United Nations Industrial Development Organization

Climate Technology Centre & Network

Federal Ministry of Environment - Department of Climate Change

Federal Ministry of Science and Technology – Department of Environmental Sciences and Technology

Technology Needs Assessment and associated action plan for climate change mitigation and adaptation in Nigeria's most vulnerable economic sectors

Stakeholders' Mapping Report

Version 5.0

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Deloitte Tohmatsu Financial Advisory LLC

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List of Abbreviations

AE-FUNAI	Center for Climate Change, Alex Ekwueme, Federal University Ndufu-Alike Ikwo
AFDB	African Development Bank
CTCN	Climate Technology Centre & Network
ECN	Energy Commission of Nigeria
FMARD	Federal Ministry of Agriculture and Rural Development
FMEnv-DCC	Federal Ministry of Environment - Department of Climate Change
FMFBNP	Federal Ministry of Finance, Budget and National Planning
FMITI	Federal Ministry of Industry, Trade and Investment
FMP	Federal Ministry of Power
FMST	Federal Ministry of Science and Technology
FMST-DEST	Federal Ministry of Science and Technology – Department of Environmental Sciences and Technology
FMWASD	Federal Ministry of Women Affairs and Social Development
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas
MAN	Manufacturers Association of Nigeria
MDA	Ministries, Departments and Agencies
NACCIMA	Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture
NCIC	Nigeria Climate Innovation Centre
NDA	National Designated Authorities
NDCs	Nationally Determined Contributions
NDE	National Designated Entity
NGO	Non-governmental Organization
NIRSAL	Nigerian Incentive-Based Risk Sharing System for Agricultural Lending
NMFB	NIRSAL MicroFinance Bank
NPC	National Project Committee
OPS	Organised Private Sector
PSC	Project Steering Committee
TAP	Technology Action Plan
TNA	Technology Needs Assessment
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
WEP	Women Environmental Programme

1. Introduction

Pursuant to the United Nations Framework Convention on Climate Change (UNFCCC), Nigeria is establishing its commitment as a Party to the Convention by ascertaining the types of technologies that are best suited to its specific climate change situation in different sectors through the Technology Needs Assessment (TNA) and associated action plan for climate change mitigation and adaptation in Nigeria's most vulnerable economic sectors. TNA is specially designed to assist developing countries, that are party to the UNFCCC, determine their technology priorities for the mitigation of greenhouse gas (GHG) emissions and adaptation to climate change. By understanding these needs, a country can determine how to reduce GHG emissions and adapt to the adverse impacts of climate change.

Nigeria faces several climate challenges affecting different vulnerable sectors such as agriculture, energy, industry, transport and oil and gas. On climate impact, Nigeria is the second-largest emitter of GHG emissions in sub-Saharan Africa despite being a relatively small contributor to worldwide GHG emissions. It is estimated that Nigeria's GHG emissions will continue to increase by more than 58 percent until 2035. Notably, several vulnerabilities and climate risks have been identified including drought, water scarcity, desertification, low agriculture yields, and emerging epidemics. Nigeria has developed its nationally determined contributions (NDC) as a starting point for effective action on climate change; however, its country planning process is in its infancy stage. Nigeria continues to recognize these challenges in terms of identifying and introducing technologies in its Third National Communication to the UNFCCC in March 2020.

With the implementation of the TNA project, Nigeria is taking forward its commitment in the UNFCCC by determining the kind of technologies that are suitable for its unique climate change state. This report presents the stakeholder mapping conducted as part of the TNA process. Section 2 provides the general overview of the background and objectives of the TNA project. Section 3 discusses the stakeholder mapping process explaining the conceptual framework and describing how the analysis and evaluation of the stakeholders are conducted. Section 4 provides information on the stakeholder consultation process, with the Stakeholders' Consultation Report which supplements this report detailing how key stakeholders for the TNA process were engaged. Section 5 maps the key stakeholders to be involved as members of the TNA Project Steering Committee. Finally, section 6 presents the proposed institutional structure of the TNA Project Committee.

2. Background and Objectives of the TNA Project

The objective of the TNA project is to develop a comprehensive TNA and an action plan for climate change mitigation and adaptation. The TNA process involves the identification and prioritization of relevant technologies that can support the achievement of Nigeria's NDC and climate objectives. The results of the technology needs assessment will be the basis for the development of the technology action plan. The TNA and action plan will provide guidance for the implementation of Nigeria's climate action plans, and for enhancing access to climate financing such as the Green Climate Fund (GCF). It aims to address barriers for the implementation of the technologies, as well as take gender differentials into consideration and address the different needs, priorities and interests of women and men.

The TNA process is expected to be governed through a coordination mechanism that would provide oversight of the process, the TNA Project Committee.

