Technology Needs Assessment and Technology Action Plan for Equatorial Guinea

Stakeholder Mapping Report

OIKO sustainable development on our finite planet

STAKEHOLDER MAPPING REPORT

Technology Needs Assessment and Technology Action Plan for Equatorial Guinea

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1. Background

This report has been prepared as part of the deliverables required by UNIDO for the project "Technical guidance and support to conduct a technology needs assessment (TNA) and a technology action plan (TAP) for Equatorial Guinea" as well as the deliverables defined in the Readiness Proposal of the GCF.

The overall goal of this consultancy is to provide technical assistance to Equatorial Guinea to enable the development of a comprehensive TNA and associated action plan of climate change mitigation and adaptation needs identified in Equatorial Guinea's prioritized sectors. This TA also entails conducting a categorization and prioritization of technologies that will comply with the Equatorial Guinean National Determined Contributions (NDCs) and other national, regional and international climate strategies.

The fundamental goal is to enable Equatorial Guinea to implement its climate targets using the most appropriate technologies. In this context, the TNA report and TAP will provide the necessary guidance to evolve the prioritized technologies and address the country needs in climate change adaptation and mitigation. The anticipated outcome of this TNA will present a number of strategic, long-term, participatory measures across the identified and prioritized sectors that will drive climate resilient and low carbon growth in Equatorial Guinea.

The Ministry of Agriculture, Livestock, Forests and Environment has been designated as a leading coordinating entity, as it is the ministerial department whose agenda is most closely aligned with the TNA process.

It is in this context that the ministry has chosen the Directorate-General for the Environment as the National Designated Entity (NDE) in the TNA process on climate change.

The TNA and TAP will enable Equatorial Guinea to organize its process in order to establish a coordination mechanism to assist in the prioritization of sectors and technologies that can be used by the Government to develop its pipeline of projects to be submitted to the Green Climate Fund (GCF).

One of the most important steps in the TNA process, to ensure the participation of all stakeholders, is to **stimulate a consultative and participatory approach** that can build a strong institutional strengthening to enable effective coordination of action. This can be done through an early mapping of all stakeholders, which will be crucial for the successful development of a stakeholder engagement strategy to facilitate dialogue among all involved actors and ensure a broader understanding of technologies and their contribution to sustainable development and climate targets.

The current report outlines the process that has been carried out for the stakeholder mapping, including the following steps:

a) the prioritized sectors and criteria for their selection, which were crucial in order to identify the key stakeholders in each one of the prioritized sectors;
b) the methodology and tools used to carry out the mapping;

c) a table summary and classification of all identified stakeholders; and
d) future steps that will be taken for the development of the stakeholder engagement strategy.

2. Objectives of the stakeholder mapping

First of all, as can be gathered from previous TNA experience carried out in other countries, the development of a comprehensive stakeholder mapping is one of the most important steps to ensure an overall successful TNA and TAP process. This is not only crucial so that needs and preferences of stakeholders are taken into account, but also to improve and enhance the implementation of the TNA (by involving policy makers and financial experts in the technological prioritization process, for example). It has been shown that the TNA requires a **solid organizational structure and a commitment** to the process by participants in the project team[1].

Second of all, by developing a detailed stakeholder mapping report, the foundations can be established for an extensive consultation with stakeholders, which in turn, will legitimize the TNA process, that essentially needs to be led by the country.

As a result, a stakeholder identification and mapping is crucial in order to specify roles and responsibilities. It aims at clarifying[2]:

a) Stakeholders involved and the importance of their role in climate technologies
b) Roles and responsibilities of each stakeholder in the TNA process
c) Experience and contributions to technology use
d) Adoption of men and women
e) Selection of stakeholders to engage in the process

3. Stakeholder analysis process

In order to successfully carry out the stakeholders analysis, certain activities (both administrative and organizational) aimed at achieving the goal of implementing a technology needs assessment (TNA) have been implemented in Equatorial Guinea. This process aimed at developing a TNA lays its foundation now in order to be highly participatory, as it requires the input and contributions from the different stakeholders at each stage.

1. First of all, the main key stakeholders were identified. The following are, as a summary, key stakeholders in the TNA and TAP process who may participate directly in the National TNA Committee:

    a. The **Ministry of Agriculture, Livestock, Forests and Environment** (**MAGBMA**), responsible for leading the coordination, and the National Bureau of Climate Change (**Oficina Nacional de Cambio Climático**), an entity under the same ministry.

