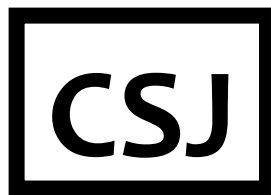


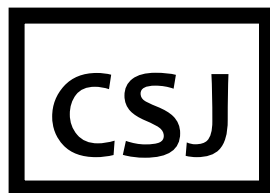
BUDGETING FOR CLIMATE CHANGE IN THE ENVIRONMENT



CENTRE FOR SOCIAL JUSTICE (CSJ)

(Mainstreaming Social Justice In Public Life)

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ACRONYMS

CO ₂	Carbon Dioxide
FGN	Federal Government of Nigeria
FMoE	Federal Ministry of Environment
GDP	Gross Domestic Product
GGW	Great Green Wall
GHG	Green House Gas
ICESCR	International Covenant on Economic, Social and Cultural Rights in Nigeria
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
MDAs	Ministries, Departments and Agencies of Government
MTEF	Medium-Term Expenditure Framework
NASPA-CCN	National Adaptation Strategy and Plan of Action on Climate Change
NEMA	National Emergency Management Agency
NESREA	National Environmental Standards and Regulations Enforcement Agency
NPE	National Policy on Environment
R&D	Research and Development
SDGs	Sustainable Development Goals
SON	Standards Organisation of Nigeria
UNEP	United Nations Environmental Programme

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EXECUTIVE SUMMARY

Globally, climate change is recognized as a key challenge to sustainable development. Given the cross-cutting nature of climate change, governments will not be able to address its economic, social and environmental impacts unless they start integrating responses throughout their national and sub-national planning and budgeting processes. Climate change and sustainable development are interdependent and inseparable. This is because climate change reduces the ability to achieve economic and social development and sustainable development is a key strategy for mitigation and adaptation. Therefore, because strategies for dealing with sustainable development and climate change have many common elements, applying them together creates synergies.

The environment provides the setting for all human action for development. The effects of climate change on the environment include increase in temperature, rise in sea level, threatening effect on plants and animals, extinction of certain plants and animals, droughts and desertification, changing rainfall patterns and adverse effects on human health, etc. Climate change is a sub-theme among a plethora of environmental challenges facing Nigeria. Thus, most environmental challenges and actions impact on climate change and climate change also grossly impacts on the environment. Nigeria's policies and plans relevant to climate change include the National Climate Change Policy Response and Strategy, National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) and the Intended Nationally Determined Contributions (INDC) now being reworked to a Nationally Determined Contribution. The Sustainable Development Goals are also relevant for climate change action. Thus, a number of policies and plans impact upon and are related to climate change.

In Nigeria, public sector financing is the main source of funds for implementing development policy and plans and it is channeled through government institutions through the instruments of the Medium-Term Expenditure Framework (MTEF) and the annual budget. The Federal Ministry of Environment (FMoE) is a key ministry of the Federal Government of Nigeria (FGN) with the institutional mandate to protect and develop the environment, as well as overall coordination of environmental management in Nigeria.

Within the four years under study (2013-2016), the FMoE has been allocating funds in their annual budgets which focus on strategic interventions for climate change adaptation and mitigation. Some of the line items in their budget clearly feed into the National Policy on Environment, National Climate Change Policy Response and Strategy, NASPA-CCN and the NDCs. The issue of highest importance facing the Ministry over the next few years will continue to be GHG mitigation and climate change

adaptation. The FMoE is expected to use a variety of approaches to address these challenges including effective and sufficient budgetary allocation in each fiscal year.

This Study aims at designing an appropriate low carbon budgeting template for the FMoE in terms of what needs to be prioritized; to identify key programmes and projects which are relevant for climate change mitigation but are poorly funded in order to call for adequate funding for their implementation. It will also identify new activities that deserve budgetary funding. The Study reviewed budget items that positively impacted on climate change mitigation and those that had negative contributions. It further reviewed projects that are poorly funded, implemented and emergent issues. It discussed low hanging fruits for mitigation and adaptation and ended with budgetary and policy recommendations.

To strengthen the use of budget allocations towards climate change adaptation and mitigation measures and building resilience, the following recommendations are imperative for the FMoE and related agencies:

- The 2016 budget of the Federal Ministry of Environment has a new project titled “National Awareness and Education Campaign on Climate Change”. Since it’s a new project, it will likely continue in 2017 and subsequent years. The campaign should be taken to all tiers of the education system to build the attitudinal consciousness of climate change into Nigerians from a very young age. This would ensure that the coming generations would be adequately empowered to confront climate change. Climate change clubs could be set up in schools from primary to tertiary level.
- Prioritizing the NDC targets based on current administration’s vision will be helpful and appropriate budgetary allocation made available.
- Mobilizing the private sector to understand their role in the implementation of the NDC and combatting climate change will facilitate access to financing other than public finance.
- Since the part-implementation of the NDC is dependent on international support, government should set up the necessary machinery to facilitate access to international funds available for NDC implementation.
- Mainstreaming gender, vulnerability and inequality concerns in climate change adaptation, mitigation and resilience building is fundamental to successful engagement.

- A holistic planning, design and project implementation that involves the three tiers of government is imperative for achievement of project goals.
- A robust monitoring and reporting system for all climate related finance be established to account for all financial inflows to support environmental and climate activities.
- The practice of slash and burn by farmers and industries should be discouraged through an awareness campaign as well.
- The FMoE should lead by example by adopting renewable energy sources such as solar to power their offices and other installations and jettison the use of diesel/PMS powered generators. The Ministry of Environment is funding many Parks in Nigeria including National Park Headquarters, Kainji National Park, Oyo National Park, Chad Basin National Park, Gashaka Gumti National Park etc. It is expected that their energy consumption should be relatively low; hence, renewable energy should be considered in powering these parks.
- Afforestation and Reforestation promotes ecosystem protection, restoration of natural habitats and biodiversity conservation. Therefore adequate budgetary allocation should be made available for Afforestation and Reforestation on a continuous basis. The advantage of this is the cleaning and greening of the environment, improvement in air quality, lowering temperature and sequestration of carbon for very long time. This preservation technique should not only be in rural forest areas. It should be extended to urban and peri-urban areas considering the carbon dioxide emission in industrialized urban centres. Carbon sequestration is one of the most potent means of addressing climate change, hence adopting this technique with trees of very long life spans will control erosion and simultaneously fight global warming, combat desertification through Reforestation in the shelter belts.
- The effective implementation and management of the Great Green Wall Programme has potentials for increasing the country's poverty reduction, biodiversity conservation as well as increasing the nation's forest cover. Nigeria should target getting at least 25 percent forest cover for its land.
- The project titled "Procurement of Clean Cook Stoves to Prevent Deforestation in six (6) Geopolitical zones (Yobe, Lagos Anambra, Rivers, Kwara, Katsina)" as listed in 2016 budget should be extended to cover the 36 states of the Federation

and the Federal Capital Territory. Millions of Nigerians are affected by indoor air pollution. Tens of thousands of deaths annually are caused by exposure to smoke from open fires. Majority of Nigeria's millions of households use firewood. Hence, the financial challenges of increasing the scope of the project is nothing compared with the health benefits of the projects, the climate conservation benefits as well as the finances saved by Nigerian families in the long run. The private sector, states and local government should come in to make the stoves very widely available.