3. Stakeholder Mapping Process

Before conducting the TNA, the TNA Project Committee needs to be established. The TNA Project Committee has a central role in the TNA process. It is responsible for oversight, validation of deliverables and outputs and for providing inputs throughout the process. It is thus essential that the TNA Project Committee is representative of Nigeria's stakeholders involved in climate change mitigation and adaptation activities, as well as in the sectors of focus of the TNA.

Stakeholder mapping will be conducted for the purpose of identifying key stakeholders in the public sector, private sector, civil society, academia and NGOs to ensure proper sectoral, transversal and climate-relevant representation of stakholders in the composition of the TNA Project Committee. The stakeholder mapping will also inform the structure of the TNA Project Committee.

3.1. Conceptual Framework: Relevance of Stakeholders in Enhancing Technology Needs Assessment

The conceptual framework of the stakeholder mapping considers the utmost relevance of stakeholders in conducting the TNA process. For the TNA, identification of technologies for climate change mitigation and adaptation should match early decisions of the TNA process and the actions Nigeria will implement to enable transfer and distribution of those technologies.

Importantly, technology has become a veritable tool for climate change policymaking and at the heart of this is the essence of mapping stakeholders to various sectors to drive efficiency in production, distribution and consumption of innovation. The technology needs assessment process is hands-on by both private and public sectors and requires input from these stakeholders at every stage. This couples with the fact that supporting the implementation of climate change mitigation and adaptation

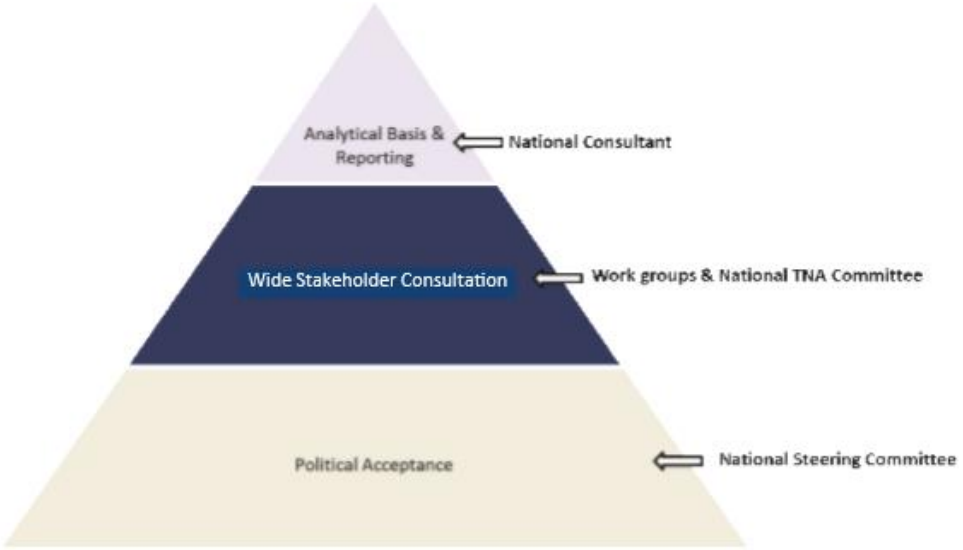
actions through technology needs assessment is multi-disciplinary and requires aggregating domain knowledge diversity for adequate identification of relevant technologies and action plan development.

In building relevant core competencies for the TNA and action plan, understanding background operations and overall activities of each stakeholders' umbrella organization provides further context into mapping stakeholders for subsequent consultation.

The conceptual framework further provides clarity on the authority and reporting lines for the TNA process as described in Figure 1.

Finally, it is also noteworthy to state that, achieving political stakeholders' buy-in for the TNA process is germane to the success of the project. Effective communication of political actors' priorities by the TNA Project Steering Committee will ensure smooth delivery of the project.