[1] Technology Executive Committee (TEC) (2015). Good Practices of Technology Needs Assessments United Nations Framework Convention on Climate Change (UNFCCC), Bonn, Germany.
[2] As defined in the terms of Reference for the Development of the TNA and TAP for Equatorial Guinea

b. Ministries in charge of the different sectors:
    - Other divisions and sectoral departments of the Ministry of Agriculture, Livestock, Forests and Environment.
    - Ministry of Industry and Energy
    - Ministry of Mines and Hydrocarbons
    - Ministry of Fisheries and Water Resources
    - Ministry of Public Works and Infrastructure
    - Ministry of Transport, Technology, Mail and Telecomunications / ASECNA (Agencia para la Seguridad de la Navegación Aérea en Africa y Madagascar)
    - Ministerio del Interior (Municipalidades)

c. The private and autonomous sector:
    - MEGI (Mobil Equatorial Guinea Inc) (oil producer)
    - Amerada Hess EG (oil & gas producer)
    - MEGPL (Marathon Equatorial Guinea Production Limited) (oil producer)
    - Noble Energy (hydrocarbons exploration)
    - SEGESA (*Sociedad de Electricidad de Guinea Ecuatorial*) (national electricity company)
    - Equatorial Guinea Liquefied Natural Gas (EG-LNG) (processing and export of liquefied gas)
    - National Gas Society of Equatorial Guinea (SONAGAS- GE (distribution of liquefied gas)
    - INDEFOR (*Instituto de Desarrollo Forestal* / Institue of Forestal Development)
    - GEPETROL (National Oil Company)
    - SONAPESCA (*Sociedad Nacional de Pesca Marítima de Guinea Ecuatorial* / National Maritime Fisheries Society of Equatorial Guinea)
    - ENPIGE (*Ente Público de Gestión Inmobiliaria de Guinea Ecuatorial* / Public Real Estate Management Entity of Equatorial Guinea)
    - EMPRESA RAZEL FAYAT (Industrial, Civil & Urban Engineering)
    - Guinea Limpia/ENR-GE SL (National Recycling)

d. Academic and Research Organizations:
    - National University of Equatorial Guinea (UNGE, Universidad Nacional de Guinea Ecuatorial)
    - Scientific and Technological Research Committee (CICTE, Comité de Investigación Científica y Tecnológica)
    - The American University of Central Africa (AAUCA, Universidad Americana de África Central)

e. Gender focal points:
    - Ministry of Social Affairs and Gender Equality

f. Vocational training and training centres:
    - School of Agricultural Training (ECA)
    - Professional and Occupational Center October 12
    - MODESTO GENE ROIG Polytechnic Institute

- National Hydrocarbons Institute of Equatorial Guinea (ITNHGE)

g. Non-Governmental Organizations (NGOs):
   - ANDEGE, Amigos de la Naturaleza y del Desarrollo de Guinea Ecuatorial: NGO that pursues the conservation of biodiversity and habitats without neglecting the human and economic development of communities living in the best preserved areas of Equatorial Guinea. (http://andege-ong.blogspot.com)
   - Association for Local Development (ADELO, Asociación para el Desarrollo Local): NGO that supports community initiatives to combat poverty and towards environmental sustainability.
   - ASAMA, Asociación de Apoyo a la Mujer Africana
   - ADMAD

Table 1. Identified NGOs' activity sectors and representatives

Name	Acronym	Representative	Activities	Contacts
Asociación de Desarrollo Local	ADELO	Leocadio Ndong	Desarrollo local y medioambiental	ndongmonumu@gmail.com Tel: +240222 270 463
Amigos de la naturaleza y el desarrollo de Guinea Ecuatorial	ANDEGE	Domingo Mbomio Nguema	Medioambientale, formaciones desarrollo social y comunitario	domingombomio@yahoo.fr
Asociación de Apoyo a la Mujer Africana	ASAMA	Sinforosa Nchama	Apoyo a la mujer y al desarrollo del medio ambiente	sinfo72@yahoo.es Tel: +240 222 275173
Acción duradera para el medio ambiente y el desarrollo	ADMAD	Eloísa Sales Ipuwa	Educación, formación, medioambiente, desarrollo social y comunitario	Tel: +240222 271 241/ 222 081 588

2. Once the key stakeholders were identified, the work was to develop a brief description of the responsibilities and functions of the promoter stakeholders:

Within the national stakeholder planning and organization process, the roles and responsibilities of MAGBMA, INCOMA and Focal Point for Climate Change are briefly described.

MAGBMA (Ministry of Agriculture, Livestock, Forests and Environment) is responsible for ensuring compliance with the basic standards of conservation, protection and recovery of the environment by promoting the sustainable use of natural resources, with the aim of achieving sustainable human development in the country.

Within the TNA process, MAGBMA is represented by the Directorate-General for the Environment as the NDA; whose role is the formulation of the national pollution prevention policy and environmental control, quality and assessment; through a system of administrative intervention, in general, and in the specific context of this document, as a supervisory entity of the process.