- Allocation of funds for Research and Development is constant. However, there are no tangible deliverables to show for the expenditure over the years. Therefore, this line item should be utilized for demand driven research that solves practical and existential problems and to increase knowledge base for climate adaptation and mitigation measures.
- The Presidency/Secretary to the Government of the Federation should strengthen the interaction between the appropriate government departments, to aggregate the benefits of research.
- The Federal Government should review current policies and programmes for early warning, and based on this, develop and roll out a programme to improve availability and farmer access to short and long range weather forecasts.
- Ensure adequate annual budgetary allocation and timely release of funds for implementation of the provisions of the National Policy on the Environment, National Climate Change Policy Response and Strategy and, in particular, the amelioration of key environmental problems.
- Partner with the Presidency in the use of the Ecological Funds set aside from the Federation Account for the amelioration of ecological problems for environmental protection, natural resources conservation and environmental remediation of degraded and abandoned mining sites and other identified derelict sites.
- Emission tests for vehicles should be mandatorily done by the relevant Government agency and vehicles emitting above the set benchmark should be placed off road.

1.1 INTRODUCTION

“Global climate change is possibly the greatest environmental challenge facing the world. Although referred to as “global warming”, global climate change is more about the serious disruptions of the entire world’s weather and climate patterns, including impacts on rainfall, extreme weather events and sea level rise, rather than just moderate temperature increase. The change in climatic conditions especially the rise in average surface temperature, known as global warming is attributed to the release of greenhouse gases due to the burning of fossil fuels such as coal, oil and natural gas”¹.

Globally, climate change is recognized as a key challenge to sustainable development. Given the crosscutting nature of climate change, governments will not be able to address its economic, social and environmental impacts unless they start integrating responses throughout their national and sub-national planning and budgeting processes. It has been stated that:

“the impact of climate change on biodiversity is known to be responsible for changes in the life cycles of plants and animals and in extreme cases, the extinction of species and the disruption of livelihoods and economic activities”².

Climate change, sometimes reflected in global warming is a major threat to sustainable development of the human ecosystem and economic growth³. The discourse on climate change has evolved greatly, from being an issue largely viewed principally as an environmental challenge to one with far wider ramifications. Indeed, the link between the negative impacts of climate change and human development is increasingly well documented and has come into clearer focus due to increase in incidences of natural disasters, threats to human health, agricultural changes, etc. The predicted negative impacts of climate change have the potential of reversing the human development gains made by developing countries, including Nigeria, and aggravating social inequality.

While climate change will affect everybody to some degree, the poor are particularly vulnerable, with the fewest options for adapting or managing risk. In sum, as a cross-cutting issue, national responses and policies towards climate change cannot be effective if treated solely as an environmental matter. Many steps are needed in

¹ See pages 33-34 of the National Policy on Environment under the Climate Change theme.

² National Policy on Environment, supra.

³ There are certain gases which have the ability to trap and retain heat. These gases are called greenhouse gases. They include carbon dioxide, methane, nitrous oxide, etc. Some human activities release these gases into the atmosphere. Bush burning for agriculture and construction, application of inorganic fertilizers, rearing of farm animals, etc. releases these gases into the environment. Generation of energy from fossil fuels such as coal and natural gas; the exhausts of heavy polluting vehicles and gas flaring also contributes to climate change. Environmental and land use changes like erosion, desertification, loss of biodiversity, poor watershed management, etc. all contribute to climate change.

establishing robust policy frameworks, coordinating mechanisms and appropriate budgets to address its impacts adequately. Hence, harnessing public resources in support of environmental mainstreaming is important towards pro-poor, equitable and sustainable development.

Climate change and sustainable development are interdependent and inseparable. This is because climate change reduces the ability to achieve economic and social development and sustainable development is a key strategy for mitigation and adaptation. Therefore, because strategies for dealing with sustainable development and climate change have many common elements, applying them together creates synergies.

1.2 EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

The effects of climate change on the environment include:

(i) Increase in Temperature: As humans burn fossil fuels to provide energy, carbon dioxide and other greenhouse gases are released into the environment. These greenhouse gases trap heat in the atmosphere. As the concentration of greenhouse gases in the environment increases, the temperature of the earth increases.

(ii) Rise in Sea Level: Increased temperature of the earth causes glaciers, polar ice caps and other ice bodies to completely destabilize and melt. This increases the amount of water in the world's oceans and seas thus contributing to a rise in sea level. This poses threats to communities in low lying coastal areas. Melting of ice in the seas and oceans is capable of causing flooding in coastal areas like Lagos, Calabar, Bayelsa, Port Harcourt, etc.

(iii) Threatening Effect on Plants and Animals: All plants and animals live in environments with specific geologic conditions like temperature, rainfall patterns, etc. under which they grow, reproduce and thrive. When the environmental conditions change, these plants and animals have to adapt or relocate in search of a favourable environment.

(iv) Extinction of Certain Plants and Animals: Increased temperature of water bodies, desertification and deforestation can contribute to irreversible impact on natural habitats and lead to certain species of plants and animals becoming endangered or even extinct. This threat to biodiversity has a lot of negative impacts on the ecosystem because the earth needs this biodiversity for stability.

(v) *Effect on Health*: Changes in weather conditions can lead to varying health challenges ranging from heat-related heart and respiratory problems to malaria. Droughts, floods and warmer temperatures usually combine to create a favourable condition for mosquitoes, insects and other disease carrying agents to thrive. Diseases that were relatively absent in certain places are now occurring in those places. This can create epidemics with severe consequences on health.

(vi) *Droughts and Desertification*: Increased temperature leads to diminishing quantity of water available in water bodies. Droughts and desertification reduces or obliterates the ability of the soil to be used for productive purposes. The quantity of water in soils and other sources also reduces. This causes massive disruption of agricultural activities with its attendant negative effect on the local economy. Climate change is responsible for the shrinkage of the Lake Chad from 25,000km² in the 1960s to its present size of less than 2,500km². This led to loss of livelihood resources and opportunities for communities living in the Lake Chad area. Opportunities for crop farming, fishing, animal husbandry etc. disappeared and this played a key role in predisposing the people of that region to enlistment into Boko Haram scourge.

