STUDY ON THE ESTABLISHMENT OF A SUSTAINABLE GHGI INSTITUTIONAL FRAMEWORK IN THE GAMBIA

Under the project entitled

Capacity Building for Improving the Quality of Greenhouse Gas Inventories in West and Francophone Central African Countries

Prepared by the

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**ABBREVIATIONS AND ACRONYMS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CH₄</td>
<td>Methane</td>
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<tr>
<td>CDM</td>
<td>Clean Development Mechanism</td>
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<tr>
<td>CO</td>
<td>Carbon monoxide</td>
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<td>CO₂</td>
<td>Carbon dioxide</td>
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<td>CRR</td>
<td>Central River Region</td>
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<tr>
<td>DCD</td>
<td>Department of Community Development</td>
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<td>DMCI</td>
<td>Development Management Consultant International</td>
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<td>DOF</td>
<td>Department of Forestry</td>
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<td>DOS</td>
<td>Department of State</td>
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<td>DOSEN</td>
<td>Department of State for Energy</td>
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<td>DOSFEA</td>
<td>Department of State for Finance and Economic Affairs</td>
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<td>DOSFNRE</td>
<td>Department of State for Forestry, Natural Resources and the Environment</td>
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<td>DOSLGL&amp;RA</td>
<td>Department of State for Local Government, Lands &amp; Religious Affairs</td>
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<td>ECOWAS</td>
<td>Economic Community of West African States</td>
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<td>ED</td>
<td>Energy Division</td>
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<td>EDF</td>
<td>European Development Fund</td>
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<tr>
<td>GBA</td>
<td>Greater Banjul Area</td>
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<td>GBoS</td>
<td>Gambian Bureau of Statistic</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GEF</td>
<td>Global Environment Facility</td>
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<td>GHG</td>
<td>Green House Gas</td>
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<td>GHGI</td>
<td>Green House Gas Inventory</td>
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<tr>
<td>GIPFZA</td>
<td>Gambia Investment Promotion and Free Zone Agency</td>
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<td>GOTG</td>
<td>Government of The Gambia</td>
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<td>GRA</td>
<td>Gambia Revenue Authority</td>
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<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>IDB</td>
<td>Islamic Development Bank</td>
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<td>IDP</td>
<td>Institutional Data Providers</td>
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<td>IEC</td>
<td>Information, Education and Communication</td>
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<td>IPCC</td>
<td>Inter-governmental Panel on Climate Change</td>
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<td>LGA</td>
<td>Local Government Area</td>
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<td>LRR</td>
<td>Lower River Region</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
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<tr>
<td>N₂O</td>
<td>Nitrous oxide</td>
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<tr>
<td>NBR</td>
<td>North Bank Region</td>
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<td>NCB</td>
<td>National Climate Board</td>
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<td>NEA</td>
<td>National Environment Agency</td>
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<td>NEMA1994</td>
<td>National Environmental Management Act 1994</td>
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<td>NEP</td>
<td>National Energy Policy</td>
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<tr>
<td>NGO</td>
<td>Non Governmental Organisation</td>
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<tr>
<td>NMVOC</td>
<td>Non Methane Volatile Organic Compounds</td>
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<td>NOx</td>
<td>Nitrogen Oxides</td>
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<td>NPC</td>
<td>National Planning Commission</td>
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<td>OP</td>
<td>Office of the President</td>
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<tr>
<td>PRSP</td>
<td>Poverty Reduction Strategy Paper</td>
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<tr>
<td>PURA</td>
<td>Public Utilities Regulatory Authority</td>
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<tr>
<td>PV</td>
<td>Photovoltaic (refers to solar electricity system)</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>SHS</td>
<td>Solar Home System</td>
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<td>SO₂</td>
<td>Sulphur Dioxide</td>
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<tr>
<td>SPA</td>
<td>Strategy for Poverty Alleviation</td>
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<td>TOE</td>
<td>Ton Oil Equivalent</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNCCD</td>
<td>United Nations Convention to Combat Desertification</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
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<td>UNIDO</td>
<td>United Nations Industrial Development Organisation</td>
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<tr>
<td>URR</td>
<td>Upper River Region</td>
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<td>WR</td>
<td>Western Region</td>
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I  PREFACE

Availability of a reliable and accurate data is necessary for proper planning in all the socio-economic spectrum of our society. In the development of a national communications in the development of a Greenhouse Gas Inventory, parameters that input into various models vary constantly, reflecting anthropogenic behaviour that continues to plague environment we live in.

Anthropogenic behaviour results in discharge of greenhouse gases (GHG) that have severe consequences on our planet and its inhabitants. It is therefore important that these data used for models for estimation of the existing situation and forecast the future, to better prepare for it, have to be accurate and reliable and the necessary resources available at the disposal of the GHG Inventory process.

It is therefore necessary that resources required for the effective and efficient conduction of an inventory of the GHG are human, materials and the capacity of the individuals. The allocation of time, human and financial resources are necessary for effective data collection, compilation, analyses, report writing for the timely and effective production of GHGI,
II Executive Summary

The world is witnessing climate change that is a very critical and complex environmental issue for now and the future. According to the Intergovernmental Panel on Climate Change (IPCC), atmospheric concentration of key greenhouse gases (carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and troposphere ozone (O3)) reached their highest recorded levels in the 1990s, primarily due to the combustion of fossil fuels, agricultural activities and change in land use. Various studies have been conducted that verified the changes in the composition of the atmosphere with some of them impacting negatively on the global climate, which would have considerable consequences in developing countries due to poverty and the lack of resources and appropriate technologies to deal with the adverse climatic conditions.