The **National Bureau of Climate Change** *(Oficina Nacional del Cambio Climático)*, is responsible for formulating national climate change policy, in accordance with national and international regulations. And in the context of the TNA process, it works in close collaboration with the NDA.

INCOMA (National Institute for Environmental) is responsible for identifying the set of measures and policies aimed at improving the natural environment, monitoring, preventing, reporting and combating threats against it and preventing its deterioration. Moreover, INCOMA is working closely with the international consultants to facilitate the TNA process locally.

MAGBMA has been designated as a leading coordinating entity, as it is the ministerial department whose agenda is most closely aligned with the technology needs assessment process. It is in this context that the ministry has chosen the **Directorate-General for the Environment** as the National Designated Entity (NDE) in the ENT process on climate change.

The specific roles corresponding to the remaining stakeholders will be clarified, as progress is made in the TNA process. Table 2 includes a tentative selection of the TNA Committee members and roles:

Table 2. Tentative TNA Committee members and roles

Name	Institution	Role	Contact
Gabriel Ngua Ayecaba	MAGBMA	Managing Director	gnguaayecaba@gmail.com
Antonio Micha Ondo	INCOMA	Managing Director	ammicha025@gmail.com
Antonio Nathanael Owono Eworo Merina	Ministry of Industry and Energy	Deputy chief (Renewable Energy Sector)	Owonon75@gmail.com Tel: +240555608153
Antonio Mª Asumu Nfumu	Ministerio de Minas e Hidrocarburos	Jefe de sección de Medio Ambiente	asumuantonio@gmail.com Tel: 222220919
Leoncio Mba Okue	Ministerio de Pesca y Recursos Hídricos	Technician	Vertice1980@gmail.com Tel: +240222252103
Ana Belén Nkono Nguema	Ministerio de Obras Públicas Viviendas y Urbanismo	Technician	abelnkomo@yahoo.es Tel: +240222587020
Santiago Nsue Esono	Universidad Nacional de Guinea Ecuatorial	Vice-Dean of the Faculty of Engineering	sansue.1979@gmail.comT Tel: +240222237400
Nicanor Ela Nkogo	SEGESA	Technical advisor (energy sector)	Tel: +240222275381
José Manuel Borillo Aranda	Escuela de Capacitación Agraria (ECA)	Managing Director	N/A
Domingo Mbomio Nguema	ANDEGE	Representative	domingombomio@yahoo.fr

4. Prioritized sectors and criteria for their selection

Equatorial Guinea has already developed a National Adaptation Action Programme (PANA, 2013) to identify priority actions to reduce its vulnerability to the effects of climate change. Water, agriculture and forests, fisheries, the hydroelectric sector and infrastructure (especially coastal developments and road constructions) were identified as the most vulnerable sectors to the effects of climate change.

As a result, and on the basis of the projects identified the Country Programme (Programa País), with the support of GCF the following sectors were selected: (1) agriculture, (2) forests and environment, (3) energy, (4) transport, (5) infrastructure, (6) water and coasts, (7) mining and (8) waste.

The choice of priority sectors has been based on data collection, bibliographic review of official documents and the application of a number of criteria, as arising from the above-mentioned "Prioritization of Sectors" document. These criteria are:

1. **Level of contributions to GHG (Greenhouse gas) emissions.** The analysis was based on the First Communication to the United Nations Framework Convention on Climate Change (PNC-GE), data collected in the section on national greenhouse gas inventory. It was observed that only the energy sector exceeded the critical threshold of 75%, reaching an emission higher than 80%.
2. **Vulnerability to the effects of climate change**. Its analysis was based on data collected in both the PCN-GE and the information reflected in the National Climate Change Adaptation Action Plan (PANA, 2013). Both documents state that Equatorial Guinea is a country highly vulnerable to the effects of climate change.
3. **Priority for future investments in Equatorial Guinea**. This parameter was analysed taking into account the data flashed in the document of the National Investment Plan REDD+ (PNI-REDD+, *Plan Nacional de Inversión REDD+*), reflecting the prioritization of investment in the sectors.
4. **Importance of the social impact**. Information discussed in the document "Agenda Equatorial Guinea 2035 (AGE-H2035)", where important projects for Equatorial Guinean society are shown. It has also been based on the experience of national consultants.
5. **Importance for the economic development of the country**. Analysis based on documents (AGE-H2035) and (PNI-REDD+). Both express the importance of sustainable economic diversification for the country.
6. **Adaptation and Mitigation capacity** were both analysed on the basis of the PANA (National Adaptation Plan) and PCN-GE documents. These include projects to address the effects of climate change.

In view of the references referred to in the preceding paragraphs, the national team of consultants prioritized sectors based on sector-based parameters, weights and qualifications. See table 3.