Figure 1 - Role of Main Stakeholder Groups

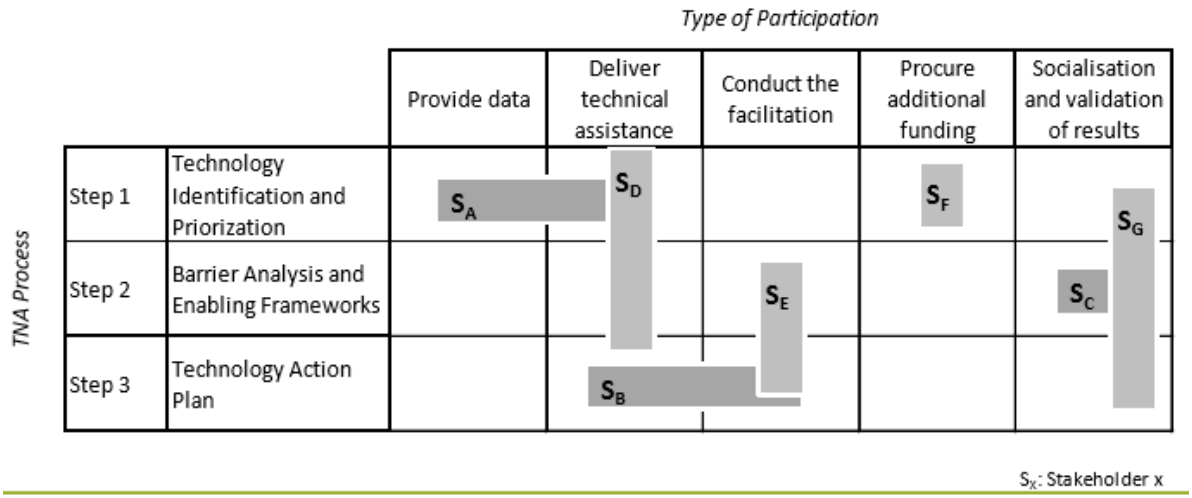


Source: (Dhar, Painuly, Nygaard, & Rogat, 2014)

3.2. Identification, Selection and Analysis of Stakeholders

The identification, selection and analysis of stakeholders are based on varying factors. These factors include type of profession, past and current roles in the TNA Project and TNA Project Steering Committee, sector relevance, resource mobilization, market role (finance, regulation and demand and supply) and stated interests.

Figure 2 - Stakeholder Participation Matrix



Source: UNEP & GEF Identification and Engagement of Stakeholders in the TNA Process

During the TNA participation, each step from a broad perspective provides clustering on areas each stakeholder operates. Stakeholders are mapped below as illustrated in Table 1.

Stakeholder A – Government, Academia, Organized Private Sector provides data and expected to deliver technical assistance under technology identification and prioritization

Stakeholder B – Academia, Organized Private Sector, Civil Society Organization,Government are responsible for both delivering technical assistance and conducting the facilitation of the technology action plan

Stakeholder C – Government is solely responsible for socializing and validating results from barrier analysis and enabling frameworks

Stakeholder D & E - Government, Academia, Organized Private Sector, Civil Society Organization delivers technical assistance across all steps of the project and expected to conduct facilitation under barrier analysis and enabling frameworks and technology action plan

Stakeholder F – Development Finance Institution, Government primarily focuses on funding and procurement of technology solutions recommended for implementation

Stakeholder G - Government, Regulator focuses on socializing and validating results across technology identification and prioritization, barrier analysis and enabling frameworks and development of the technology action plan

Table 1 - Selection Criteria for Stakeholders

Classification	Description	Characteristics
Type	Stakeholder's occupation type	Government, Organised Private Sector (OPS), research organizations, CSOs, regulators, multilateral organisations and academia
Sector	Priority sectors for the TNA project	Industry, Agriculture and Energy
Scale	Operational scale	National

Classification	Description	Characteristics
Market	Stakeholders market role in the TNA value chain process and sectors	Focus on finance, regulation, demand (consumption) and supply (production and distribution)
Interest	Level of interest in the TNA process and serving as a TNA Steering Committee Member	Participatory confirmation from stakeholders as a TNA Steering Committee member
Established TNA/Climate Change Implementation	Investment status in TNA/Climate Change infrastructure, process and other key inputs	Supportive, Very Supportive, Unsupportive, Driver, Integrator, Neutral
Resource Mobilization	Ability to mobilize non-human resources (funds, data and information on national strategies and sectoral documents) and human resources	Moderate, High, Low and Insignificant

3.3. Evaluation of Stakeholders Potential Influence on the Technology Needs Assessment Process

To achieve the successful implementation of the TNA across prioritized sectors, stakeholders in government, organized private sector, civil society organisations and academia play critical roles across every part of the process. Stakeholders can influence the various stages of the TNA process by their direct or indirect responsibilities such as supporting the TNA process, review outcomes/outputs and provide technical input to final outcomes/outputs. The under-listed roles indicate the potential influence of stakeholders on the TNA process:

- **Driver**

'Driver' expectations include steering the TNA project and ensuring the aforementioned responsibilities of the TNA Steering Committee is directed according to plan. The driver also monitors the delivery of outputs and ensure that coordination mecchanisms are in place to achieve the required results.

- **Influencer**

This entails promoting and supporting the activities of the TNA project. Promotional and supporting activities could require identifying other representatives of organisations that are vital for data collection and analysis.

- **Enabler**

The primary objective of enablers is to provide means and capabilities towards delivering on the TNA assignment. For instance, political actors could provide encouragement towards the TNA project by actively supporting the implementation of TNA action plan.

