climate Change (ICCC).

### 4.2 The High level Roadmap on Implementation of the NDC

As it is the intention of Nigeria to make NDC implementation a central pillar of its development policy, we have seen above that there is an opportunity to integrate climate action and the SDGs with national priorities, policies and plans. Communicating both the vision and results is essential to the long-term success of the NDC, as is changing the 'hearts and minds' within government, of key stakeholders, and of the Nigerian public.

Hence, with technical support from the Nigeria Infrastructure Advisory Facility (NIAF), the FME has developed a **Roadmap to guide NDC implementation** across all government Ministries, Departments, Agencies (MDAs) and all sectors of the economy. It is a working document that will be updated periodically.

The NDC Implementation Roadmap is a practical guide to help all government MDAs develop detailed plans for NDC implementation in the near and long term. It provides guidance on:

- Governance and inter-ministerial coordination
- Stakeholder engagement
- Knowledge management and communications
- Developing MDA and sector-specific action plans
- Financing, including for action plans
- Monitoring, Reporting and Verification (MRV).

The Roadmap describes the most important and immediate next steps:

1. Prepare to ratify the Paris Agreement
2. For all MDAs to include NDC implementation in the 2017 budget
3. Endorse the governance structure and inter-ministerial co-ordination
4. Develop a national stakeholder engagement strategy
5. Develop an NDC communications strategy

6. Agree a plan for developing MDA and sector specific action plans
7. Develop a finance strategy and plan
8. Develop an MRV strategy and plan.

The sector action plans annexed to this report specifically deliver on point 6 of the Roadmap and contribute significantly to points 7 and 8. Work on both finance and MRV have been assigned to other consulting teams and are ongoing.



## 5 Sectoral Action Plans

The final draft sector action plans are attached as annexes to this document. The plans have the following outline structure:

Executive summary
Acronyms
Table of contents
Introduction
Country context
Vision and development priorities
INDC and NDC implementation
Structure of the document
Background
The [ <i>insert</i> ] sector
Policies and plans
Governance and institutions
Box 1: What has changed since NDC submission?
Mitigation
Business as Usual (BAU)
Vision and targets
Mitigation measures
Adaptation
Vulnerability and impacts
Adaptation measures
Financing
Finance needs
Finance sources
'Lighthouse' projects
Monitoring, Reporting and Verification (MRV)
NDC implementation framework
Sector-level framework
Monitoring plan
Governance
Institutional responsibilities
Appendices

Chapters 1 - Introduction and Chapter 6 - Monitoring, Reporting and Verification are the same across the first draft reports and are, therefore, included in this document. Some sector specific information on finance and MRV may, however, be found in the relevant sector plans.

## 6 Finance

### 6.1 Introduction

Finance is critical for the implementation of the mitigation and adaptation actions set out in countries' NDCs. The quality of the available information on NDC financing, in addition to the sophistication of financing plans, vary considerably from country to country.

An assessment of financing needs and sources required to implement Nigeria's NDC is still at very early stages of development. Already, there are funding successes, which include: Bus-based mass transport support for Abuja, Kano and Lagos; Financial intermediation for clean energy and energy efficiency projects; Utility-scale solar PV; and the Nigeria Erosion and Watershed Management Project (NEWMAP). There has also been considerable progress in market-based financing, as evidenced by the recent commitment of the FGN to launch a 'Green Bond' scheme in 2017.

To develop a complete NDC financing strategy for Nigeria, it is necessary to:

1. Estimate financing needs
2. Identify financing sources
3. Understand financing gaps
4. Assess the requirements to close the gap.

The existing capacity of MDAs to assess financing needs and modalities is limited, and has proven to be a limiting factor in preparing this report. A capacity building project focusing on this for 2017-2018 is highly recommended.

In the absence of detailed information specific to Nigeria, the internationally available information of particular relevance to Nigeria is presented here. Furthermore, recommendations on closing the financing gap are provided.

### 6.2 Finance needs

#### 6.2.1 Context

The estimated investment need for mitigation in all developing countries is US\$ 180 – 450 bn/annum, whilst a further US\$ 30-100 bn/year may be needed for adaptation<sup>12</sup>. According to the NDC submissions, total financing needs (both unconditional and conditional) in submitted NDCs is estimated to be more than US\$ 4.4 trillion, or US\$ 349 billion annually<sup>13</sup>. These numbers are, however, highly uncertain.

Assessing financing needs would need to include identifying the cost for components within each action, including upfront capital costs (e.g. infrastructure costs), ongoing maintenance costs, in addition to capacity building or training, and human resources needed to implement the action.

It is expected that the approach for costing measures would differ by sector, and it is recommended that the process begins with a desk review. For example, costing of climate smart agriculture-related interventions will be based on an assessment of similar actions previously completed within the country (whether at national or sub-national level), as well as reviewing how relevant peer countries may have costed similar actions, to inform the cost estimate. Costing of mitigation measures in other more technology-intensive sectors would rely on data being made available at the industry level.

It is also important to note that costs for some actions may change over time; it may be relevant to revise cost estimates when and as new information comes to light. For example, technology costs may decrease over time (a recent example are the rapid cost reduction and efficiency improvement of solar PV and wind turbine technology), or barriers to uptake of climate-friendly practices are being removed by relevant policies. We therefore recommend, once a financing needs assessment has been completed, that there is a built-in update procedure.

<sup>12</sup> Vivid Economics. (2016), Climate finance: Priority funds for Nigeria and project selection. NIAF

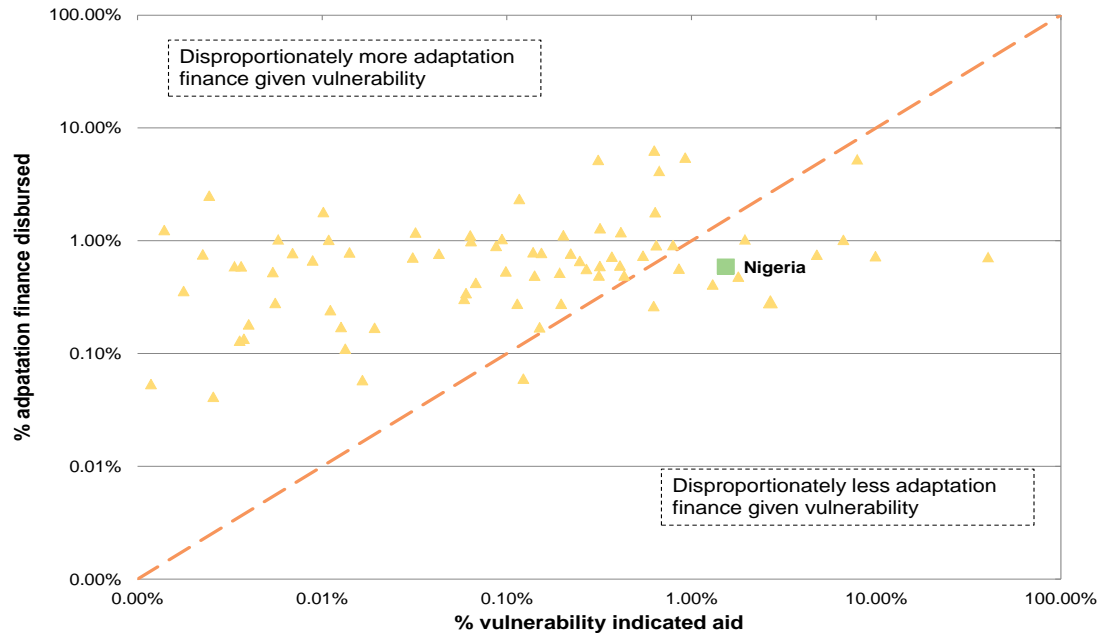
<sup>13</sup> Weischer et al. (2016), Investing in Ambition: Analysis of the financial aspects in (Intended) Nationally Determined Contributions, Perspectives

## 6.2.2 Finance needs in Nigeria

Nigeria's access to climate finance has been rather low relative to the country's vulnerability and emissions profile, as evidenced by the research illustrated below.

Firstly, the country it has received disproportionately less adaptation finance relative to its vulnerability (Figure 5).