Table 3. Sector prioritization matrix

PARAMETRES	SCALE	WEIGHTING /RATING	SECTORS							
			Energy	Infrastructure	Water and coasts	Waste	Agriculture	Forests and Environment	Mines	Transport
Level of contributions to GHG emissions	0-6	0-2 Low 3-4 Medium 5-6 High	6	2	1	3	3	1	0	2
Vulnerability to the effects of climate change	0-6	0-2 Low 3-4 Medium 5-6 High	3	4	5	2	6	6	3	3
Priority for future investments in GE	0-6	5-6 Short-term 3-4 Medium-term 0-2 Long-term	6	6	6	6	6	6	6	6
Social importance	0-6	0-2 Low 3-4 Medium 5-6 High	6	6	6	1	6	4	3	6
Importance for the country's economic development	0-6	0-2 Low 3-4 Medium 5-6 High	6	5	6	3	5	6	4	5
Adaptation capacity	0-6	0: Uncertain 1-2: Short-term 3-4: Medium-term 5-6: Long-term	2	2	2	0	2	2	1	0
Mitigation capacity	0-6	0: Uncertain 1-2: Short-term 3-4: Medium-term 5-6: Long-term	1	0	0	0	0	1	0	1
QUANTIFICATION			30	25	26	15	28	25	17	23
CATEGORIZATION			1	4	3	8	2	5	7	6

Source: INCOMA

The following 4 sectors were obtained from the resulting matrix between the eight sectors identified by the Country Programme and the seven parameters:

1.	Energy (Electricity and Mines)
2.	Agriculture (Livestock and Forestry)
3.	Waters and Coasts (Fishing and Water Resources)
4.	Infrastructure (Construction and Housing)

5. Methodology

The stakeholder analysis has been the first step taken by the team of consultants to identify the people who will carry out the project. This has involved key sectoral groups on which all stakeholders were selected as a representative group for the decision-making in the TNA process.

5.1. Toolbox for the mapping

The following table identified the main techniques used in the key actor mapping process. These tools, identified through the Guide to for National TNA Teams (UNEP, 2015) have been the basis for the preparation of this report.

Table 4. Tools and techniques used for the stakeholder mapping

Technique	Description[3]	Application in stakeholder mapping
Brainstorming	Brainstorming with stakeholders allows for rapid collection of input ideas at relatively low cost. Stakeholders are asked to submit ideas and concepts related to a specific topic or problem.	Used to: a) Mapping the entire field (led by INCOMA) b) Presentation of a preliminary matrix of all stakeholders
Field Observation	A targeted field observation can take many shapes and forms, but involves watching stakeholder activities and processes, and documenting processes and results. These observations can then be used to describe requirements based on what was observed and have the added benefit of allowing the user to identify processes or activities that may have been missed during surveys or interviews.	Used to: c) Communicate the TNA process to a wider audience d) Identify and address public concerns
Consultation workshops/Interviews	Interviews are a primarily qualitative method that allow the user to ask questions and gain responses from the stakeholder on specific areas and topics, and allow for adaptive interviewing techniques where new information, pertinent to the overall objectives of the study, can be added to the interview questionnaire as it is brought up during the interview process	Used to: e) Mapping the entire field (led by INCOMA) f) Get information about a specific subsector or barriers to technology g) Identify major technological barriers when observing stakeholder activities.

Source: INCOMA, adapted from OIKO.

[3] Based on the *Guide for National TNA Teams* (UNEP, 2015)

5.2. Stakeholder classification

This section explains how the stakeholder classification and analysis has been carried out, based on the 4 reference sectors. The final selection of stakeholders has been carried out based on their affinities with the involved sectors.

5.2.1 Process roles for the identified stakeholders

The classification proposed by Santandreu (2014) in the table below has served as a preparation for the stakeholder analysis in relation to their roles in the TNA process (see Table 6 of Section 6).

Table 5. Process roles for stakeholders

Decision-making entity	Policymakers	Technical Support	Interest and Opinion	Social and Institutional Support	Get additional funding
MAGBA (Ministerio de Agricultura, Ganadería, Bosques y Medio Ambiente)	• Regional environmental authorities • Government authorities (such as the ministries of Trade, Industry, Agriculture, Finance, Energy and Transport).	• Academic institutions (technical background) • Researchers • Private companies (large industries and SMEs) • Financial institutions • Cooperation agencies and consultants	• Business associations, private sector	• NGOs • Local authorities • Communications officials • Media	• Ministry of Finance • International Cooperation • Public investors

Source: Based on the classification proposed by Santandreu (2014) in *Identificando y Comprometiendo a las Partes Interesadas en el Proceso de ENT – Guía para los equipos nacionales de ENT*.