(vii) *Changing Rainfall Patterns*: Meticulous observers would have noticed that it is gradually becoming more difficult to predict when the rainy season will start or end. The rainy season now starts earlier or later, than it used to in the past, and also ends earlier or later than it used to. This creates a lot of challenges, especially to rural farmers who may be caught off guard by the onset or stoppage of the rainy season.

1.3 THE MANDATE OF THE FEDERAL MINISTRY OF ENVIRONMENT

In Nigeria, public sector financing is the main source of funds for implementing development policy and plans and it is channeled through government institutions through the instruments of the Medium-Term Expenditure Framework (MTEF) and the annual budget. The Federal Ministry of Environment (FMoE) is a key ministry of the Federal Government of Nigeria (FGN) with the institutional mandate to protect and develop the environment, as well as overall coordination of environmental management in Nigeria. Specifically, the full mandate of the FMoE is as detailed below⁴.

- *Prepare a comprehensive National Policy for the protection of the environment and conservation of natural resources, including procedure for environmental impact assessment of all developing projects.*
- *Prepare in accordance with the National Policy on Environment, periodic master plans for redevelopment of environmental science and technology and advise the Federal Government on the financial requirements for the implementation of such plans.*

⁴ <http://environment.gov.ng/index.php/78-featured/72-welcome>

- *Advise the Federal Government on National Environmental Policies and priorities, the conservation of natural resources and sustainable development and scientific and technological activities affecting the environment and natural resources.*
- *Promote cooperation in environmental science and conservation technology with similar bodies in other countries and with international bodies connected with the protection of the environment and the conservation of natural resources.*
- *Cooperate with Federal and State Ministries, Local Governments, statutory bodies and research agencies on matters and facilities relating to the protection of the environment and the conservation of natural resources.*
- *Prescribe standards for and make regulations on water quality, effluent limitations, air quality, atmospheric protection, ozone protection, noise control as well as the removal and control of hazardous substances, and*
- *Monitor and enforce environmental protection measures.*

Box 1 from NASPA-CCN states what the Federal Ministry of Environment must do to protect biodiversity.

Box 1: What the Federal Ministry of Environment can do to Protect Biodiversity

1. Establishing and managing national parks that have wide range of terrestrial and aquatic habitats.
2. Protecting threatened species and ecological communities by implementing protective and recovery actions.
3. Working with other environment-management agencies, indigenous community dwellers, land owners etc. to mitigate the effects of weeds, pests, fire and other threats to biodiversity
4. Improving conservation management and creating connections between natural areas.
5. Conserving genetic materials by storing plant seeds in long term seed banks.
6. Support the active implementation of the National Biodiversity Strategy and Action Plan (NBSAP), particularly those strategic actions that address climate change impacts.
7. Support recommended climate change adaptation policies and programmes in sectors that affect biodiversity conservation.
8. Support and implement programmes for alternative livelihoods in order to reduce unsustainable resource use that contributes to loss of biodiversity.

Source: NASPA-CCN

1.4 ENVIRONMENT AND CLIMATE CHANGE POLICIES AND PLANS

Climate change is a sub-theme among a plethora of environmental challenges facing Nigeria. Thus, most environmental challenges and actions impact on climate change and climate change also grossly impacts on the environment. Nigeria's policies and plans relevant to climate change include the National Climate Change Policy Response and Strategy, National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) and the Intended Nationally Determined Contributions (INDC) now being reworked to a Nationally Determined Contribution. Thus, a number of policies and plans impact upon and are related to climate change.

1.4.1 Sustainable Development Goals

Nigeria, as member of the international community is bound to ensure the realization of the Sustainable Development Goals (SDGs). Some of the Goals are very relevant to the environment and climate change. They are as follows:

- Goal 6: ensure availability and sustainable management of water and sanitation for all;
- Goal 11: make cities and human settlements inclusive, safe, resilient and sustainable;
- Goal 12: ensure sustainable production and consumption patterns
- Goal 13: take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy;
- Goal 14: conserve and sustainably use the oceans, seas and marine resources for sustainable development;
- Goal 15: protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss.

From the foregoing, it is obvious that a huge chunk of the SDGs is centered on the environment and climate change. Goal 13 is direct on climate change whilst the other goals will aid and abet climate change adaptation and mitigation. The implication is that if Nigeria must attain the SDGs, then the budget of Ministries, Departments and Agencies of Government (MDAs), especially, the FMOE must reflect the promotion and protection of these mandates.

1.4.2 The Nationally Determined Contributions

According to the INDC, Nigeria's current estimated emission per capita is around 2 tonnes CO₂e and under the *business as usual* projection will hit 3.4tonnes CO₂e by

2030. But under the *conditional* projection, it will still be around 2 tonnes CO₂e by 2030. Part of the specific activities listed for the implementation of the INDC is:

Review of Nigeria's current climate finance landscape, support needs and the international funding landscape, along with an assessment of climate finance readiness and gaps. This will include possible use of funding through carbon market mechanisms subject to the detailed provisions of the Paris Agreement.

Nigeria promised to fight climate change by mitigating her greenhouse gas emission unconditionally by 20% and conditionally by 45%. The base data period for the projection was 2010-2014 while the implementation period is 2015-2030. The key measures of Nigeria's Nationally Determined Contribution include working towards ending gas flaring by 2030; working towards off-grid solar PV of 13GW (13,000MW); efficient gas generators; 2% per year energy efficiency (30% by 2030); transport shift from car to mass transit; improve electricity grid and reforestation and climate smart agriculture.

1.4.3 The National Adaptation Strategy And Plan Of Action For Climate Change In Nigeria (NASPA-CCN)

In terms of adaptation to climate change, Nigeria's response is focused on increasing resilience and managing unavoidable impacts. The National Adaptation Strategy and Plan of Action for Climate Change in Nigeria (NASPA-CCN) describe Nigeria's adaptation priorities and brings together existing initiatives for future action.

"The NASPA-CCN vision is a Nigeria in which climate change adaptation is an integrated component of sustainable development, reducing the vulnerability and enhancing the resilience and adaptive capacity of all economic sectors and of all people - particularly women, children and resource-poor men – to the adverse impacts of climate change, while also capturing the opportunities that arise as a result of climate change. Our goal is to take action to adapt to climate change by reducing vulnerability to climate change impacts and increasing the resilience and sustainable wellbeing of all Nigerians; and to reduce or minimize risks by improving adaptive capacity, leveraging new opportunities and facilitating collaboration inside Nigeria and with the global community."⁵

NASPA-CCN strategies for aquatic environment includes: Initiate a national programme for integrated water resource management at the water shed level; intensify programmes to survey water quality and quantity for both ground and surface water; implement programmes to sustainably extend and improve water supply and water

⁵ Nigeria's INDC Document at page 5.

management infrastructure; explore water efficiency and management of water demand particularly in Sahel and Sudan Savannah areas⁶.