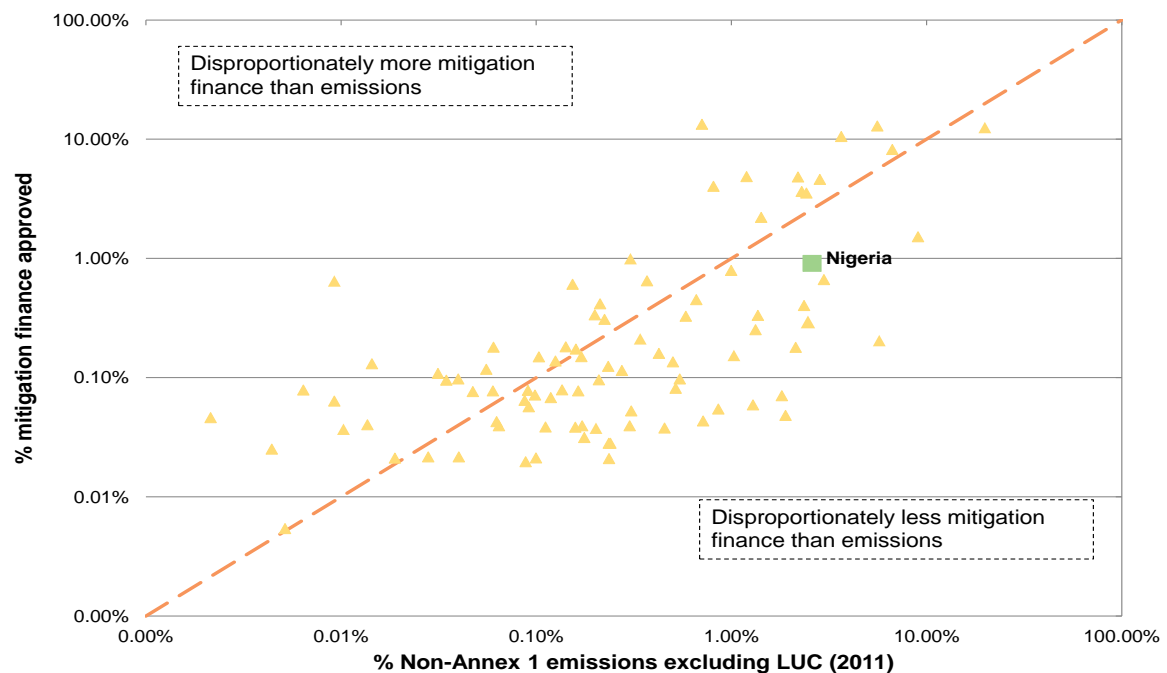
**Figure 5 Adaptation finance vs vulnerability**



Source: *Climatefundsupdate.org, Wheeler et al, Vivid Economics*

Secondly, Nigeria has acquired disproportionately less mitigation funds, compared to its emissions profile (Figure 6).

**Figure 6 Mitigation finance vs emissions**



**Box 1. NDC economics**

The measures included in the Nigeria NDC were the outcome of a multi-criteria prioritisation exercise, using the following eight criteria: Cost effectiveness; mitigation potential; Poverty alleviation and job creation; Feasibility of implementation; Short-term results; Gender and social inclusion; Health and air quality; Land (degradation) and water quality, including deforestation. This quantified assessment excluded significant non-economic and indirect benefits, such as improved health and productivity from reduced pollution. Yet, a full quantification of these development benefits or indeed a robust calculation of the gross costs and investments required for the unconditional contribution under the NDC were not possible on the basis of the existing data. The sector plans contain significant new information, based on comparative international data, on the investment needs of specific measures.

Further calculations concerning individual measures can be found in the 2013 World Bank report<sup>14</sup>. Significant new analysis would be required to draw economy-wide conclusions. For example, the efficiency of renewables technology has greatly improved in recent years, whereas the cost has significantly dropped. This has profound positive impacts on the electricity sector mitigation potential.

Cost as such is, however, not the greatest hurdle. Key to investment in climate action is a sustained enhancement of the enabling environment for investment in development in general, as well as reducing the cost of capital across the economy. This is particularly true in the energy sector, and further detailed in the relevant action plan.

Finally, the Nigeria NDC did not quantify the cost of climate inaction. Economists, however argue that the costs of climate action today will be dwarfed by the costs that lie ahead. They, therefore, recommend utilizing a social cost of carbon in assessing the long-term cost-effectiveness of policies and measures that are not cost-effective today, as these could deliver greater climate and other benefits in the medium to long term. The urgent challenge is that in the current fiscal situation those measures that require large upfront investment, even if cost effective over the life of the investment, need to be carefully reviewed before being implemented. Many projects can only be implemented with significant international support, including bilateral and multilateral support under the aegis of the Paris Agreement.

## 6.3 Finance sources

### 6.3.1 Context

The ambitious goals of Agenda 2030 and the Paris Agreement on climate change have not yet been matched by an equally ambitious financing plan: both public and private financing for sustainable development are underperforming relative to expectations and needs.

It is acknowledged that the global climate finance architecture is complex, as finance is channelled both through multilateral, bilateral and private channels. In addition, a number of countries have set up, with varying degree of success, their own national climate funds to access finance and to channel it to different sectors and sub-national institutions (such as Rwanda's FONERWA, Bangladesh's Climate Change Trust Fund, Indonesia's Climate Change Trust Fund (ICCTF)).

As part of the Paris outcome, developed countries were urged to scale-up their level of support with a concrete roadmap to achieve the goal of mobilising US\$ 100 billion/year by 2020 for climate action in developing countries. There are a number of ways to source and channel funds for mitigation and adaptation.

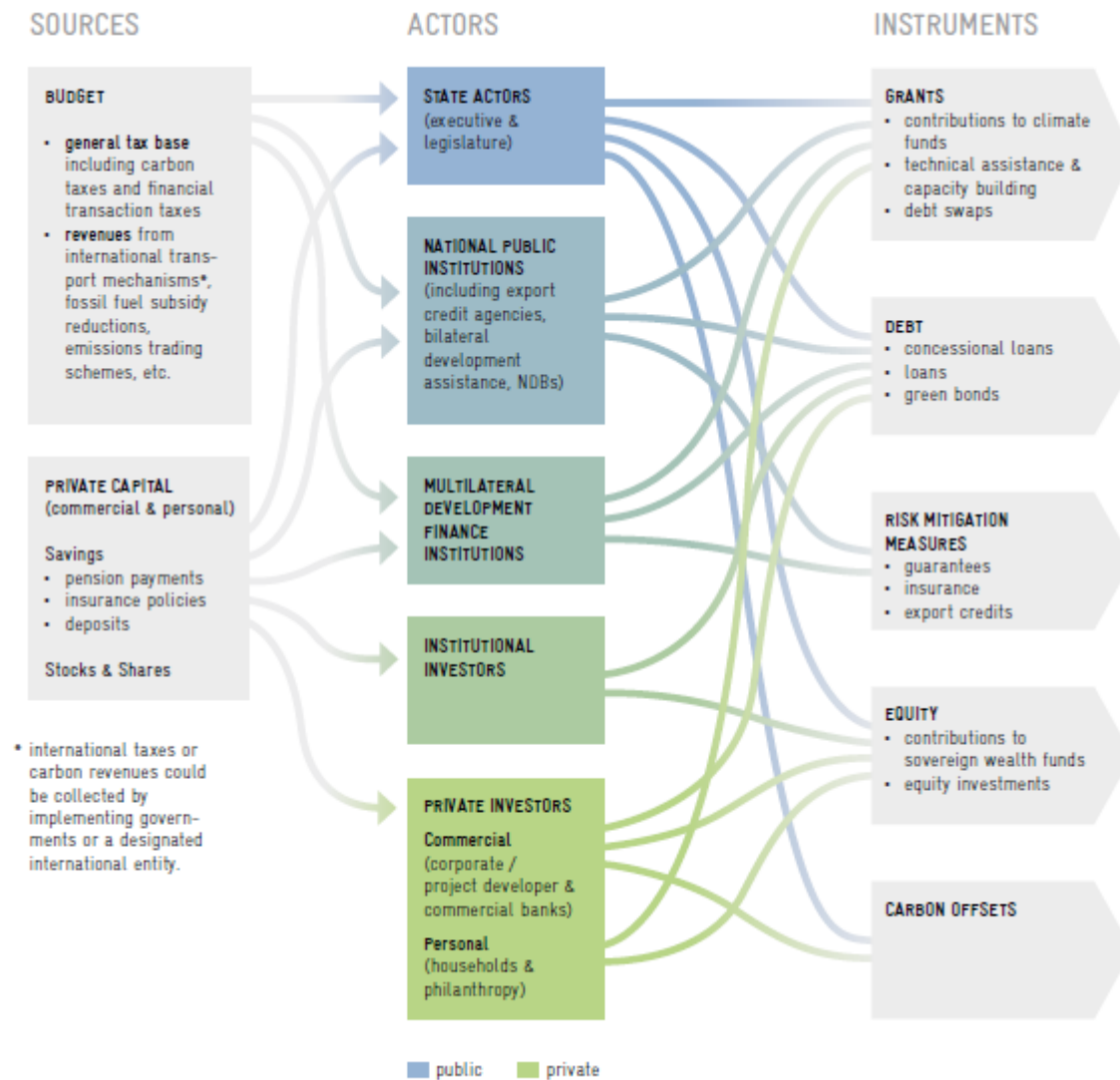
Figure 7 maps out the different sources, actors, and instruments available to fund mitigation and adaptation measures<sup>15</sup>.