5.2.2 Responsibilities on climate technologies

All ministries generally have identical responsibilities on climate change in terms of climate technologies:

- Providing crucial industry information
- Certification of conformity or relevance of results in terms of the choice of technologies

Universities, research and academic entities (professional centres), usually have the following responsibilities:

- Orient research from university departments to the context of appropriate technologies

- Include in the curriculum system subjects and research on appropriate technologies

Non-governmental organizations participate in:

- Raising the public's awareness on climate change technologies

All companies, whether private or state-owned, contribute to the TNA process in:

- Provision of information on the technologies used in their respective sectors
- Certification and prioritization of relevant technologies in their respective sectors

International agencies play the technical support role in the use of appropriate technologies. It should be noted that the African Development Bank (ADB), Green Climate Fund (GEF) and agencies promoting the REDD+ process can support the financing of some climate change technologies.

5.2.3. Relevance in the TNA process

All ministries generally have an identical relevance in the TNA process:

- Availability of information from their sectors and sub-sector
- Validation of the consulting tasks

Universities, research and academic entities (professional centers), also are relevant in the TNA process, mainly in the following activities:

- Promoting research culture at the university on appropriate technologies
- Knowledge production and the use of climate-appropriate technologies in different engineering

Non-governmental organizations participate in raising public awareness by representing civil society in these matters.

All enterprises, whether private or state-owned, are particularly relevant to the TNA process as relevant technology managers and indicators.

International agencies largely play the role of globalization and harmonization of criteria, and as technical support.

6. Gender mainstreaming and gender-responsiveness[4]

Throughout the course of the stakeholder mapping it has been crucial to start the implementation of a gender perspective that is set on the adoption of both men and women in the process, and that can last during the whole TNA process. The consultations with relevant stakeholders ensured that, as far as possible, gender-sensitivity was taken into account during the process, meaning that both the perspectives of men and women were included.

Understanding the importance of supporting a gender-responsive TNA implementation, during the stakeholder mapping phase our team started including some guidelines of the UNEP DTU Partnership guide on mainstreaming gender in the TNA process: "Guidance for a gender-responsive technology Needs Assessment" (De Groot, 2018), as a starting point to ensure a gender-sensitive TNA. As a result, our team will ensure that gender issues are treated as part of both sector and technology selection. Our team will base its analysis (although not limit it to), the questions listed in Table 6.

Table 6. Relevant questions for a gender-responsive TNA process

Relevant questions for a gender-responsive TNA process
• What is the current national literature, reports and policy documents on the gender context?
• What are the legally binding gender-related international and regional human rights instruments, commitments and policies that have been signed by the country?
• Are there any government programs relevant to the project that address gender inequalities?
• Are there any relevant gender indicators that are regularly monitored nationally, e.g. by the National Bureau of Statistics or by an agency reporting on national development plans? Or are there existing gender and climate policies available –such as the International Union for Conservation of Nature's climate change and gender action plans or country gender profiles (UNIDO, 2014)?
• Are there any existing gender and climate policies in the country?
• How does the TNA process relate to gender equality processes nationally for each of the chosen sectors and subsectors, and how can the TNA help achieve gender goals in specific sectors and sub-sectors?

Source: Compilation based on the Guidance for a gender-responsive technology Needs Assessment (De Groot, 2018).

[4] As the TNA implementation is still in a preliminary phase, the gender mainstreaming process is, likewise, still in a very early stage. The institutional gender analysis is ongoing but no report on the gender considerations is available as of January 2021.

7. Summary of the stakeholder mapping

Table 7. Table Summary of the stakeholder mapping

STAKEHOLDERS		CATEGORY	PROCESS ROLES	RESPONSIBILITIES ON CLIMATE CHANGE TECHNOLOGIES	RELEVANCE IN THE TNA PROCESS
MINISTERIO DE AGRICULTURA, GANADERÍA, BOSQUES Y MEDIO AMBIENTE. (MAGBMA)	Dirección General de agricultura	STATE	Policymaker	• Providing sectorial information (agriculture) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the Agriculture Sector
	Dirección General de Ganadería	STATE	Policymaker	• Providing sectorial information (livestock) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the Livestock Sub-sector (Agriculture Sector)
	Dirección General de bosques	STATE	Policymaker	• Providing sectorial information (livestock) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the Forestry Sub-sector (Agriculture Sector)
	Dirección General Punto focal cambio climático	STATE	Decision-making entity	• Coordination between different stakeholders	Ensuring compliance with UNFCCC guidelines
	Dirección General Medio Ambiente	STATE	Decision-making entity	• National Designated Authority for the TNA Process	Validation of the consulting task
	INDEFOR (El Instituto Nacional de Desarrollo Forestal)	PRIVATE SECTOR	Technical Support	• Provision of information on mitigation and adaptation in the Forestry sub-sector (Agriculture Sector)	Reliable data availability
	ANDEGE (ONG Nacional de Conservación de la Naturaleza)	NGO	Decision-making entity	• Raising awareness of the population	Representativeness of civil society
	BBPP: Program for the protection of biodiversity	NGO	Decision-making entity	• Raising awareness of the population	Representativeness of civil society