NASPA-CCN strategies for the forest environment includes: Strengthen the implementation of the National Community-Based Forest Resource Management Programme; support the review and implementation of the National Forest Policy; develop and maintain a frequent forest inventory system to facilitate monitoring of forest status⁷.

1.4.4 The National Policy On Environment

The National Policy on Environment recognizes the challenge posed by climate change. According to the Policy, some strategies that could be used to tackle climate change include:

- Partnering with other countries, in order to take a multilateral approach to solving the problems of climate change;
- Strengthening the interaction between the appropriate government departments, to aggregate the benefits of research;
- Promoting energy efficiency and the use of renewable sources of energy e.g. non-carbon fuels such as wind and solar;
- Encouraging industries by deploying appropriate incentives for the use of renewable energy in their production processes;
- Designing appropriate incentives which ensure the integration of scientific knowledge into behavioural patterns and selection of goods and services.

1.4.5 Other Programmes Relevant To Climate Change

There are several programmes of the FMoE and other MDAs that are climate change related. The budget of the FMoE, in pursuance of its mission and mandate, has over the years focused on expenditure on environmental protection and conservation activities, some of which are climate specific and enhance adaptation and mitigation measures. Initiatives such as the Great Green Wall (GGW) initiative in the eleven frontline states can address desertification, reclamation and rehabilitation of degraded land, biodiversity conservation, erosion and watershed management. Also, clean energy initiatives such as the development of pilot GHG mitigation solar projects in local communities and nationwide tree planting projects are beneficial. Tree planting for example, has been

⁶ Nigeria's INDC Document, Annex 1B, Page 20.

⁷ Nigeria's INDC Document, Annex 1C, Page 20.

identified as climate change mitigation measure since it serves as a carbon sink for GHGs and the preservation of the ecosystem. The budget of the FMoE captures tree planting as one of its plans and strategies to mitigate climate change. The GGW aims to address desertification, enhance natural resource management and promote ecosystem integrity in the dry-land in the Northern parts of the country.

There are other climate relevant programmes of the FMoE that have received budget allocations, such as the implementation of green economy initiatives through eco-labeling nationwide; natural resources conservation, development of management plans for forest reserves; development of planned adaptation strategies to combat climate change in Nigeria; assessment of impacts, adaptation and vulnerability to climate change in South East region of Nigeria; communicating developed national action plans and policy on climate change for multi-sectoral adaptation and planning for green economy in Nigeria, etc. These and more are relevant to climate change mitigation. Another key project within the budget of the FMoE is the flooding and erosion control initiative. Erosion and flooding are severe consequences of climate change and have been altering geomorphological systems.

2.1 THE BUDGET OF THE FMoE AND CLIMATE CHANGE

Within the four years under study (2013-2016), the FMoE has been allocating funds in their annual budgets which focus on strategic interventions for climate change adaptation and mitigation. Some of the line items in their budget clearly feed into the National Policy on Environment, National Climate Change Policy Response and Strategy, NASPA-CCN and the NDCs. The issue of highest importance facing the Ministry over the next few years will continue to be GHG mitigation and climate change adaptation. The FMoE is expected to use a variety of approaches to address these challenges including effective and sufficient budgetary allocation in each fiscal year.

This Study aims at designing an appropriate low carbon budgeting template for the FMoE in terms of what needs to be prioritized; to identify key programmes and projects which are relevant for climate change mitigation but are poorly funded in order to call for adequate funding for their implementation. It will also identify new activities that deserve budgetary funding.

2.2 TREND OF BUDGET ALLOCATION TO FEDERAL MINISTRY OF ENVIRONMENT FROM 2013-2016

Table 1 and Chart 1 show the trend of allocations to the sector over the four year period 2013-2016.

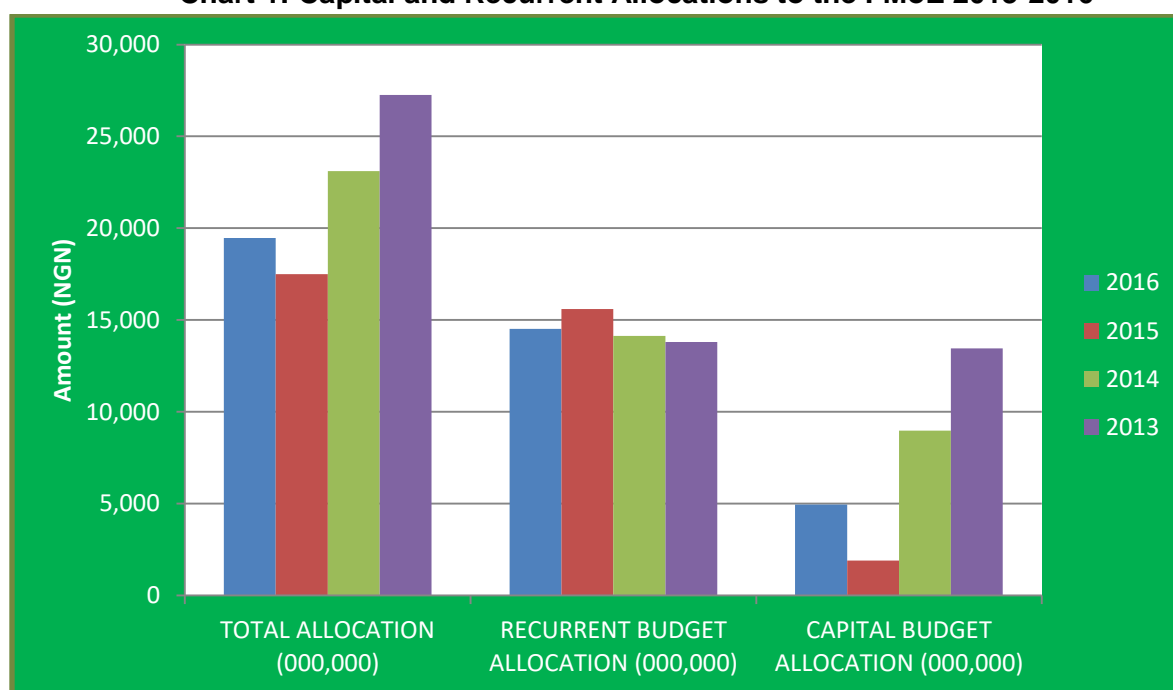
Table 1: Trend of Budget Allocation to FMoE from 2013-2016

YEAR	TOTAL ALLOCATION	RECURRENT BUDGET ALLOCATION	PERCENTAGE OF RECURRENT EXPENDITURE	CAPITAL BUDGET ALLOCATION	PERCENTAGE OF CAPITAL EXPENDITURE
2016	19,473,373,106	14,515,408,468	74.54	4,957,964,638	25.46
2015	17,499,334,341	15,599,334,341	89.14	1,900,000,000	10.85
2014	23,113,862,156	14,138,963,475	61.17	8,974,898,681	38.83
2013	27,253,838,609	13,798,035,554	50.63	13,455,803,055	49.37

Source: Budget Office of the Federation (2013-2016)

The above Table is graphically presented in Chart 1.