<sup>14</sup> Cervigni et al. (2013). Toward Climate-Resilient Development in Nigeria, World Bank

<sup>15</sup> Source: CICERO (2015). Background Report on Long-term Climate Finance, CICERO and Climate Policy Initiative.



Figure 7 Mapping of climate finance channels



Source: CICERO (2015)

Sources are broadly divided into budget (general tax base or other) and private capital from commercial or personal sources. These sources blend in a number of ways to fund actors (state actors, national public institutions, multilateral development finance institutions, institutional investors, and private investors). Financing instruments vary from grants, to debt, risk mitigation measures, equity, and carbon offsets.

In particular:

- **Public finance** is a fundamental driver for climate change financing and investment. It provides direct support to activities, and also allows the government to multiply its resources through leveraging private sector investment. In the case of a sovereign debt financed investment, the cost of capital will be significantly lower than if the investor were a private entity<sup>16</sup>. Even without providing debt financing, government can significantly reduce investment cost / risk by acting as first loss guarantor or by taking a small equity share in the investment.
- **Concessional loans** by development finance institutions can reduce financing costs below the commercial rates available in many developing countries and play a catalytic role in triggering climate friendly investments without crowding out private actors. In fact, climate

<sup>16</sup> On 10 February 2017, the FNG announced that a EUR 1 billion bond with 15 year maturity would bear 7.875% interest and had been widely oversubscribed. This compares with an overnight interest rate on that date of 11.67%.

investments present the whole range of risk profiles and could, therefore, interest a variety of financial players, from investors with a low tolerance of risk, such as institutional investors like pension funds, to ones who are prepared to accept a high risk for higher expected gains, such as venture capitalists.

- **Private sector investment** is key to achieving climate change targets. Climate change cannot be managed without a strong engagement from the private sector – it is recognised that more than 80% of investments required for climate change will need to be privately funded<sup>17</sup>. One important potential investor is the domestic pension fund industry, with an estimated US\$ 70 billion in assets. The Nigerian Pension Commission has stated that pension funds have to play a more active role in the economic development of the nation by, for instance, assisting in solving the huge infrastructure gaps in terms of roads, power supply and housing. However, such investments must be through safe investment vehicles.

### 6.3.2 Finance sources in Nigeria

Despite a drop in federal revenues Nigeria is committing part of the 2017 capital budget to this effort. It also works hard to attract private sector partnerships, in addition to support from development partners. The 2017 budget will be a green budget to reflect Nigeria's efforts to realising our NDC. In addition, Nigeria is set to launch its first ever Green Bond in the first quarter of 2017, to fund a pipeline of projects all targeted at reducing emissions towards a greener economy. This must be achieved against the backdrop of significant challenges facing the country, with the economy in recession, declining oil production and fuel availability, and its knock on impacts on public funds.

Specifically, Nigeria has made some progress in work on **mainstreaming climate change into the budget** process, in alignment with planning. Public sector financing is the main source of funds for implementing development policy and plans and channelled through Government institutions, reflected in national Medium-Term Expenditure Frameworks (MTEF) and annual budgets. Initial work has been carried out to identify the climate change-relevant budget allocation for a number of sectors. A full Climate Public Expenditure and Institutional Review (CPEIR) has not been carried out yet.

Additionally, as part of its developmental role, the Central Bank of Nigeria (CBN) has established the Small and Medium Enterprises Credit Guarantee Scheme (SMECGS), for promoting **access to credit** by SMEs in Nigeria. The activities to be covered under the Scheme are: (i) Manufacturing; (ii) Agricultural Value Chain; (iii) Educational Institutions; and, (iv) Any other activity as may be specified by the Managing Agent from time to time.

Whilst a holistic approach is important, balancing allocation of public funds, attracting private finance and leveraging international climate funds, work carried out by Vivid Economics/NIAF<sup>18</sup> has resulted in the identification of those **climate funds** representing the best immediate opportunity for Nigeria for a number of reasons:

- Dedicated climate funds typically allocate funding to projects via a transparent allocation process
- Recipient countries submit project proposals to the fund which demonstrate how the project contributes to achieving the fund's strategic objectives
- The fund reviews each proposal and those that score the highest in a given funding round are approved for finance
- They are also expected to grow significantly over time.

Whilst it is important to ensure that there is adequate *volume* of funds, recent work in Nigeria has also highlighted the importance of ensuring *quality* of funds. Quality funds have as criteria ensuring that development progress is made on the side of the beneficiary, and funders will see development goals achieved and will be more able to justify their support. Hence, quality influences the prioritisation of funding sources. Seven priority funds have been identified, based on:

- Eligibility of Nigeria to apply
- Explicit geographical focus on Nigeria and/or sub-Saharan Africa

<sup>17</sup> Private sector investments for mitigation have, so far, been more successful than for adaptation, in particular due to the fact that most climate adaptation interventions are considered a 'public good', with limited profitability and too high risks for private sector investors, leading to limited attractiveness.

<sup>18</sup> Vivid Economics. (2016) Climate finance: Priority funds for Nigeria and project selection, NIAF

- Amount of funding pledged and deposited
- Alignment of strategic objectives with MDA projects

The seven prioritised funds are: the Green Climate Fund (GCF), Adaptation Fund (AF), NAMA facility, International Fund for Agricultural Development (IFAD), International Climate Initiative (German IKI), Global Environment Facility (GEF), and the Special Climate Change Fund (SCCF, GEF managed). The most appropriate fund for a particular project or program will depend on a number of criteria.

There are a number of other potential **instruments and funds** that Nigeria is considering or could potentially consider.

- Nigeria is undergoing a process of issuing Green Bonds. Additional information is available in the finance section of the Power Sector Plan and Box 2.
- Microfinance, despite its potential shortcomings, is considered a good funding mechanism in particular for climate change adaptation. There is some localised evidence that microfinance facilitates coping by reducing sensitivity to environmental and climate hazards<sup>19</sup>.
- The Climate Finance Lab is a global initiative that supports the identification and piloting of cutting edge climate finance instruments (Table 1). It aims to drive billions of dollars of private investment into climate change mitigation and adaptation in developing countries<sup>20</sup>.
- The FGN has established the Nigeria Sovereign Investment Authority, which makes significant long-term investments, including in infrastructure, through three funds<sup>21</sup>. These could be leveraged to support the objectives of the NDC.