	in Bioko (US and EQG NGO)				
MINISTERIO DE INDUSTRIAS Y ENERGÍA	Dirección General Industria	STATE	Policymaker	• Providing sectorial information (industry) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the sub-sector Industry (Energy Sector)
	Dirección General Energia	STATE	Policymaker	• Providing sectorial information (energy) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the Energy Sector
MINISTERIO DE MINAS E HIDROCARBUROS	Dirección General de Minas y canteras	STATE	Policymaker	• Providing sectorial information (energy) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the Mining sub-sector Mines (Energy Sector)
	Dirección General Hidrocarburos	STATE	Policymaker	• Providing sectorial information (energy) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the sub-sector Hydrocarbons (Energy Sector)
	GEPETROL	AUTONOMOUS ENTITY	Interest and Opinion	• Providing information on the technology used in the Energy Sector	Manager and indicator of relevant technologies
	SONAGAS	AUTONOMOUS ENTITY	Interest and Opinion	• Providing information on the technology used in the Energy Sector	Manager and indicator of relevant technologies
MINISTERIO DE PESCA Y RECURSOS HÍDRICOS	Dirección General de Pesca	STATE	Policymaker	• Providing sectorial information (water and fisheries) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the sub-sector Fisheries (Water and Coastal Sector)
	Dirección General Recursos Hidricos	STATE	Policymaker	• Providing sectorial information (water and fisheries) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information in the water and coastal resources sub-sector

	SONAPESCA	AUTONOMOUS ENTITY	Interest and Opinion	• Providing information on the technology used in the Water and Coastal sector	Manager and indicator of relevant technologies
	HIDROWAT	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technology used in the Water and Coastal sector	Manager and indicator of relevant technologies
	ARAB CONTRACTOR	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technology used in the Water and Coastal sector	Manager and indicator of relevant technologies
	TERRATECK	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technology used in the Water and Coastal sector	Manager and indicator of relevant technologies
	CGGC (China Gezhouba Group Corporation)	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technology used in the Water and Coastal sector	Manager and indicator of relevant technologies
MINISTERIO DE ECONOMIA HACIENDA Y PLANIFICACION.	Dirección General planificacion	STATE	Policymaker	• Providing information on development sector planning	Provision of information on development sectors
	Dirección General de Inversiones publicas	STATE	Policymaker	• Providing information on the prioritization of investment in development sectors	Availability of advance funding information
	Dirección General presupuestos	STATE	Policymaker	• Providing information on development sector budgets	Availability of advance funding information
	Dirección General de Presupuesto	STATE	Policymaker	• Providing sectorial information (infrastructure) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of Information from the Infrastructure Sector
MINISTERIO DE OBRAS PUBLICAS E INFRAESTRUCTURAS	Dirección General de Infraestructuras	STATE	Policymaker	• Providing sectorial information (infrastructure) • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the sub-sector Urbanism(Infrastructure Sector)
	Dirección General Urbanismo	STATE	Policymaker	• Providing information on the technology used in the Infrastructure Sector	Manager and indicator of relevant technologies

	EMPIGE	AUTONOMOUS ENTITY	Interest and Opinion	• Providing information on the technology used in the Infrastructure Sector	Manager and indicator of relevant technologies
	EMPRESA RAZEL FAYAT	PRIVATE SECTOR	Interest and Opinion	• Research on information on appropriate technologies	Support and coordination of scientific and technological research
MINISTERIO DE TRANSPORTE, TECNOLOGÏAS; CORREOS Y TELECOMUNICACIONES	ASECNA	STATE	Policymaker	• Providing information on the technology used in the Sector	Manager and indicator of relevant technologies
MINISTERIO DEL INTERIOR	Municipalidades	STATE	Policymaker	• Providing sectorial information	Manager and indicator of relevant technologies
	Guinea Limpia	STATE	Policymaker	• Providing sectorial information • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the Waste Sector
	ENR-GE SL	STATE	Policymaker	• Providing sectorial information • Certification of conformity or relevance of results in terms of the choice of technologies	Availability of information from the Waste Sector
COMITE DE INVESTIGACION CIENTIFICA Y TECNOLOGICA (CICTE)	Dirección General CICTE o Coordinador de investigación	PUBLIC SECTOR	Technical Support	• Orient research from university departments to the context of appropriate technologies	Promoting research culture at the university on appropriate technologies
UNIVERSIDAD NACIONAL	Dirección General de Investigacion	AUTONOMOUS ENTITY	Technical Support	• Include in the academic curriculum subjects and research on appropriate technologies	Knowledge production on the subject of climate-appropriate technologies
	Facultad de medio ambiente	ACADEMICS	Technical Support	• Include in the academic curriculum subjects and research on appropriate technologies	Knowledge production and the use of climate-appropriate