Chart 1: Capital and Recurrent Allocations to the FMoE 2013-2016



In the four years (2013-2016) fiscal budget under review, allocation to the FMoE have decreased consistently with 2013 receiving the highest budgetary allocation and 2015 being the lowest. Furthermore, budgetary allocation for capital expenditure has consistently decreased with a corresponding increase in recurrent expenditure. As can be seen from Table 1 above, in 2013, the percentage of recurrent and capital expenditure was almost equal, with 50.63 percent recurrent expenditure and 49.37 percent capital expenditure. However, in 2014, recurrent expenditure accounted for 61.17 percent and 38.83 percent for capital expenditure. In 2015, recurrent expenditure was very high with 89.14 percent allocation while the capital budget received a paltry sum and represents only 10.85 percent. The 2016 budget allocation is 74.54 percent

and 25.46 percent for recurrent and capital expenditures respectively out of a total budget of N19.47 billion.

It is ironic that with increasing environmental challenges and as the year progresses, the budgetary allocation for capital expenditures on the environment keeps declining, and budgetary allocation for recurrent expenditures keeps increasing.

2.3 ALLOCATIONS AND THEIR ALLIGNMENT WITH PLANS AND STRATEGIES: POSITIVE IMPACT ON CLIMATE CHANGE AND PROGRAMMES AND PROJECTS THAT SHOULD BE CONTINUED

From the budget of the FMoE, there are good projects and programmes which, if well implemented, will ensure meeting the targets set in the various climate change and environmental policy documents of Nigeria. The items have been identified from the budget for a four year period of 2013-2016. Continuous dedication of resources to these line items in the annual budget will provide solutions that address climate change. These projects, for example, will leverage both the financial value derived from reducing greenhouse gas emissions and other incentives for lower emissions. Table 2 below shows projects and programmes in the budget of the FMoE that will positively impact on climate mitigation.

Table 2: Budget Items that will Positively Impact on Climate Change Mitigation

YEAR	PROJECT	ALLOCATION (N)
2013	TREE PLANTING	129,554,377
	THE GREAT GREENWALL (NIGERIA) PROGRAMME IN THE 11 FRONTLINE STATES (ESTABLISHMENT OF 60KM SHELTERBELT).	24,274,377
	NATURAL RESOURCES CONSERVATION AND DEVELOPMENT OF MANAGEMENT PLANS FOR FOREST RESERVES	32,000,000
	EROSION & FLOOD CONTROL	7,405,118,173
	DEVELOPMENT AND PRODUCTION OF NEW REGULATIONS AND STANDARDS (RENEWABLE ENERGY, IE WIND AND SOLAR) AND REVISION OF EXISTING ONES (INFRASTRUCTURE, OIL & GAS AND THE EIA ACT) AND THEIR VALIDATION WORKSHOPS	30,000,000
	IMPLEMENTATION OF GREEN ECONOMY INITIATIVES THROUGH ECO-LABELLING NATIONWIDE.	10,000,000
	DEVELOPMENT OF NIGERIA NATIONAL GREENHOUSE GAS (GHG) INVENTORY SYSTEM.	35,000,000
	DEVELOPMENT OF PILOT GHG MITIGATION SOLAR PROJECT IN A LOCAL COMMUNITY IN THE FCT	20,000,000

	DEVELOPMENT OF PLANNED ADAPTATION STRATEGIES TO COMBAT CLIMATE CHANGE IN NIGERIA TARGETTING SMALL FISHING FARMERS IN THE NORTH CENTRAL ZONE (PHASE II)	35,000,000
	ASSESSMENT OF IMPACTS, ADAPTATION AND VULNERABILITY TO CLIMATE CHANGE IN SOUTHEAST REGION OF NIGERIA	30,000,000
	COMMUNICATING DEVELOPED NATIONAL ACTION PLANS AND POLICY ON CLIMATE CHANGE FOR MULTISECTORAL ADAPTATION PLANNING FOR GREENECONOMY IN NIGERIA	30,000,000
	CAPACITY DEVELOPMENT OF AGRICULTURAL EXTENSION SERVICE OFFICERS FOR INTERPRETING AND COMMUNICATING CLIMATE INFORMATION TO RURAL FARMERS INCLUDING WOMEN IN 3 GEOPOLITICAL ZONES (PHASE I)	30,000,000
	DEVELOPMENT OF SKILL ACQUISITION CENTRES WITH SOLAR POWERED GRINDING MACHINES IN OWO, ONDO STATE	15,000,000
	INTRODUCTION OF CLEAN COOK STOVES IN THREE GEOPOLITICAL ZONES TO REDUCE DEFORESTATION	55,000,000
	ESTABLISHMENT OF RENEWABLE ENERGY VILLAGE IN KADUNA	30,000,000
	COUNTERPART FUNDING FOR THE WEST AFRICAN SCIENCE SERVICE CENTER ON CLIMATE CHANGE & ADAPTIVE LAND USE (WASCAL) PROGRAMME	5,000,000
2014	FOREST RESOURCES DEVELOPMENT, MANAGEMENT AND TREE PLANTING NATION-WIDE : A) IMPLEMENTATION OF INSTITUTIONAL FRAMEWORK: B) NATION-WIDE TREE PLANTING PROGRAMME (ESTABLISHMENT OF 50 HA PER STATE IN 10 STATES. (C) ESTABLISHMENT OF NATIONAL ARBORETUM IN ABUJA, FCT. D) MAINTENANCE OF OLD PLANTATIONS (E) FOREST RESOURCES DEVELOPMENT CAPACITY BUILDING	20,000,000
	NATURAL RESOURCES CONSERVATION AND DEVELOPMENT OF MANAGEMENT PLANS FOR FOREST RESERVES	10,000,000
	GREEN VILLAGE DEVELOPMENT TO COMBAT DESERTIFICATION IN THE 11 FRONTLINE STATES	22,250,885
	ESTABLISHMENT OF ACACIA SENEGAL PLANTATION TO COMBAT DROUGHT AND DESERTIFICATION IN THE 11 FRONTLINE STATES	32,445,945
	THE GREAT GREENWALL SAHARA PROGRAMME	16,122,000