- **Financier**

In achieving the required results from the TNA project, funding plays a key role in unlocking opportunities within the entire project. For this stakeholder mapping, financial institutions could assist with financing key initiatives to drive the technology action plan.

4. Stakeholder Consultations

A stakeholder is a party that has influence and interests on the outcome of a TNA process, they also have an impact in the decision-making process. TNA stakeholders are involved in the decision-making process of the selection and prioritization of climate change mitigation and adaptation technologies and in the validation of the technology action plan to facilitate the transfer and distribution of environmentally sound technologies.

Stakeholder consultations were conducted as part of the stakeholder mapping process to identify key stakeholders relevant for the TNA process. The details of the stakeholder consultations are provided in the Stakeholders' Consultation Report. The methodologies in engaging the key stakeholders are provided in the Annex.

4.1. Analysis of Interests and Competencies

Stakeholders' are mapped based on interests and overall corporate objectives. Whilst the identification of stakeholders was mapped by different organisation competencies, converging interests for participation in the TNA Project Steering Committee as well as willingness to provide information to support the TNA process were other contributing factors. Certain stakeholders expressed interests towards making impactful decisions, indicating 'influencers' on the TNA process. These interests directly complement stakeholders' competencies when taking into account already existing actions and projects on climate change mitigation and adaptation.

5. Stakeholders in the TNA Process

Stakeholders for the TNA process are classified and segmented into various categories as shown in the table below. The identification and selection of stakeholders are largely dependent on the role they play as a member in the TNA Project Committee and their relevance to the outcome of the TNA process.

Table 2 - Current Mapping of Stakeholders

Stakeholder	Classification	Roles and Responsibilities	Relevance
Federal Ministry of Environment, Department of Climate Change	Government	**(UNFCCC Focal Point for Nigeria/Driver))** i) Direct the governance of the TNA project ii) Strategic implementation of TNA activities and engagements iii) Promotion and incorporation of identified technologies in NDC implementation, climate change adaptation and mitigation and other related activities in line with UNFCCC provision	Importance to climate change mitigation, adaptation and technology action plan; responsible for the NDCs and UNFCCC Reporting
Federal Ministry of Science and Technology – Department of Environmental Sciences and Technology	Government	**(Driver)** i) Plan and coordinate TNA activities and engagements including technical guidance ii) Strategic implementation of TNA activities and engagements iii) Pilot Technology transfer Projects of Technologies in the Action Plan	Importance to climate change mitigation and adaptation and technology action plan and piloting of selected technologies in the plan
Federal Ministry of Industry, Trade and Investment (FMITI)	Government	**(Enabler and Influencer)** i) Policy guidance for industries ii) Strategic implementation of TNA activities and engagements	Institutionalization and implementation of results from climate change mitigation and adaptation action plan
Women Environmental Programme (WEP)	Civil Society Organisation	**(Enabler)**	Gender-responsive climate change

Stakeholder	Classification	Roles and Responsibilities	Relevance
		i) Advocacy for women and youth participation across TNA process ii) Women and youth representation	mitigation and adaptation that addresses the priorities of Nigerian women and men
Manufacturers Association of Nigeria (MAN)	Organised Private Sector	**(Influencer)** i) Interface between members of MAN and TNA Steering Committee) ii) Engage with manufacturers on the recommendations on TNA action plans	Manufacturing compliance to climate change mitigation and adaptation action plan
Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA)	Organised Private Sector	**(Influencer)** i) Interface between members of NACCIMA and TNA Steering Committee) ii) Engage with industrialists in the recommendations on TNA action plans	Industry compliance to climate change mitigation and adaptation action plan
Nigeria Climate Innovation Centre (NCIC)	Private Sector	**(Enabler and Influencer)** i) Enhance market penetration for start-ups and businesses, improve the design of climate technologies and provide technical guidance for businesses) ii) Operational deployment of TNA activities and engagements and programme design	Technical input on designing innovative climate change activities and technologies for the TNA project
African Development Bank (AFDB)	Development Finance Institution (DFI)	**(Financier)** i) Funding	Funding across markets and sectoral/value chain processes
Center for Climate Change, Alex Ekwueme, Federal University Ndufu-Alike Ikwo (AE-FUNAI)	Academia	**(Influencer)** i) Provide technical guide, insights and data for the TNA process	Climate change mitigation and adaptation and technology action plan