					technologies to different engineering faculties
	Facultad de Ingeniera: 1. Ciencias Agropecuarias 2. Ciencias Forestales 3. ingeniería de Pesca 4. Ingeniera de Minas	ACADEMICS	Technical Support	• Awareness-raising on the use of technologies	Representativeness of civil society
	Asociación para el Desarrollo Local (ADELO)	CIVIL SOCIETY	Social and Institutional Support	• Awareness-raising on the use of technologies	Representativeness of civil society
	AMIFLORA	CIVIL SOCIETY	Social and Institutional Support	• Awareness-raising on the use of technologies	Representativeness of civil society
	Bicam Afan	CIVIL SOCIETY	Social and Institutional Support	• Providing information on the technologies used in the Hydrocarbons Sub-Sector	Manager and indicator of relevant technologies
EMPRESAS EXPORTADORAS DE PETRÓLEO	MEGI	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technologies used in the Hydrocarbons Sub-Sector	Manager and indicator of relevant technologies
	Amerada Hess EG	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technologies used in the Hydrocarbons Sub-Sector	Manager and indicator of relevant technologies
	MEGPL	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technologies used in the Hydrocarbons Sub-Sector	Manager and indicator of relevant technologies
	Noble Energy	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technologies used in the electrical energy sub-sector	Manager and indicator of relevant technologies
POWER COMPANIES	SEGESA	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technologies used in the electrical energy sub-sector	Manager and indicator of relevant technologies

GAS COMPANIES	Equatorial Guinea Liquefied Natural Gas (EG-LNG) (in processing and export)	PRIVATE SECTOR	Interest and Opinion	• Providing information on the technologies used in the electrical energy sub-sector	Manager and indicator of relevant technologies
	Sociedad Nacional del Gas de Guinea Ecuatorial (SONAGAS- GE). (distribution of liquefied gas)	STATE	Interest and Opinion	• Technical support for the use of appropriate technologies	Globalization and harmonization of criteria
INTERNATIONAL ORGANIZATIONS	FAO	INTERNATIONAL	Technical, Social and Institutional Support	• Awareness-raising on the use of technologies	Comprehensive knowledge of the importance of using appropriate technologies
	PNUD	INTERNATIONAL	Technical, Social and Institutional Support	• Technical support on the use of appropriate technologies	Globalization and harmonization of criteria
	CI-EG (Conservación Internacional en Guinea Ecuatorial)	INTERNATIONAL	Technical, Social and Institutional Support	• Technical support on the use of appropriate technologies	Globalization and harmonization of criteria
	CARPE (Programa Regional de África Central para el Medio Ambiente)	INTERNATIONAL	Technical, Social and Institutional Support	• Technical support on the use of appropriate technologies	Globalization and harmonization of criteria
	BBPP: Programa de Protección de la Biodiversidad en Bioko, ONG estadounidense-ecuatoguineana	INTERNATIONAL	Technical, Social and Institutional Support	• Technical support on the use of appropriate technologies	Globalization and harmonization of criteria
	WWF (Fondo Mundial para la Naturaleza)	INTERNATIONAL	Technical, Social and Institutional Support	• Technical support on the use of appropriate technologies	Globalization and harmonization of criteria

GENDER FOCAL POINTS	To be determined	CIVIL SOCIETY	Technical, Social and Institutional Support	• Awareness-raising on the use of technologies	Comprehensive knowledge of the importance of using appropriate technologies
CAMARA DE COMERCIO (CHAMBER OF COMMERCE)	-	STATE	Social and Institutional Support	• Pronation of organic products	Caring for the environment in production

Table 8. Experience and contributions to technology use

Stakeholder category	Experience and contributions to technology use
STATE / PUBLIC SECTOR	As an important decision-making entity and policy-maker, the state will have a central role in the contributions to the technologies that are ultimately selected and used after the TNA process in Equatorial Guinea. The state will certify its conformity with the selection in the choice of technologies as well as the relevance of the results obtained during the consultation process with the other stakeholders.
PRIVATE SECTOR	The private sector will have the role of providing technical support for the use of appropriate technologies in the TNA process. Moreover, it will be in charge of providing information on the technologies used in each one of the chosen sectors.
NGOs / CIVIL SOCIETY	NGOs and civil society will contribute to the provision of information on the technologies used in each of the sectors. They will be consulted on their conformity in terms of the choice of technologies, as they are be included in the stakeholder consultations. Civil society also can assume the role of awareness-raising of the population on the use of technologies as well as on other aspects of the TNA process.
INTERNATIONAL	International stakeholders, such as other development agencies, will mainly provide technical inputs on the use of appropriate technologies.
ACADEMICS	The academic sector (research institutions, universities, etc.) also can contribute to technology use during and after the TNA process. Beside the possible inclusion in the academic curriculum of subjects and research on appropriate technologies and TNA process outcomes for Equatorial Guinea, they can be a source of technical advice and input on the choice of technologies.