	(PROVISION OF SHELTERBELT IN THE FRONTLINE STATES)	
	EROSION & FLOOD CONTROL	4,729,668,361
	TREE PLANTING	110,000,000
	DEVELOPMENT OF PLANNED ADAPTATION STRATEGIES TO COMBAT CLIMATE CHANGE IN NIGERIA TARGETING SMALL FISHING FARMERS IN THE NORTH CENTRAL ZONE (PHASE II)	10,000,000
	ASSESSMENT OF IMPACTS, VULNERABILITY AND ADAPTATION TO CLIMATE CHANGE IN THE DIFFERENT REGIONS OF NIGERIA (PHASE II)	15,000,000
	"DEVELOPMENT OF NIGERIA NATIONAL GREENHOUSE GAS (GHG) INVENTORY SYSTEM. (PHASE II) "	10,000,000
	MAPPING OF CHARCOAL PRODUCING AREAS AS SOURCE OF GHG EMISSION & INTRODUCTION OF ENERGY EFFICIENT STOVES (COAL BRICK STOVES) AS MITIGATION OPTION	4,000,000
	DEVELOPMENT OF PILOT GHG MITIGATION PROJECT IN FCT.- PROJECT FOR CAPTURING METHANE FROM LANDFILL FOR ENERGY PRODUCTION	20,000,000
	A PILOT INDIGENOUS MITIGATION PROJECT TO CAPTURE BIOGAS FROM FAECES/URINE IN FEDERAL GOVT. GIRLS' SECONDARY SCHOOL ABAJI (PHASE I)	45,000,000
	COUNTERPART FUNDING FOR THE WEST AFRICAN SCIENCE SERVICE CENTER ON CLIMATE CHANGE & ADAPTIVE LAND USE (WASCAL) PROGRAMME	15,000,000
	IMPLEMENTATION OF GREEN ECONOMY INITIATIVES THROUGH ECO-LABELLING NATIONWIDE	10,000,000
	DEVELOPMENT AND PRODUCTION OF NEW REGULATIONS AND STANDARDS (RENEWABLE ENERGY, IE WIND AND SOLAR) AND REVISION OF EXISTING ONES (INFRASTRUCTURE, OIL & GAS AND THE EIA ACT) AND THEIR VALIDATION WORKSHOPS.	20,000,000
	CONDUCT ANALYSIS OF CLIMATE CHANGE IMPACTS AND RISKS TO NIGERIA'S ECONOMY	5,000,000
	SUPPLY AND CONSTRUCTION OF SOLAR STREET LIGHTS IN AKWA IFITEDUNU, DUNUKOFIA LGA ANAMNBRA STATE	20,000,000
	FOREST INVENTORY OF THE OGOJA FOREST RESERVES IN CROSS RIVER STATE	30,000,000
2015	TREE PLANTING	19,159,572
	EROSION & FLOOD CONTROL	1,157,375,660

	AFFORESTATION ON DEGRADED LANDS TO COMBAT DROUGHT & DESERTIFICATION USING INDIGENIOUS FRUIT TREES MABUSHI, ZANGO KATAF L.G.A KADUNA	11,139,286
	MITIGATING GREENHOUSE GASES TO COMBAT CLIMATE CHANGE THROUGH INSTALLATION OF SOLAR ENERGY SYSTEM AT GAVEL PRELIMAS, ODO EKU	6,832,095
	SUPPLY AND CONSTRUCTION OF SOLAR STREET LIGHTS IN AWKA-IFITEDUNU, ANAMBRA STATE	23,000,000
	CONSTRUCTION OF SOLAR POWERED BOREHOLE IN OMEKE, EZIETITI ADAZIANI, ANAMBRA STATE	9,000,000
	RESEARCH AND DEVELOPMENT	18,367,143
2016	RESEARCH AND DEVELOPMENT	1,780,969,885
	IMPLEMENTATION OF ACTIVITIES FROM THE OUTCOME OF THE UNFCCC COP 21 (POST COP ACTIVITIES)	30,473,306
	PRODUCTION OF ABRIDGED VERSION OF NIGERIA'S INTENDED NATIONALLY DETERMINED CONTRIBUTION (NDC) AND DEVELOPMENT OF A NATIONAL ACTION PLAN (FRAMEWORK) FOR THE IMPLEMENTATION OF NIGERIA'S INDC	38,625,000
	REVIEW OF NATIONAL POLICY ON CLIMATE CHANGE AND DEVELOPMENT STRATEGY PLAN	22,387,500
	NATIONAL AWARENESS AND EDUCATION CAMPAIGN ON CLIMATE CHANGE	32,992,318
	PROCUREMENT OF CLEAN COOK STOVES TO PREVENT DEFORESTATION IN SIX (6) GEO-POLITICAL ZONES (YOBE, LAGOS, ANAMBRA, RIVERS, KWARA, KATSINA)	46,250,000
	COMBATING DESERTIFICATION THROUGH REFORESTATION FOR CLIMATE CHANGE MITIGATION AND SUSTAINABLE LAND MANAGEMENT IN THE SHELTERBELT.	105,034,723

Source: Budget Office of the Federation (2013-2016)

A review of the performance and essence of a few of these budgetary provisions is imperative. Tree planting is a laudable venture for prevention of erosion and flood control, creating carbon sinks, combating desertification, providing livelihood support resources and proper management of the living environment. But the challenge is that tree planting campaigns at the federal and state levels are over 30 years old. Considering this long period of campaigns, the number of trees available and the

continued deforestation shows that the campaign has not been successful. Tree planting has therefore failed to show value for money over the long period of time.

Budgeting for energy efficient and clean cook stoves is a positive development that reduces the energy requirements for cooking in homes especially in the rural areas and poor neighbourhoods. This will save trees and reduce the cost of cooking and demand for fossil fuels. However, the project has run into scandals following the lack of transparency and misuse of budget funds. It is important that local capacity for the production of these stoves be developed rather than relying on importation. Also, erosion and flood control programmes preserve the land for cultivation and other activities, save economic investments such as housing, etc. It is imperative that erosion control programmes be continued by the Ministry.