Stakeholder	Classification	Roles and Responsibilities	Relevance
		ii) Insights, relevant data and analysis	
Federal Ministry of Power	Government	**(Enabler and Influencer)** i) Initiate and formulate broad policies and programmes on the development of the power sector (electricity) ii) Tactical deployment of TNA activities and engagements	Institutionalization and implementation of results from climate change mitigation and adaptation action plan
Federal Ministry of Agriculture and Rural Development	Government	**(Enabler and Influencer)** i) Create a conducive environment to stimulate greater sector participation in agriculture to enable the business side to assume it's appropriate role as the engine of economic growth ii) Strategic implementation of TNA activities and engagements	Institutionalization and implementation of results from climate change mitigation and adaptation action plan
Federal Ministry of Women Affairs and Social Development	Government	**(Enabler and Influencer)** i) Advocacy for women's participation across TNA process ii) Representation of women, youth and margilized groups	Gender-responsive climate change mitigation and adaption that addresses the priorities of Nigerian women and men
Federal Ministry of Finance, Budget and National Planning (FMFBNP)	Government	**(Enabler and Financier)** i) In-charge of statutory allocation of funds for the TNA Project. ii) Mobilizes grants and external loans iii) Strategic implementation of TNA activities and funds for projects	Importance to providing statutory funds for climate change mitigation and adaptation and technology action plan and piloting of selected technologies in the plan

NB: Deloitte consulting team was unable to secure meetings with Federal Ministry of Power (FMP), Federal Ministry of Agriculture and Rural Development (FMARD), and Federal Ministry of Women Affairs and Social Development (FMWASD) during the consultation timeframe. However, as these stakeholders are key government institutions for the TNA process, it is important to note that they are already identified as members of the steering committee.

6. The TNA Institutional Structure

Proceedings from the TNA Inception Workshop proposed the initial structure of the TNA Project Committee which was inaugurated by the Honourable Minister of Science and Technology. The TNA Project Committee, composed of the TNA National Project Committee and the TNA Project Steering Committee, were proposed to have membership detailed in Figure 3.

Figure 3 - Membership of the TNA Project Committee Inaugurated in the TNA Inception Workshop

A. Nigeria's TNA Project Committee (NPC)

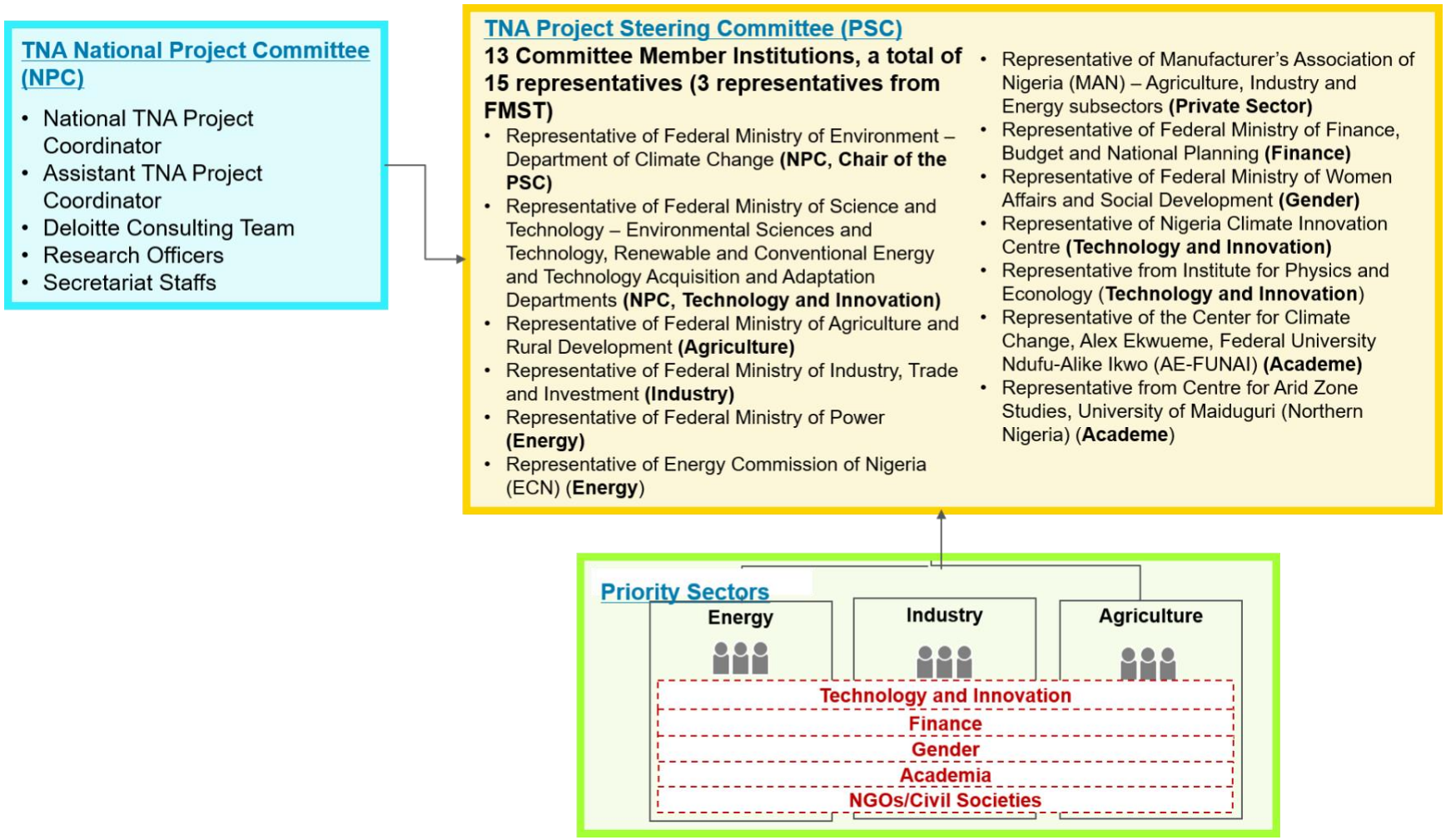
- National TNA Project Coordinator (FMST)
- Assistant TNA Project Coordinator (FMENV)
- Lead Consultant
- Agricultural Sector Consultant
- Energy Sector Consultant
- Industrial Sector Consultant