8. Next Steps: Methods to keep stakeholders engaged

Once the sectors were identified and prioritized, the team of consultants mapped the key stakeholders based on the interaction of different entities with those sectors. It is in this context that INCOMA, within its planning/organization program, formulated an administrative implementation procedure; consisting in proposing the NDA to contact and convene the stakeholders throughout the national territory. A tentative programme of meetings and workshops would be submitted for approval by the NDA, after consultation by the stakeholders.

9. References

Rogat, J. (2015). Identification and Engagement of Stakeholders in the TNA Process A Guide for National TNA Teams. UNEP DTU Partnership.

Comité Ejecutivo de Tecnología (TEC) (2015). Buenas Prácticas de Evaluaciones de Necesidades Tecnológicas Convención Marco de las Naciones Unidas sobre el Cambio Climático (CMNUCC), Bonn, Alemania.

Ministerio de Pesca y Medio Ambiente (MPMA), República de Guinea Ecuatorial (2015). Contribuciones Previstas y Determinadas a Nivel Nacional (Contribuciones Nacionales) (CPDN), Malabo.

Ministerio de Agricultura, Ganadería, Bosques y Medio Ambiente, Dirección General de Medio Ambiente (MAGBA) (2019). Primera Comunicación a la Convención Marco de las Naciones Unidas sobre el Cambio Climático (PNC-GE), Malabo.

Ministerio de Pesca y Medio Ambiente (MPMA), República de Guinea Ecuatorial (2013). Plan de Acción Nacional de Adaptación (PANA).

Technology Executive Committee (TEC) (2015). Good Practices of Technology Needs Assessments United Nations Framework Convention on Climate Change (UNFCCC), Bonn, Germany.

ANNEX 1: LIST OF POSSIBLE STAKEHOLDERS FOR EQG

- MAGBMA (Ministerio de Agricultura, Ganadería, Bosques y Medio Ambiente).
    - Oficina Nacional de Cambio Climático (ONCC-GE)
- El Instituto Nacional de Desarrollo Forestal (INDEFOR)
- El Instituto Nacional de Estadística de GE (INEGE)
- El Instituto Nacional de Promoción Agrícola de GE (INPAGE)
- La Escuela de Capacitación Agrícola
- Sistema Nacional de Áreas Protegidas (SINAP)
- Participantes Comunicación Nacional y la NDC.
- Consejo de Ministros
- Ministerio de Minas e Hidrocarburos,
- Ministerio de Industria y Energía.
- Ministerio de Salud y Bienestar Social
- Ministerio de Infraestructura y Urbanismo;
- Ministerio de Economía y Comercio;
- Ministerio de Educación y Ciencia;
- Ministerio de Cultura ,Turismo y Promoción Artesanal
- Ministerio de Asuntos Exteriores y Cooperación;
- Ministerio de Transporte, Correos y Telecomunicaciones;
- Ministerio del Interior y Corporaciones Locales;
- Ministerio de Hacienda y Presupuesto
- Ministerio de Seguridad Nacional
- Ministerio de Defensa Nacional
- Ministerio de Obras Públicas, Vivienda y Urbanismo
- Ministerio de Trabajo, Fomento de Empleo y Seguridad Social
- Ministerio de Pesca y Recursos Hídricos.
- Ministerio de Información, Prensa y Radio.
- Ministerio de Asuntos Sociales e Igualdad de Género
- Ministerio de la Función Pública y Reforma Administrativa, Excmo. Señor Don EUCARIO BACALE ANGÜE
- Ministerio de Comercio y Promoción de Pequeñas y Medianas Empresas,

ANNEX 2: QUESTION LIST FOR THE STAKEHOLDER IDENTIFICATION IN TNA PHASE 1

FASE 1. Technology identification and priorisation	
Questions about the roles required in this step	Examples of stakeholders
Who can provide information about environmentally sound technologies (EST)? Who would benefit from the results of technological identification and prioritization? Who is already using these (or similar) technologies? Which government entities are involved in the development and promotion of technology? Which government entities coordinate sector analysis? Which cutting-edge institutions conduct climate change research? What other organizations are involved in the implementation of new technologies?	• Experts (on climate change) who provide technical support to achieve adaptation and mitigation objectives. • Producers or suppliers (private sector) of technology that offer technical support and will help open the market to new technologies. • Government representatives of application-related ministries (political decision-makers) • NGOs that promote social or environmental objectives, and/or technologies • Institutions that provide technical support to both government and industry.