**Box 2: Key international figures on green bonds<sup>22</sup>**

- The climate-aligned bond market amounts to US\$ 694bn outstanding
- Labelled green bond market stands at US\$118bn outstanding (17% of total)
- US\$ 576bn outstanding is currently not labelled as green but is climate-aligned
- At 67%, low-carbon transport is the dominant theme
- It's a long dated market: 70% of bonds have tenures of 10 years or more

<sup>19</sup> Fenton et al. (2017). The Role of Microfinance in Household Livelihood Adaptation in Satkhira District, Southwest Bangladesh. World Development

<sup>20</sup> Buchner et al. (2014). Global Innovation Lab for Climate Finance: An overview. CPI

<sup>21</sup> <http://nsia.com.ng/overview/>

<sup>22</sup> Climate Bonds Initiative (CBI) (2016). Bonds and Climate Change: the State of the Market. CBI

**Table 1 Summary of CPI's Lab Instruments**

Lab instrument
<u>Renewable Energy Platform for Institutional Investors (REPIN)</u> To stimulate renewable energy deal flow and engage institutional investors to increase overall financing at cheaper costs
<u>Long-term currency swap</u> To lower the cost of financing and increase private finance flows to developing countries by mitigating foreign exchange risk for renewable energy projects
<u>Insurance for energy savings</u> To provide assurance that energy efficiency projects will generate financial savings
<u>Climate Development and Finance Facility (CDFF)</u> To fast track project finance for climate projects
<u>Debt fund for prepaid energy access</u> To provide off-grid entry-level renewable home power to five million isolated homes in five years
<u>Global Renewable Energy Power Supplies (GRIPS)</u> To bring renewable energy production and storage to off-grid African industries
<u>Agriculture Supply Chain Adaptation Facility (ASCAF)</u> To improve the climate resilience of agricultural supply chains

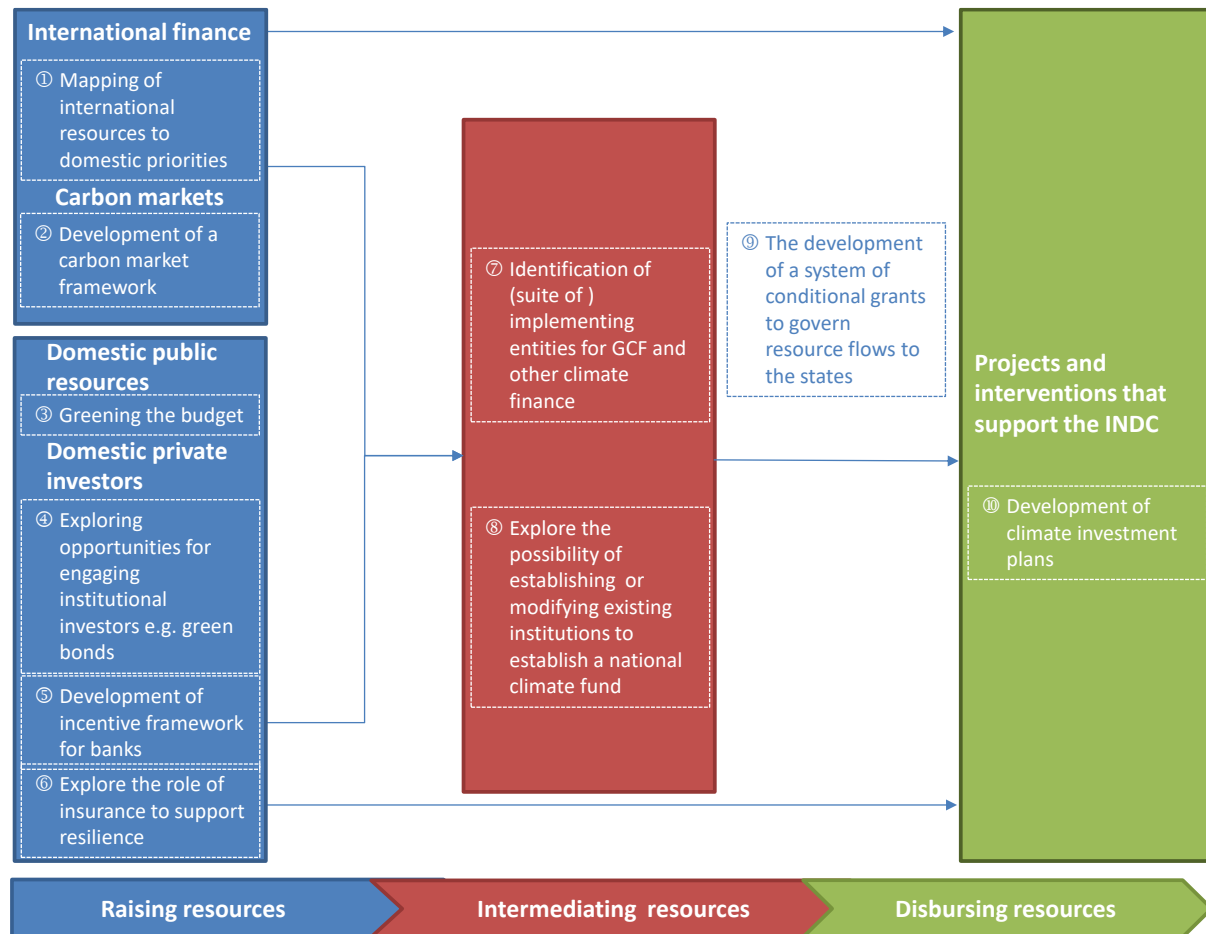
Source: Buchner et al. (2014)

## 6.4 Closing the financing gap

Once the financing gap has been identified, there is the need to assess the amount and type of support required to close the gap through capacity building, technical assistance, and seed finance, and the likely type of funding source (government, bilateral and multilateral funders and private sector).

The NDC implementation Roadmap, developed through the DFID-funded NIAF programme, has identified a number of priority activities to be undertaken in the next months and years to support the delivery of NDC – illustrated in Figure 8.

Figure 8 Actions for financing Nigeria's NDC



- Actions related to raising resources: The prime focus will be on raising additional resources to support the NDC. These will need to come from both the public and private sectors, both domestic and internationally. Six specific, concrete actions are identified.
- Actions to assist with intermediating resources: As well as looking to increase the quantity of finance directed towards the NDC, Nigeria should also consider ways to increase the quality of those flows, as indicated above. There are two key opportunities that might be pursued in the near-medium term that offer both the potential to increase national ownership of financial resources used to support the NDC, and allow national expertise and experience to be utilised.
- Actions to assist with disbursing resources: Finally, Nigeria should also ensure that resources flow to the right projects and activities following efficient and transparent processes. Two key actions will help the country in disbursing resources appropriately.

**Box 3 Developing bankable projects**

Nigeria might require a diverse range of advice to enable projects to be made bankable. The advice might relate to:

Pipeline development:

- The ability to undertake financial and technology needs assessments across the country's priority sectors, to assess where efforts need to be focused and ensure projects are robust
- Technical understanding of available technologies to ensure the most suitable and effective technology is being used
- Financial modelling and cost benefit analysis expertise to determine the financial feasibility of the proposed projects, and ensure projects stay within the budget
- Business case and project concept note writing skills to ensure the most effective outcomes for implemented projects.

Development of concept notes and funding proposals which typically address the following concerns:

- Is the technical solution well thought through and does the technology have a track record?
- Are there the skills available within or outside the country to develop the project?
- What remedies are available if projects are poorly built or operating costs are higher than expected (e.g. enforceable performance bonds from construction companies)?
- Where will revenues to pay financiers come from (e.g. sales to customers, government support, concessions)?
- What reassurance can be given that the revenues will be achieved (e.g. additional Government support, Government backed guarantees and the credit rating of the Government, minimum price agreements and realistic demand forecasts)?



## 7 Monitoring, Reporting and Verification (MRV)

### 7.1 Introduction

Monitoring, Reporting and Verification (MRV) is the mechanism through which progress towards achieving climate change related targets and commitments is tracked. In essence it refers to tracking the implementation of measures necessary to achieve the commitments/targets and the progress towards them. In turn this provides a clear line of sight towards achieving GHG emissions reductions or strengthening adaptation action towards mitigating the impacts of climate change. Very specifically it relates to tracking the specific measures that have been identified within Nigeria's NDC, for each sector.

While the Paris Agreement specifies at a very general level which information should be reported regularly (at least biennially) from 2020, the detailed reporting requirements remain to be agreed. At the national level, there are no specific definitions for either what constitutes 'MRV' or indeed what specific provisions or parameters should be included within an MRV system or framework. This lack of a strict definition allows a great deal of flexibility in the way countries develop their MRV systems, enabling them to construct them so as to include tracking mechanisms and datasets that best suit their individual circumstances and culture of political decision-making. For example this can include aligning with specific programmes or policy 'packages' (such as those defined within an NDC), specific structural or governance frameworks, stakeholders and available data.

The approach to defining the NDC MRV framework for Nigeria, therefore, seeks to use this flexibility to develop an approach which best suits the individual circumstances of the NDC, across each sector. It also seeks to ensure and enable linkage with Nigeria's National MRV framework, which is currently under development.