B. Nigeria's TNA Project Steering Committee (PSC)

- UNFCCC Focal Point;
- National TNA Project Coordinator;
- The three National Experts for the three sectors;
- Representative of the Federal Ministry of Agriculture and Rural Development;
- Representative of Federal Ministry of Power;
- Representative of Federal Ministry of Industry, Trade and Investment;
- Representative of the Academia;
- Representative of Civil Societies/ NGOs;
- Representative of Federal Ministry of Environment – Climate Change and Pollution Control Departments;
- Representative of Federal Ministry of Science and Technology – Environmental Sciences and Technology; Renewable and Conventional Energy; and Technology Acquisition and Adaptation Departments;
- Representative of Organized Private Sector – Manufacturer's Association of Nigeria (MAN) from Agriculture, Industry and Energy subsectors

Leveraging the proceedings of the TNA Inception Workshop, close consultations with FMEnv-DCC and FMST during the kick-off call and subsequent meetings, and results of the stakeholder consultation process, the composition of the TNA Project Committee was refined to ensure full representation of the necessary stakeholders to be involved for the TNA process. This includes public sector representation from relevant ministries of the focus sectors of agriculture, industry and energy, private sector representation of the focus sectors, and transversal representation from thematic areas of technology and innovation, finance, gender equality, academia and civil society organizations. The TNA Project Committee institutional structure is proposed as illustrated in Figure 4.

Figure 4 - Proposed Composition and Structure of the TNA Project Committee



Note: NPC composition is subject to amendment as project advances to forestall unforeseen bureaucratic bottlenecks.

TNA National Project Committee (NPC): The TNA National Project Committee will coordinate the TNA process and will be pivotal to the TNA project as they are a part of the major driving force of the TNA process. Members of the National Project Committee are illustrated in Figure 3.

The TNA Project Coordinator, represented by the Federal Ministry of Science and Technology (FMST) – Department of Environmental Sciences and Technology, will work in close collaboration with the expert consultants in each of the sector (Agriculture, Energy and Industry), the national TNA team and the Working Groups, including other experts and relevant stakeholders towards the implementation of the TNA project as outlined in the workplan.

The Assistant TNA Project Coordinator, represented by the Department of Climate Change of the Federal Ministry of Environment (FMEnv-DCC), will leverage its role as the National Designated Entity (NDE) to the UNFCCC Technology Mechanism, the Climate Technology Centre and Network (CTCN), and overall involvement in Nigeria's climate change-related matters to guide the TNA project and facilitate the task of communication among the related stakeholders in collaboration with the Project Coordinator.

Deloitte Consulting Team: These are subject matter experts in climate change mitigation and adaptation, climate finance, gender, energy, and policy delivering the tasks and supporting the TNA process and the TNA Project Committee. The consulting team has been commissioned by UNIDO/CTCN to deliver this project, and will be responsible for the delivery of its outputs.

Research Officers and Secretariat Staffs: Research officers are relevant scientific officers that will work closely with the consulting team. Secretariat staffs will support the effective coordination and communication among NPC members, PSC members, sector groups and other relevant stakeholders during the TNA process. The research officers and secretariat will be critical to the successful operation of the NPC.

TNA Project Steering Committee (PSC): The Project Steering Committee is comprised of the identified stakeholders relevant to the TNA process. Members of the Project Steering Committee as shown in Figure 3 constitutes proposed representatives from applicable ministries, departments, and agencies, private sector organizations, academia, civil societies/NGOs, and finance institutions.