Provisions for research and development should be focused on demand driven research aimed at solving practical existential problems. Merely budgeting for research and development without stating the details opens the funds to the possibility of misuse. Also, solar lighting systems are important to reduce the demand for fossil fuels in energy generation and use. If properly managed, it can become an avenue for job creation and skills acquisition and contribute to meeting the renewable energy targets set in various national and international standards. But the procurement of substandard equipment prevents communities from reaping the full benefits of the lighting system.

Capacity development for agriculture extension officers for interpreting and communicating climate information to rural farmers is imperative with changing rainfall and weather patterns which affect the feasibility and viability of farming activities. Natural resource and forest conservation are in tandem with goal 15 of the SDGs.

Combatting desertification through reforestation and other strategies is imperative especially for the environment and economies of critically affected states in Northern Nigeria⁸. Desert encroachment has negatively affected livelihoods, created crisis between farmers and herdsmen who have to compete on the same land for cultivation and provision of forage for animals. Desertification has facilitated the relocation of whole communities, changed the local ecosystems and created the environment where individuals and communities are no longer able to have access to food. Also, effective forests resources and reserves management is imperative for climate change moderation.

Creating standards is important for regulation of emissions and setting the governance architecture for combatting climate change. It leads to the desired destination by affirming (at the risk of sanctions) acceptable and unacceptable actions and omission in

⁸ See Goal 15 of the SDGs.

key sectors. Communicating plans and policies in this sector seems to be a difficult task despite budgetary provisions. Adequate response to climate change should involve the actions and omissions of state and non state actors, especially in matters of behavioural change and change in consumption and production patterns⁹. This aspect of public funded activities holds the key to the realization of sectoral objectives and as such, needs greater energy and intensity of communications. It is therefore a task for the FMoE and other MDAs undertaking the afore-listed campaigns to devise new strategies to ensure greater value for money and public buy-in to the campaigns¹⁰. It may also be imperative to facilitate public buy-in through incentive programmes which taps the creative energy of women, youths, unemployed and rural dwellers.

2.4 PROJECTS IDENTIFIED IN THE BUDGET AS HAVING NEGATIVE IMPACTS ON ADDRESSING CLIMATE CHANGE

There are line items in the budget of the FMoE which are not climate friendly. Table 3 below shows the line items. The major one is continuous allocation of funds to purchase of generators, fuelling and maintenance of the said generators. Generators run on fossil fuel which emits carbon into the atmosphere to cause global warming.

Table 3: Budget Items that will Negatively Impact on Climate Mitigation

Year	Project	Allocation
2013	PLANT/GENERATOR FUEL COST	11,070,695
	ENVIRONMENTAL HEALTH REGISTRATION COUNCIL OF NIGERIA	20,000,000
	PURCHASE OF 5 NO. 20 KVA AND 1 NO.160 KVA GENERATING SET FOR HEAD QUARTERS THE 5 ZONAL OFFICES IN KANO, BAUCHI, IBADAN, OWERRI AND UYO.	
2016	MAINTENANCE OF PLANTS/GENERATORS	8,046,784

Source: Budget Office of the Federation (2013-2016)

2.5 GOOD PROJECTS THAT ARE POORLY FUNDED, IMPLEMENTED AND EMERGENT ISSUES

According to the website of the FMoE, there are significant projects in the budget of the Ministry which have not received adequate attention in terms of frequency and sufficient funding. They include:

⁹ This will be in accordance with SDG Goal 12.

¹⁰ One of the targets of Goal 13 of the SDGs is to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

- Mapping of charcoal producing areas as sources of GHG emission
- Introduction of energy efficient stoves as mitigation option
- Implementation of green economy initiatives through eco-labeling nationwide.
- Waste management practices
- Research and development
- Climate sensitization programme

Though tree planting has received allocation in the four years under study, but its implementation has not been very effective across the states of the Federation. Ensuring that these important projects and programme receive adequate allocation and are properly implemented will go a long way for climate change adaptation and mitigation. Also, investments in renewable energy have remained at the token stage whilst policies to mainstream its use have either not been put in place or obeyed in the breach. Where are the innovations and problem solving initiatives arising from the expenditure of sums budgeted for research and development over the years? What are research topics and areas of interest? Evidently, research and development has been poorly managed and implemented and needs the managers not just to think out of the box, but simply, to get out of the box.

Beyond the projects listed above, it seems that most of the programmes and projects come from the federal government budget without establishing cooperation and counterpart funding from states and local governments. This creates the absence of a buy-in and collaboration across all tiers of government. It is also not clear whether local communities are considered as stakeholders in programme decisions and as such, their cooperation which is vital for success, sought and obtained. Considering that most of these projects are in local communities, this is a vital missing link. For erosion, afforestation, desertification control programmes, etc. to be successful, they require effective local participation.

Also, climate change and environmental management programmes in the FMoE appear gender neutral and makes no strategic and specific provisions to get women and vulnerable groups on board. Issues around natural resource management, habitat preservation, change of consumption patterns, etc. require the active collaboration of women. No one can mainstream clean cook stoves and sustainable domestic waste management without the buy-in of women. On the other hand, vulnerable groups are most negatively affected by climate change due to their reduced resilience and capacity to adapt. It is therefore imperative to ensure that their views and participation is mainstreamed into the adaptation, mitigation and resilience building enterprise.

Inequality, poverty and lack of access to modern life sustaining resources facilitate production and consumption patterns that promote climate change. Thus, reducing inequality and its manifestations should be at back of budgetary measures that affect climate change if improvements are to be sustainable on the long term.

Finally, many MDAs are also engaged in projects and programmes similar to the ones undertaken by the FMoE¹¹. The cross cutting projects include renewable energy, tree planting and afforestation, clean cook stoves, erosion and flood control, etc. Disaster risk management which seems to be a natural fallout of climate disasters is not under the control of FMoE and is the task of the National Emergency Management Agency. But the level of engagement and collaboration between the two agencies is not clear. Apparently, there seems to be no coordinating mechanism to ensure the integration of all these aforelisted initiatives in an overarching national framework for climate change containment¹².

3.1 LOW HANGING FRUITS FOR MITIGATION AND ADAPTATION STRATEGY IN ENVIRONMENT SECTOR

Huge financial investments are needed to implement various programmes and activities of the FMoE. With the increasing pressure on the environment and natural resources, the cost of inaction would rise exponentially and manifest in the expansion of desertified areas, loss of agricultural and natural resources, declining agricultural productivity, impaired health of citizens, pollution of surface and underground waters, expansion of coastlines into prime property and agricultural areas, etc. The financial requirements for environmental protection and natural resources conservation calls for the need to harness the budgetary allocation specifically meant for climate change mitigation mechanisms in a more value for money and responsive way.