### 7.2 International Context

Few provisions and reporting requirements have thus far been put in place by the UNFCCC, particularly for non-Annex 1 countries, as outlined above. However, several outline requirements were agreed at COP21<sup>23</sup> in Paris in 2015. Countries should report, at least every two years:

- A national greenhouse gas inventory (GHGI)
- Information allowing to understand progress towards their NDC target. This is generally interpreted as information on the implementation and impacts of mitigation actions – and adaptation actions as well, if the NDC included adaptation targets
- Information on support (climate finance, capacity building and technology transfer) received as well as support required in order to achieve the commitments in the NDC

While details of reporting remain to be agreed, it becomes apparent that the information required generally coincides with information already provided by non-Annex I countries in their Biennial Update Reports (BURs). The only exception is adaptation, which is not reported in BURs.

The Paris Agreement also foresees a review process likely similar to the currently existing International Consultation and Analysis (ICA)<sup>24</sup> process for BURs, which enables countries to share best practice and collaboratively build their capacity in relation to climate change assessment, policy development and MRV.

The detailed requirements to be agreed should consider experiences made with current MRV processes, like the reporting of National Communication, BURs and the ICA process.

On this basis, it seems the best way forward to construct a system which allows Nigeria to track progress and steer actively towards its NDC targets in the most efficient way possible considering its national circumstances and institutional structures, while at the same time ensuring compliance with the likely international requirements.

<sup>23</sup> [https://unfccc.int/files/meetings/paris\\_nov\\_2015/application/pdf/paris\\_agreement\\_english\\_.pdf](https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf)

<sup>24</sup> [https://unfccc.int/files/national\\_reports/non-annex\\_i\\_parties/ica/application/pdf/ica\\_booklet.pdf](https://unfccc.int/files/national_reports/non-annex_i_parties/ica/application/pdf/ica_booklet.pdf)

## 7.3 MRV at the National Level in Nigeria

A national MRV framework is currently under development in Nigeria, as part of a wider project to develop the country's first BUR. The expected development timeline for this is broadly the same as that for the NDC MRV framework being developed under this project. With this being the situation, there is some difficulty in specifically aligning the two projects. Indeed much of the MRV thinking and development under this project is likely to shape the development of the national framework. However, to ensure greatest benefit, the two teams have sought to share as much information as possible.

Ideally, the process would have taken place the other way around, with the national framework informing the structure of the NDC MRV framework. The national framework will set out the overarching structure, the governance framework and the associated roles and responsibilities of organisations involved, as well as reporting, data and information flows between these. The NDC MRV framework must then align with and be able to operate within this high level structure. A good analogy to explain this might be to consider the national MRV framework as the construction of a road network, whilst the NDC MRV framework involves choosing the vehicles to travel on the roads and erecting road signs to guide them.

**Recommendation:** Undertake a review of the NDC MRV framework once the national MRV framework is developed to ensure there is alignment in terms of structure, governance, organisational roles and responsibilities, and data flows.

We have sought to address this challenge in two ways. Firstly to maintain close contact with the project that is developing the national MRV framework. However, progress within, and/or information made available by, this project has been minimal and the project is looking to the work here to inform it. Secondly the NDC MRV system itself will be developed so as to align with the generic structure for what a national MRV system will look like. Whilst there is no set 'requirements', a wide range of guidance on national MRV framework development exists which the project team are either aware of or have been directly involved in developing. In addition the project team have specific experience of helping a number of different countries develop national MRV frameworks and hence can apply this knowledge here.

Crucially the NDC MRV framework we have developed provides the granularity that will sit within the national framework including specific indicators and parameters for tracking action. It therefore does not seek to repeat the more structural development of the wider system that will be defined in the national framework. We therefore anticipate that the NDC MRV framework developed here can be integrated into the national framework in a relatively straight forward manner and will require only minor modification thereafter.

Alongside the project to develop the national MRV framework, another project, again forming part of the development of the BUR, is updating Nigeria's national GHGI. A GHGI has previously been developed, however, this work was completed in 2002 with the latest emissions year being 2000<sup>25</sup>. The GHGI is very relevant to the development of the NDC MRV framework. It will form perhaps the most important source of data that will underpin the NDC MRV framework both in terms of its outputs (i.e. sector and sub-sector level GHG emissions data) and constituent datasets. Further detail on how it fits into the NDC MRV framework and what data will be used is provided in the following section.

**Recommendation:** Ensure a detailed review of the updated national GHGI for Nigeria and its constituent datasets is undertaken once it is completed. This may identify additional datasets that can either be applied to existing indicators or to develop additional ones.

A similar issue, in terms of this project being undertaken concurrently to this one, is relevant here. The project team have sought to link closely with the GHGI update project in order to understand and access data as it is developed. However, it is recommended that a further, more detailed review of the final GHGI and its constituent datasets is undertaken once it is updated. This may identify additional datasets that can be either applied to existing indicators or used to develop additional ones.

---

<sup>25</sup> Obioh, I. B. 2003. Trends in Greenhouse Gases Emissions in Nigeria 1988-2000. Canada-Nigeria Climate Change Capacity Development Project.

## 7.4 NDC implementation framework

In tracking progress towards a mitigation target one needs to understand how national and sectoral GHG emission levels develop – i.e. whether they develop in a way allowing to meet the target set. However, looking at emission levels alone, does not provide an understanding of why emissions rise or fall and how mitigation actions have contributed to the development and – most importantly – if GHG emissions do not develop as desired, how existing mitigation actions might be adjusted or which new mitigation actions need to be introduced to ensure GHG emissions develop as desired. Calculating achieved GHG reductions for individual mitigation measures brings much uncertainty, as reductions are usually calculated against a baseline, i.e. a theoretical scenario. Within one sector there might also be several mitigation actions which overlap in some way, which makes the calculation of reductions for one single measures yet more uncertain.

For this reason we recommend using three levels or “tiers” of indicators:

- Tier 1: GHG emission levels at the sectoral and potentially sub-sectoral level.
- Tier 2: Drivers of GHG emissions at the sectoral or sub-sectoral level, e.g. sectoral energy consumption, km driven per year and person as an average. This information helps understand why the GHG emission levels have changed the way they have.
- Tier 3: Indicators related to the design and implementation of mitigation actions (e.g. number of energy-efficient cooking stoves provided) and the design and implementation of the legal framework related to climate change (e.g. the design of a building code requiring energy-efficiency of buildings).

This approach is taken by a number of other countries, such as in the UK to track progress against delivering defined carbon budgets and in South Africa to track mitigation and adaptation frameworks under its Climate Change Monitoring and Evaluation System<sup>26</sup>. Indeed the approach recommended here is aligned closely with the South Africa system.

The tiered framework is described in detail in Annex 2.

## 7.5 Sector-level framework

A number of indicators, based in the approach and structure outlined above, have been developed for each sector. These are presented in the attached sector action plans (Annex 1). Taken together they provide a basis for tracking progress on reducing Nigeria's GHG emissions and determining the effectiveness of respective policies and measures in helping to achieve this.

## 7.6 Plan for Updating and Reporting

The most critical aspect of the process to update and report against the indicators which constitute the sector MRV framework is identifying *how* this will be done and *who* is involved. This means organisation(s) responsible for doing this. Within this also to establish agreements and processes for gathering data from key stakeholders and data providers. Establishing such ownership is a key task towards implementation of the MRV framework and is therefore outlined a task in the previous section.

Once in place it is suggested that a record of all such is made and that an overarching description of how and who data flows between stakeholders, data providers and the owning organisation for the MRV framework is compiled. Such a document can then be updated as these processes and flows of data change to fit the changing scope of policies/measures and the associated indicators over time.

Another key factor to consider is *what*. Our suggested approach would be for the existing table and spreadsheet based approach developed under this project is adopted with data reported against each of the indicators (both for the baseline and reporting period). Data and associated information (for example details of data sources) can also be stored in this way. This provided a relatively simple and intuitive way to manage data. Presentation of data within an update report could also utilise a table based approach, however, other data visualisation tools may be used to emphasis key points or enable more effective consumption of the data by potential users.