The overall roles of the TNA Project Steering Committee include:

- Support the TNA process;
- Review outcomes/outputs;

- Provide technical input to final outcomes/outputs; and
- Ensure coherence and linkages between national climate change activities

As a member of the TNA Project Steering Committee, the overall responsibilities are itemized below:

- Provide necessary data and information
  - Identification and prioritization of technologies;
  - Identification of barriers and gaps;
  - Action plan development; and
  - Access to relevant national strategies and sectoral documents.
- Active engagement throughout the TNA process
  - Participation in at least 4 Committee meetings (April 2021, July 2021, October 2021, January 2022);
  - Participation in workshops to validate preselection and selection of technologies; and
  - Participation in workshops to validate the Technology Action Plan (TAP).
- Oversee the implementation of the project; and
- Collaborate with the TNA Project Coordinator to ensure endorsement of the project based on agreed timelines.
- Coordinate with the broader stakeholders within the **priority sectors and/or relevant thematic areas**, as necessary during the TNA process.

7. Conclusion

The preliminary stakeholder consultation achieved its objectives of identifying and engaging key stakeholders relevant to the TNA process. Stakeholders across various categories (government, organized private sector, civil society organisations and academia) demonstrated strong technical knowledge in the subject matter and willingness to participate in the TNA process.

Each stakeholder will provide unique value to every step of the TNA process (identification and prioritization of technologies, barrier analysis and enabling frameworks and development of the technology action plan). In later parts of the project, it is expected that these stakeholders will be continuously engaged to ensure the breadth of input to the TNA.

The Technology Needs Assessment is meant to provide stakeholders with deeper knowledge on improving the processes going forward. Tools and guidelines to serve these stakeholders will assist with enhancing the manner of engagement and their contributions to the TNA process. Importantly, dealing with various stakeholders successfully requires a “sense of flexibility” around a proposed set of guidelines.

Lessons from the preliminary stakeholder consultation are expected to be replicated in the post-TNA project implementation. Success in the post-TNA project implementation depends on involving the right people at the right time. In addition, delivering success for this phase requires acknowledging the complexities in innovation systems and partnership with each stakeholder toward achieving desired outcomes.

Next Steps

The next steps of the TNA project are outlined below:

- Coordination with the FMST-DEST and FMEnv-DCC on the finalization of the structure of the TNA Project Committee;
- Set up of the management office for the TNA Project Committee;
- Training of the TNA Project Committee members on the TNA process with a focus on quality assurance, oversight and multi-criteria analysis methodologies; and
- Development of a TNA Project Committee constitution.

Appendix 1

Keeping Key Stakeholders Engaged throughout the TNA process

Stakeholder engagement is an inclusive process that requires constant participation of the stakeholders throughout the TNA process of the project. Management of stakeholder relationships is important to keep the actors engaged during the TNA process. Table 3 illustrates the best practices Deloitte adopted for successful stakeholder consultations.

Table 3 - Best Practices Checklist for Successful Stakeholder Consultations

Checklist	Description
Targeted	Consultations were targeted towards specific stakeholders in the Agriculture, Energy and Industry sectors.
Early	Preliminary consultations commenced early and on track with the work plan to confirm the buy-in, participation of the identified stakeholders and to garner the perceived challenges and gaps of the TNA process that could impact the success of the TNA project.
Informed	Stakeholders were duly informed about the project synopsis, objectives, expected outcomes of the TNA process, and roles and responsibilities of the TNA Project Steering Committee.
Meaningful	The consultations were presented to stakeholders with a view of the local context of Nigeria's climate change situation.
Inclusive	The preliminary consultation workshop was inclusive of women and men. The Women's Environmental Programme brings the perspective of youth as well.
Gender-Sensitive	Gender considerations were factored in: a) Identification of the stakeholders which ensured the selection of a gender equality organization and/ MDA; Women Environmental Programme and Federal Ministry of Women Affairs and Social Development and b) The invitation of both women and men to represent stakeholders
Localised	All documentation and communication were localized to the official language of Nigeria; English and diverse ethnic groups were represented throughout this TNA preliminary consultation process.
Unbiased	Consultations were unprejudiced and free from manipulation of the responses of the stakeholders.
Documented	Meeting memos were documented for each stakeholder consultation workshop.

Checklist	Description
Feedback	Feedback to stakeholders is of precedence and clarification of next steps or any issue in the TNA process.
Follow-up	The preliminary stakeholder consultation workshop is the first of many stakeholder consultation workshops throughout the TNA project.

For continuous stakeholder engagement, it is essential to put in place various consultation tools and techniques to achieve optimum results and prevent information gaps for the TNA process. Table 4 shows the list of consultation tools and techniques.