While the Ministry seeks for enduring mitigation measures for climate change, there are low hanging fruits, which can sustain the nation's adaptive capacity in a most cost effective manner. The strategies for achieving these low hanging fruits include:

- Encouraging reforestation and afforestation programmes and activities with a view to rectifying the forest losses and the adverse effects of deforestation. Local

¹¹ These include the Ministries of Agriculture, Water Resources, Works and Housing, Science and Technology, etc.

¹² One of the targets of SDG Goal 13 is to integrate climate change measures into national policies, strategies and planning. The fact of many MDAs engaged in climate change related activities is a welcome development. But collaboration and coordination is still imperative.

communities and women must be mainstreamed as agents for the success of this activity. Again, collaboration across the three tiers of government is vital.

- Climate education through mass media and public awareness campaigns. This may not cost a lot considering that these media already exist. It is just the new programming and the buy-in of the media that is needed for this initiative.
- Promote the development of alternative sources of energy. This will require collaboration with such Ministries like agriculture, housing, power, science and technology, water resources, etc.
- Implement “polluter-pays-principle” where extractive industries will set aside a portion of their financial turnover/profits to an Environment Remediation Fund.
- Protect forest from bush and forest fires and taking measures to discourage wanton destruction of forest resources.
- Encourage appropriate agro-forestry practices and the search for multipurpose plant species for achieving increased productivity for a unit area of land.
- Enforce mandatory Environmental Impact Assessment for developmental projects that are likely to have a significant negative effect on the environment.
- There is also the need to improve current funding levels and provide new and additional financial resources that are both adequate and predictable to halt and reverse the current menace of environment and natural resources degradation.
- Strengthen the implementation of the National Community-Based Forest Resources Management Programme.
- Support review and implementation of the National Forest Policy.
- Develop and maintain a frequent forest inventory system to facilitate monitoring of forest status.
- Strengthen the mandate of National Environmental Standards and Regulations Enforcement Agency (NESREA) and Standards Organisation of Nigeria (SON) to enforce importation of vehicles with low carbon emission.

- Support recommended climate change adaptation policies and programmes in sectors that affect biodiversity conservation, including agriculture, forestry, energy and livelihoods.
- Support and implement programmes for alternative livelihoods in order to reduce unsustainable resource use that contributes to loss of biodiversity.

3.2 BUDGET AND POLICY RECOMMENDATIONS

To strengthen the use of budget allocations towards climate change adaptation and mitigation measures and building resilience, the following recommendations are imperative for the FMoE and related agencies:

- The 2016 budget of the Federal Ministry of Environment has a new project titled “National Awareness and Education Campaign on Climate Change”. Since it’s a new project, it will likely continue in 2017 and subsequent years. The campaign should be taken to all tiers of the education system to build the attitudinal consciousness of climate change into Nigerians from a very young age. This would ensure that the coming generations would be adequately empowered to confront climate change. Climate change clubs could be set up in schools from primary to tertiary level.
- Prioritizing the NDC targets based on current administration’s vision will be helpful and appropriate budgetary allocation made available.
- Mobilizing the private sector to understand their role in the implementation of the NDC and combatting climate change will facilitate access to financing other than public finance.
- Since the part-implementation of the NDC is dependent on international support, government should set up the necessary machinery to facilitate access to international funds available for NDC implementation.
- Mainstreaming gender, vulnerability and inequality concerns in climate change adaptation, mitigation and resilience building is fundamental to successful engagement.
- A holistic planning, design and project implementation that involves the three tiers of government is imperative for achievement of project goals.

- A robust monitoring and reporting system for all climate related finance be established to account for all financial inflows to support environmental and climate activities.
- The practice of slash and burn by farmers and industries should be discouraged through an awareness campaign as well.
- The FMoE should lead by example by adopting renewable energy sources such as solar to power their offices and other installations and jettison the use of diesel/PMS powered generators. The Ministry of Environment is funding many Parks in Nigeria including National Park Headquarters, Kainji National Park, Oyo National Park, Chad Basin National Park, Gashaka gumti National Park etc. It is expected that their energy consumption should be relatively low; hence, renewable energy should be considered in powering these parks.
- Afforestation and Reforestation promotes ecosystem protection, restoration of natural habitats and biodiversity conservation. Therefore adequate budgetary allocation should be made available for Afforestation and Reforestation on a continuous basis. The advantage of this is the cleaning and greening of the environment, improvement in air quality, lowering temperature and sequestration of carbon for very long time. This preservation technique should not only be in rural forest areas. It should be extended to urban and peri-urban areas considering the carbon dioxide emission in industrialized urban centres. Carbon sequestration is one of the most potent means of addressing climate change, hence adopting this technique with trees of very long life spans will control erosion and simultaneously fight global warming, combat desertification through Reforestation in the shelter belts.
- The effective implementation and management of the Great Green Wall Programme has potentials for increasing the country's poverty reduction, biodiversity conservation as well as increasing the nation's forest cover. Nigeria should target getting at least 25 percent forest cover for its land.
- The project titled "Procurement of Clean Cook Stoves to Prevent Deforestation in six (6) Geopolitical zones (Yobe, Lagos Anambra, Rivers, Kwara, Katsina)" as listed in 2016 budget should be extended to cover the 36 states of the Federation and the Federal Capital Territory. Millions of Nigerians are affected by indoor air pollution. Tens of thousands of deaths annually are caused by exposure to smoke from open fires. Majority of Nigeria's millions of households use firewood. Hence, the financial challenges of increasing the scope of the project is nothing

compared with the health benefits of the projects, the climate conservation benefits as well as the finances saved by Nigerian families in the long run. The private sector, states and local government should come in to make the stoves very widely available.

- Allocation of funds for Research and Development is constant. However, there are no tangible deliverables to show for the expenditure over the years. Therefore, this line item should be utilized for demand driven research that solves practical and existential problems and to increase knowledge base for climate adaptation and mitigation measures.
- The Presidency/Secretary to the Government of the Federation should strengthen the interaction between the appropriate government departments, to aggregate the benefits of research.
- The Federal Government should review current policies and programmes for early warning, and based on this, develop and roll out a programme to improve availability and farmer access to short and long range weather forecasts.
- Ensure adequate annual budgetary allocation and timely release of funds for implementation of the provisions of the National Policy on the Environment, National Climate Change Policy Response and Strategy and, in particular, the amelioration of key environmental problems.
- Partner with the Presidency in the use of the Ecological Funds set aside from the Federation Account for the amelioration of ecological problems for environmental protection, natural resources conservation and environmental remediation of degraded and abandoned mining sites and other identified derelict sites.
- Emission tests for vehicles should be mandatorily done by the relevant Government agency and vehicles emitting above the set benchmark should be placed off road.

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