A process for *when* the data is presented and how often it is updated should then be defined. Our suggested approach is that updates should sought to be done on a frequency of every one to five

<sup>26</sup> [https://www.environment.gov.za/sites/default/files/docs/publications/climatechange\\_response\\_me\\_system.pdf](https://www.environment.gov.za/sites/default/files/docs/publications/climatechange_response_me_system.pdf)

years. Such updates could be planned to coincide with or contribute to reporting to the UNFCCC (National Communications and Biennial Update Reports) or domestic reporting process against the Plan for Climate Change Nigeria. Reporting requirements and frequency would also need to align with and adhere to reporting processes for the national MRV system.

**Recommendations:**

- Compile a description of who is responsible for managing the MRV framework alongside the flows of data to the MRV system from data providers and stakeholder
- Develop a format within which gathered data can be stored managed and processed/analysed to enable reporting. It is suggested this is based on the table-based approach developed in the project
- Define the frequency of reporting cycle for the MRV framework and how this aligns with UNFCCC and domestic climate change reporting commitments

## 8 Recommendations

In the midst of change, the final draft plans can only represent a snapshot of the current situation, and an indication of possible scenarios. They are vastly based on the information made available to the project team, and the insights based on the best available information and expert analysis. Whereas some sector action plans contain specific recommendations, we would like to make the following general observations and recommendations for further work:

- A multi-stakeholder presentation of the final sector plans, along with training on how to use Ricardo Energy & Environment / CDKN 'Quick Start Guide to NDC implementation'<sup>27</sup> would be a useful immediate next step to bring all relevant stakeholders together again to continue NDC implementation.
- Based on the Guide mentioned above, and on review of the NDC implementation Roadmap, a gap assessment and relative resourcing needs would be required, to identify needs in terms of capacity building, technology transfer, and high level finance to implement the NDC.
- A number of MDAs were not in a position to prepare project briefs for the 'lighthouse projects'. Following further stakeholder engagement and approval of the sector action plans, the development of project concept notes and funding plans would be a logical next step. This, however, will require a coordinated and consistent approach, in particular towards international donors and investors.
- Regarding adaptation, it will be important to assess the status of the NAP process in Nigeria, and to plan on how to further its work and to align with NDC implementation and reporting: NAP implementation can in fact help NDC implementation, and vice versa.
- On governance, it will be important to formalise the roles and responsibilities for NDC coordination and implementation, and to assess the current capacity gaps in doing so.
- Currently, the MRV framework is still under development, with urgent work being carried out in parallel by consulting teams preparing the BUR to the UNFCCC and the GHGI. Through consultation with those teams we have carefully avoided duplication. The MRV framework presented is intended to be a contribution to their ongoing work, as it will require integration and further elaboration.
- Further to the above, it will be important to integrate the results of the BUR and of the GHGI in the development of the country's Third National Communication to the UNFCCC. A request for support has already been raised with Ricardo's team leader. We are reviewing the possibility of preparing an expression of interest for this assignment.
- As Nigeria considers how to implement and monitor progress on the SDGs, the implementation of its commitments under the Paris Agreement will come into focus. The further development of the legislative framework for climate change action and appropriations is a welcome development. The implementation of the NDC sector action plans will crucially depend on their integration in the 2018 Budget, as well as the Mid-Term Sectoral Strategies. Directors across all MDAs invited further personal engagement by HME with their Ministers to deepen political buy-in for development of the sectoral action plans, in the context of work under way on the Medium-Term Sector Strategy (MTSS) and budget.
- Further to the above, policy support to FME and relevant stakeholders could be provided to improve coherence and alignment between the NDC and the Economic Recovery & Growth Plan (ERGP) 2017-2020.
- Our recommendations on finance have been designed to inform the ongoing work aimed at mobilising investment in the economy as a whole, as well as in specific sectors. Work in the form of capacity building and technical assistance would need to be carried out with specific sectors to detail the finance needs, identify specific sources of finance, and develop a plan on how to close the financing gap.
- To note, Ricardo, in partnership with a number of associates and funded by the UK Government and several philanthropic organisations, is offering to support the Government of Nigeria and three other countries to develop a NDC Investment Plan. Government representatives from the Ministry of Environment and the Ministry of Finance will be invited to London in September to develop, with financial institutions, bankable projects of relevance to

<sup>27</sup> <https://cdkn.org/wp-content/uploads/2016/11/Quick-Start-Guide-final-pdf-1.pdf>

NDC implementation. Subsequent to the workshop, it is expected that Nigeria will require assistance to take forward the recommendations, and to secure funding for the proposals.

- In the immediate, a mapping of international donors and NDC implementation support would be useful, in order to ensure that synergies are leveraged and duplications are avoided.
- An advanced negotiator training to delegates participating to COP23 and other negotiations has been requested. Such a training would very much benefit participants, and help form an integrated position, in addition to also improve the 'softer' skills of persuasion and public speaking.
- Finally, stakeholder engagement beyond MDAs could greatly benefit the project. The DCC informed us of a number of meetings to socialise the NDC, with the States, National Assembly, media, development partners, youth, civil society organisations and the private sector. We consider further socialisation and stakeholder engagement essential to secure a broad ownership of the underlying strategies.



## Appendices

- Appendix 1    Monitoring, Reporting and Verification**
- Appendix 2    NDC Implementation Action Plan for Agriculture Sector**
- Appendix 3    NDC Implementation Action Plan for Industry Sector**
- Appendix 4    NDC Implementation Action Plan for Oil and Gas Sector**
- Appendix 5    NDC Implementation Action Plan for Power Sector**
- Appendix 6    NDC Implementation Action Plan for Transport Sector**

## Appendix 1 - Monitoring, Reporting and Verification

### NDC implementation framework

In tracking progress towards a mitigation target one needs to understand how national and sectoral GHG emission levels develop – i.e. whether they develop in a way allowing to meet the target set. However, looking at emission levels alone, does not provide an understanding of why emissions rise or fall and how mitigation actions have contributed to the development and – most importantly – if GHG emissions do not develop as desired, how might existing mitigation actions be adjusted or which new mitigation actions need to be introduced to ensure GHG emissions do develop as desired. Calculating achieved GHG reductions for individual mitigation measures brings much uncertainty, as reductions are usually calculated against a baseline, i.e. a theoretical scenario. Within one sector there might also be several mitigation actions which overlap in some way, which makes the calculation of reductions for one single measures yet more uncertain.

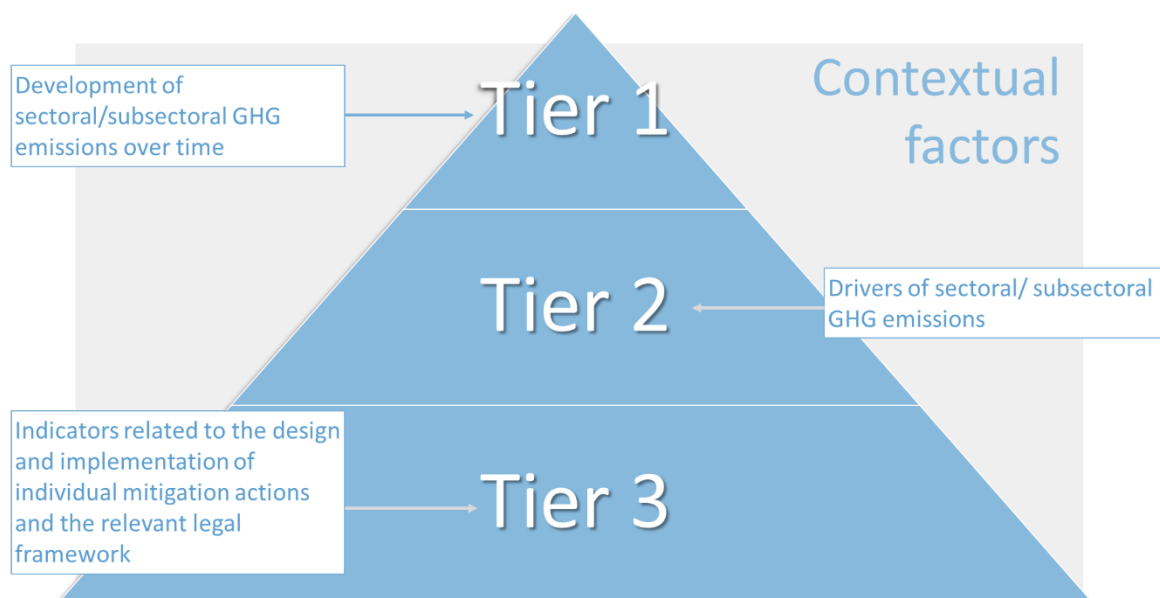
For this reason we recommend the following approach which uses three levels or “tiers” of indicators:

- Tier 1: GHG emission levels at the sectoral and potentially sub-sectoral level.
- Tier 2: Drivers of GHG emissions at the sectoral or sub-sectoral level, e.g. sectoral energy consumption, km driven per year and person as an average. This information helps understand why the GHG emission levels have changed the way they have.
- Tier 3: Indicators related to the design and implementation of mitigation actions (e.g. number of energy-efficient cooking stoves provided) and the design and implementation of the legal framework related to climate change (e.g. the design of a building code requiring energy-efficiency of buildings).