Table 4 - Consultation Tools and Techniques for the TNA Process

Technique	Description
Questionnaires and Surveys	This is used for gathering of quantitative data by collecting, aggregating and analyzing the responses from a given set of both open and closed-ended questions. This tool can be applied to capturing detailed stakeholder knowledge.
Interviews	This is a qualitative technique like the preliminary stakeholder consultation workshop that captures information from the stakeholder on specific areas.
Field Observation	This involves observing stakeholder activities, processes and documentation of the processes and results. This technique can capture missing or vague information and technological barriers that were not properly captured during the questionnaires or interviews.
Workshops and Focus Groups	This can be used to identify an opposing point of view around a particular technology by bringing together stakeholders for a focused discussion on an identified topic or area and coming up with solutions to solve them.
Brainstorming	Stakeholders are required to brainstorm and submit ideas and concepts related to a specific topic or problem, this allows for the swift collation of responses and ideas at a moderately low cost.
Public Forums	Public forums bring the general public to an open platform to supply inputs into the decision-making process and can be used as an opinion forum for public concerns. Public forums capture stakeholders that may not have been identified or left out in the stakeholder identification process. For example, groups representing persons with disabilities.

Source: UNEP & GEF Identification and Engagement of Stakeholders in the TNA Process

Annex 2: Members of working group

Energy

- Chaired by: Federal Ministry of Power*
- Co-chair: Energy Commission of Nigeria (ECN)*
- Energy subsector representative from the Manufacturers Association of Nigeria*
- Federal Ministry of Environment – Department of Climate Change*
- Federal Ministry of Science and Technology - Environmental Sciences and Technology, Renewable and Conventional Energy and Technology Acquisition and Adaptation Departments*
- Transversal representation from Gender, Technology and Innovation, and Finance
- Other relevant key stakeholders (e.g., Federal Ministry of Petroleum Resources, Association of Nigerian Electricity Distributors (ANED), Renewable Energy Association of Nigeria)

Industry

- Chaired by: Federal Ministry of Industry, Trade and Investment*
- Co-chair: Manufacturers Association of Nigeria (MAN)*
- Industry subsector representative from the Manufacturers Association of Nigeria*
- Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture
- Federal Ministry of Environment – Department of Climate Change*
- Federal Ministry of Science and Technology - Environmental Sciences and Technology, Renewable and Conventional Energy and Technology Acquisition and Adaptation Departments*
- Transversal representation from Gender, Technology and Innovation, and Finance
- Other relevant key stakeholders (e.g., Federal Ministry of Mining and Steel, among others)

Agriculture

- Chaired by: Federal Ministry of Agriculture and Rural Development*
- Co-chair: Nigerian Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL)
- Agriculture subsector representative from the Manufacturers Association of Nigeria*
- Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture
- Federal Ministry of Environment – Department of Climate Change*
- Federal Ministry of Science and Technology - Environmental Sciences and Technology, Renewable and Conventional Energy and Technology Acquisition and Adaptation Departments*
- National Environmental Standards and Regulations Enforcement Agency (NESREA)
- United Nations Environment Programme Ecosystem Based Adaptation for Food Security Assembly (UNEP EBAFOSA) Nigeria
- Federal Ministry of Water Resources
- National Water Resources Institute
- Transversal representation from Gender, Technology and Innovation, and Finance
- Other relevant key stakeholders

Gender

- Chaired by: Federal Ministry of Women Affairs and Social Development*
- Co-chair: Women Environmental Programme
- Gender equality focal points from the key sector Ministries (i.e., Federal Ministry of Agriculture and Rural Development, Federal Ministry of Industry, Trade and Investment, and Federal Ministry of Power)
- Federal Ministry of Environment – Department of Climate Change*
- Other relevant key stakeholders

Technology and Innovation

- Chaired by: Federal Ministry of Science and Technology - Environmental Sciences and Technology, Renewable and Conventional Energy and Technology Acquisition and Adaptation Departments*

- Co-chair: Institute for Physics and Ecology Ltd/GTE*
- Federal Ministry of Environment – Department of Climate Change*
- Nigeria Climate Innovation Centre*
- Center for Climate Change, Alex Ekwueme, Federal University Ndufu-Alike Ikwo*
- UNEP EBAFOSA
- Other relevant key stakeholders

Finance

- Chaired by: Federal Ministry of Finance, Budget and National Planning*
- Co-chair: African Development Bank
- Africa Finance Corporation
- Central Bank of Nigeria
- Chartered Institute of Bankers
- Federal Ministry of Environment – Department of Climate Change*
- Federal Ministry of Science and Technology – Department of Environmental Sciences and Technology (DEST)*
- NIRSAL Microfinance Bank
- Other relevant key stakeholders

*: members of Project Steering Committee