This approach is taken by a number of other countries, such as in the UK to track progress against delivering defined carbon budgets and in South Africa to track mitigation and adaptation frameworks under its Climate Change Monitoring and Evaluation System<sup>28</sup>. Indeed the approach recommended here is aligned closely with the South Africa system, with the MRV expert in this project also being a member of the team responsible for its development.

The three tiers in the framework are represented in Figure 8:

**Figure 8 The tiered approach to monitoring NDC sector action plans**



**Tier 1:** High level indicators on the development of sectoral or sub-sectoral GHG emissions over time. These seek to track sectoral level progress. The purpose of these is to inform the overall direction of travel within high level sectors and subsectors that are most aligned with the NDC sectors, as they are defined by IPCC Common Reporting Format (CRF) Framework<sup>29</sup> in the national GHGI (for

<sup>28</sup> [https://www.environment.gov.za/sites/default/files/docs/publications/climatechange\\_response\\_me\\_system.pdf](https://www.environment.gov.za/sites/default/files/docs/publications/climatechange_response_me_system.pdf)

<sup>29</sup> <http://www.ipcc-nggip.iges.or.jp/public/gl/guidelin/ch1ri.pdf>

example the agriculture sector or road transport sub-sector) or similar high level classification for adaptation. Individual actions for achieving this that are specifically associated with the NDC will only form part of the overall influence on these high level emissions. *Tier 1* indicators will primarily utilise data from the GHGI to show GHG trends across sectors.

**Tier 2:** Indicators related to sectoral drivers of GHG emissions. They are generally directly linked to *Tier 1* and help explain the trends identified in *Tier 1*. In most cases, these will be GHGI data (the emissions factors and activity data used to calculate emissions), however, in some cases other overarching datasets can be used, such as the National Energy Balance. *Tier 2* indicators therefore act to both supplement those defined as *Tier 1* and – where possible, although dependent upon data availability – link these high level indicators with individual response measures. In most cases, these indicators are derived from the range of sources that are used to compile datasets included in *Tier 1* and as such are directly linked to them.

**Tier 3:** Indicators that illustrate the progress and effectiveness of certain mitigation measures or groups of mitigation measures that are included in each NDC sector action plan. These indicators provide a bottom-up view helping to understand if and to which extent measures are contributing to the overall development one can see from the Tier 1 and Tier 2 indicators.

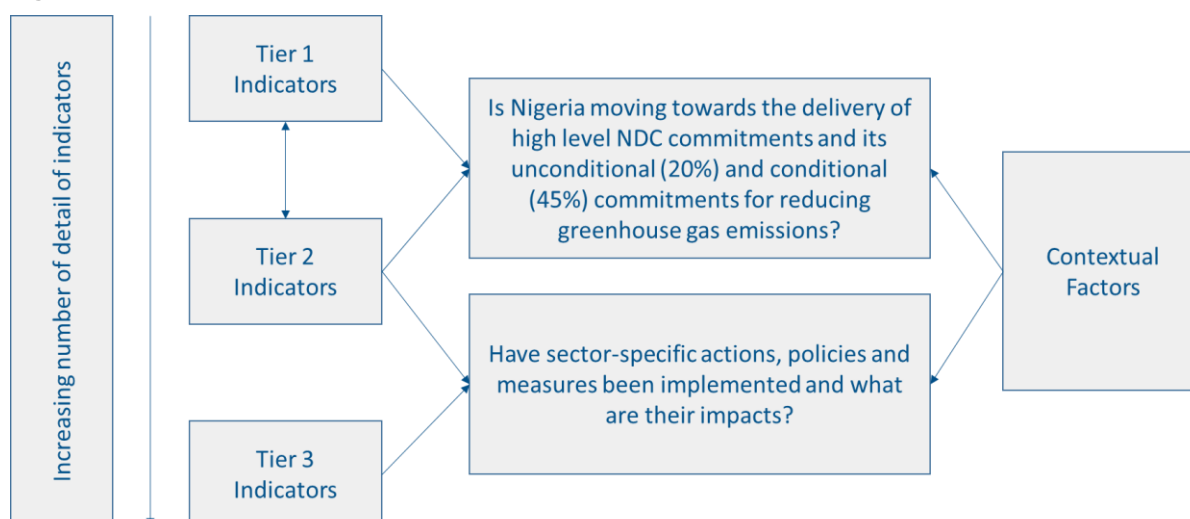
### Contextual Factors

Whilst response measures may be focused upon achieving individual outcomes and collectively moving Nigeria towards a lower-carbon economy, other factors – such as economic conditions, population growth etc. - will have a bearing on whether that transition is achieved. It is envisaged that a limited range of *Contextual Factors* will be required for the M&E Framework so that they can be incorporated into the analysis and outputs. The relevance of contextual factors will vary for each sector and hence the number and scope of these will vary from sector to sector.

### Overview

Applying a tiered framework approach provides a robust, comprehensive and useable evidence base for policy makers to track NDC sector action plans for Nigeria. When combined, alongside similar indicators to understand the role of contextual factors, tiers 1-3 provide a powerful MRV approach that is greater than the sum of its parts in providing both high level and policy specific progress to be identified. An overview of how the different parts of the framework operate as one is illustrated in Figure 9 below.

**Figure 9 An Overview of the Conceptual Framework for NDC sector action plans**



### Tracking Implementation and Impact of Measures

Indicators included within the framework will track both the implementation and impact of measures. Implementation indicators are focused on determining whether measures are in place and if so to what extent. Put in simple terms, if a measure has not been implemented it will not have an impact. Implementation measures aim to see if this has happened. However, if they are and there is still little effect this may point towards the measure(s) themselves not working and hence they need to be

modified or replaced. Impact indicators aim to track this effect, both in terms of if an effect is happening and by how much. These indicators may choose a range of different metrics to assess the impact of a policy or measure. In some cases this could be a quantitative assessment of reductions in GHG, however, often this is not possible. Other metrics, that either might be more viable to calculate or are associated with data that is more readily available, are generally used. Such metrics, can be associated with reductions in GHG emissions. For example by examining generation mix to determine if the contribution of renewables towards on-grid electricity generation is increasing or decreasing can be associated with an increase or reduction in GHG emissions.

By seeking to track both implementation and impact, a greater level of evidence is available to understand that if progress is not being made, why?

### **A 'Measured' Approach to the Development of Indicators**

The MRV framework associated with the NDC sector action plan is not intended to track the progress of every individual mitigation or adaptation measure. Rather it aims to strike a balance between providing a robust evidence base to determine NDC implementation progress whilst not being too complex to understand or too onerous to maintain. Achieving this balance is extremely important to the successful implementation and maintenance of the NDC MRV framework.

Individual sector-based MRV frameworks have been developed with this in mind. As such a manageable (although useful and relevant) series of indicators have been defined and where possible these have been aligned with existing datasets or those that might be collected with minimal resource input. The logical structure, not overly complex or difficult to obtain datasets and through comprising only a limited number of indicators, is also aimed at ensuring future updating and modifications will not be an overly onerous and resource-intensive task.

### **Baselines**

Setting the correct baseline is a very important part of the process in defining and implementing indicators. The baseline is the position from against which any progress within indicators – and therefore overall NDC implementation – will be measured.

Baselines can be set in two ways. Firstly, they could use data from the period immediately preceding the implementation of a specific action or collection of actions. In this it is normally the period (usually the year) immediately prior to the implementation of the NDC sector action plan as a whole, or a specific measure within that (not all actions will have exactly the same implementation date). A crucial issue when taking this approach is to consider whether it is pertinent to select only data from the year immediately preceding implementation or an average of data from a number of preceding years. Substantial year-to-year fluctuations are often evident in datasets that may result in a specific baseline year not being representative of typical activity or conditions. To get around this it may be possible to use the average of a number of preceding years' data in order to remove such outliers or bias from the data. An example where this might happen is in the GHGI. Individual years can be impacted by specific activities or events, such as the fluctuations in activities at – and therefore emissions from – very large industrial sites. Variations in weather can also lead to abnormal trends in energy usage (e.g. very warm periods where significant additional electricity is required to increase air conditioner usage).

Secondly baselines can be set on the basis of purely what data is available. Data for the year immediately preceding the implementation of a measure or programme may not be available. It may only exist for a year afterwards or even may not even be collected as yet. In such cases the baseline is simply set as the first year for which it is available. This is perhaps not an ideal situation, however, it is very important to work with what data are available. It is better to have something from which progress can be assessed than either nothing or committing to an unachievable (and likely unnecessary) commitment to collect significant amounts of new data. This has been an important guiding principle to the development of indicators within the MRV NDC framework.

In reality it is highly likely that a combination of these two approaches will be adopted to account for the different types of indicators applied and variation in underlying data available. Our recommendation is that a general approach towards setting multi-year baselines is adopted that also provide data for a period of time before a policy or target has been implemented. However, where such comprehensive datasets are not available this should not be a barrier to implemented indicators. If data is available for some years or only after policy implementation this should still be used to

support indicators. In such circumstances consideration should be given and – if required – described to illustrate potential year-to-year fluctuations that may not be obvious such curtailed baselines.

**Recommendation:** Seek to set baselines for all indicators using the rationale of multi-year datasets that precede the implementation of the policy or target being tracked. However, flexibility to this approach should be applied to account for datasets not being available in this format to ensure all possible datasets can be used.

### A 'Live' Framework - Continuous Evolution and Improvement

An integral principle of the indicator is that it is a 'live' process' that must be continually reviewed and updated so as to ensure the indicators included and data that underpin them are as comprehensive and up-to-date as possible.

Two key factors should influence how such updates are carried out. Firstly, the suite of policies that are being tracked. The nature of the policies are that they will change over time to reflect political or ministerial priorities. Policies may also be refined or adapted so as to improve their effectiveness in reducing GHG emissions. Secondly, new or additional data may become available. Existing indicators may be adapted, added to or replaced by new ones to accommodate such data.

However, whilst consideration of these factors are important they should also be balanced against the need to provide continuity in indicators, where possible. In order to determine longer term trends, indicators and supporting datasets need to remain constant. Frequent changes in indicators can result in it being very difficult to see such trends and determine the effect of emissions reduction policies.

Continuous management of the indicator framework is therefore a core requirement, once implemented. A balance needs to be struck between maintaining an up-to-date policy relevant suite of indicators that are underpinned by the best available data whilst also ensuring such changes do not result in confused picture that is not able to track the progress of policies over time.

## Sector level indicators

A number of indicators, based in the approach and structure outlined above, have been developed for each sector. These are presented in the respective sector action plans, one outlining each indicator for each tier, and in the accompanying spreadsheet, including Tier 1-3. Taken together this provides a basis for tracking progress on reducing GHG emissions for the sector and determining the effectiveness of policies in helping to achieve this.

To help navigate these tables some understanding and definition of what is presented in column is as follows:

**Indicator Group:** Where possible indicators have been grouped by areas so as to be reflective of a general area of action to reduce GHG emissions that may contain a number of specific actions or policies. An example is 'renewable power generation'. This could include policies that may include actions as disparate as increasing the capacity of renewables contributing to on-grid electricity generation or incentivising uptake of photovoltaic solar panels in the residential sector. Grouping indicators in the way enables those that are tracking similar policies to be viewed together and general progress in this group.

**Indicator Title:** This title simply describes more specifically what the indicator will track.

**Unit:** The quantifiable unit in which an indicator will be present and therefore progress tracked. For example this could be the GHG emissions in tonnes of CO<sub>2</sub> (equivalent).

**Policy (Tier 3 indicators only):** Tier 3 indicators aim to track specific policies and actions. In doing so a more granular picture can be established enabling policy owners to determine if and the extent to which measures are having an effect. This column therefore identifies which policy/action is being tracked, thus allowing quick identification and assessment progress across a large range of individual policies for each sector.

**Implementation or Impact (Tier 3 indicators only):** Identifies if the indicator is seeking to track whether a policy has been implemented or the extent to which it has had an effect on reducing GHG emissions.

**Additional Description:** Further information describing the indicator if this may not be clear from that provided under other sections

**Phasing:** We have suggested a two-phased approach to the introduction of indicators. Those indicators identified as phase 1 are those we recommend should be introduced first, on the basis that the underlying datasets are most likely available and relatively easy to access. Phase 2 indicators are associated with datasets that perhaps either do not exist at present or could be difficult to access. Our rationale for setting this approach is to illustrate that it is most likely not possible to try and initiate all indicators simultaneously, however, also that there is no need to do so. It is more important to get started quickly and aim to develop and build a more comprehensive suite of indicators over time.

**Datasets:** Identification of datasets that can be used to underpin the indicator. For example, all Tier 1 indicators will use data from the GHGI. In a number of cases, particularly for Tier 3 indicators, we have not been able to find specific datasets. In such instances we have identified the Ministry that is most likely to hold, be able to access or will have the responsibility for collecting this information.

## Next Steps towards Implementation of the MRV framework

Whilst we present a comprehensive suggested approach for MRV a number of further steps are required towards implementation. We recommend that the following actions are taken in order to achieve this:

- 1.) **Undertake a policy/ measures review:** Our work has sought to identify all potential policies and measures that are either aimed at or will have an impact upon mitigating GHG emissions within Nigeria in this sector. However, some may have been missed as this project took place over a limited timeframe and was reliant on the stakeholders who kindly engaged with the team. Likewise the policy development process moves quickly and new policies may have been developed or existing ones curtailed or discontinued. An initial comprehensive review of policies and measures seeking to further engage and reinforce the involvement of stakeholders should be an early next step.
- 2.) **Undertake a data review:** Whilst datasets or sources have been identified for individual indicators where possible large number of data gaps remain. A further more in-depth review to identify additional datasets should be conducted. In particular few datasets to underpin Tier 3 indicators were identified. However, the relevant Ministry who may/ should hold data has been identified and early discussions with these is recommended as part of this review. The outcome will hopefully a better understanding of the climate change data landscape in Nigeria and the identification of a number of new datasets.
- 3.) **Undertake a review of the final national MRV system:** The national MRV system should be completed at a similar time to the completion of this project. An early review of this system is recommended. Whilst the sectoral MRV frameworks have been designed in a flexible way and in expectation that the national system will follow international best practice some need to adapt and link the systems will be required.
- 4.) **On the basis of the three reviews seek to adapt and update the indicator framework:** Having undertaken the reviews identified in steps 1-3 it is highly like that some further development and adaptation of the system will be required. For example new policies may have been identified, which could require additional indicators, or indicators may be adapted so as to best fit newly identified datasets. In addition this process should also seek to establish a number of indicators that can be effectively managed. It may be that, in order to achieve this, several must be removed. An extremely important aspect of 'future-proofing' the framework is that it must contain a suite of indicators that can be effectively managed, updated and reported on in light of available resources. Removing indicators should, therefore, not necessarily be viewed as a negative action that will reduce the coverage or usefulness of the sector framework.

It is important to note that such an ongoing maintenance and development task for the indicator framework will be required to update the framework (see section on updating and reporting). This should therefore be considered as the start of this process.

- 5.) **Agree responsibility and ownership for the MRV framework:** An integral component of an MRV system is to identify which organisation or organisations have responsibility for compiling and managing it. This role will involve agreeing provision of data from network of stakeholders and data providers. Data management, analysis and reporting are also key tasks.



**Recommendation:** Undertake a series of next steps towards implementing the sector level MRV framework including:

- A policy/measures review
- A data review
- Review and alignment with the national MRV system
- Update and adapt the suite of indicators identified under this project
- Agree responsibility and ownership for the management and flows of data within the MRV systems