To better understand national and regional circumstances, it is necessary to understand the inventory process including the GHG, have an understanding of the dynamics of inventorizing the green house gases and build capacities. Against this backdrop, a project was conceived to strengthen capacities of GHGI in West Africa and the Francophone Central Africa countries, which funded this study.

This report outlines a study to develop a national strategy to establish a GHGI sustainable institutional framework in The Gambia that would undertake the development of GHG inventories in the country. The Study reviewed the existing institutional arrangements in relation to the development of a GHG inventory in the country and the adequacy in terms of legal requirement, the various institutions that take part in the process and an explanation of some of the steps or procedure in realizing the development of an Inventory report. The drawback of the existing arrangements have been highlighted.

With these constraints highlighted and there is need to establish a sustainable institutional framework for the inventory development, the Study undertook the drafting of strategies for this process. The report proposed the basic structure of the institution with the possibility of phasing, composition of the proposed structure, duties and responsibilities, status and the various activities proposed.

After consultation and literature review, it was observed that capacity in all aspects in the development of GHGI is lacking and therefore, this needs to be built. The institutionalization of this process is quite important. Therefore, a pilot project of 3 – 5 years is proposed, where the project staff could have the necessary training and graduate into establishing and running a national unit under the UNFCCC Focal Point that take cares of their daily need. National Office for the Development of GHG Inventory has been the proposed name and it is recommended that the traditional partners be approached for support. While donor support is solicited for the first few years of operations, it is recommended that, as part of the policy strategy, to develop a mechanism for funding the institution on a sustainable basis especially with government funding after the pilot project phase.
1. Introduction

1.1 Country Profile

1.1.1 Location and Demographic Situation

The Gambia is located in the valley of the Gambia river on the west coast of Africa stretching as a narrow band of land, approximately 480km long varying in width from 48km near the estuary of the river to 24km inland. It has a land area of 10,689 sq. km. It is bordered on three sides by Senegal and dissected by the Gambia River into North and South Banks. The current population of 1.36 million (2003 Census) is estimated to be growing at 2.77% annually.

![Map of the Gambia](image)

1.1.2 Geographic Features

Lying between latitude 13º 3” and 13º 49” N and longitude 16º 48” and 13º 47” W, the Gambia is situated in the south of the Sahel, a region which is largely semi-arid with only one rainy season in the year and a dry period of 6-7 months. The wet season commences in June and ends in September, while the dry season starts from October and ends in May. Average daily temperatures in the dry season are 30º C and fall slightly to 27º C in the wet season. There are three main agro ecological zones: (i) the Sahelian Zone which is a small concave in the extreme north of the CRR-North with a rainfall of <600 mm; (ii) the Sudanian-Sahelian Zone with a rainfall ranging from 600 mm to 900 mm covers the remaining parts of CRR-North, all of CRR-South, LRR and parts of NBR, URR and WR; (iii) and the Sudanian-Guinean Zone, which occupies the western ends of WR and NBR with a rainfall of 900 mm to 1,210 mm.
1.1.3 Political and Administrative Structure

The Gambia gained her independence from Britain in 1965 and became a Republic in 1971 and was one of the very few multiparty democracies in Africa at the time. A military coup in 1994 briefly interrupted the country’s democratic process, but was restored in 1996 with the holding of Presidential elections followed by National Assembly elections in 1997, completing the return to civilian rule.

Administratively the Gambia is divided into 5 regions (Western, North Bank, Lower River, Central River and Upper River) plus Banjul, as shown in the map annexed. The Gambia has 8 Local Government Areas (LGAs): Janjanbureh (Georgetown), Kuntaur, Kanifing, Banjul, Basse, Brikama, Kerewan and Mansa Konko. The next level of administrative division is the district level, which comprises of a total of 39 districts. There are two municipalities: Banjul City Council and Kanifing Municipal Councils and five provincial divisions: Western Region (WR), North Bank Region (NBR), Lower river Region (LRR), Central River Region (CRR),) and Upper River Region (URR). Politically, the relevant units are Local Government Areas (LGA), District, Wards and Villages. The country has 35 districts and about 1,870 villages with an average of 13 compounds.

1.1.4 Socio-Economic Conditions

The economy is primarily agrarian, with agriculture employing about 70% of the labour force and accounts for about 30% of GDP. The services sector account for over 50% of GDP, attributed to the re-export trade and tourism. Financial service and Information and Communication Technologies (ICT) are also emerging and gaining importance. The manufacturing sector contributes 5% to GDP reflecting the low level of manufacturing activities. This is very low compared to average levels registered in the ECOWAS region. With an average GDP growth rate of 5%, the Gambia has one of the most liberalised and best performing economies in the West Africa sub-region. The country is well positioned as a trading hub for the West Africa-Europe trade and transshipment. These notwithstanding, sustained economic growth has been constrained by the prevailing undiversified economic base, poor infrastructure particularly roads transport and energy, slow pace in the implementation of policies and reforms, low levels of human capital and lack of a culture of public-private partnership.

The Gambia is among the poorest countries in the World economies with per capita income of about $302 p.a. and ranked 155 out of 177 in 2005. The population stood at 1.3 million people in 2003 compared to 1.03 million persons in 1993. This represents a growth rate of 2.8% between 1993 and 2003. The population density grew from 97 to 128 persons per square kilometre over the same period, representing one of the highest in Africa. About 61.2% of the population, mainly rural are considered poor, and high levels of unemployment in the urban areas have contributed an increase in urban poverty. Significant gains have been made in gender parity, education, water and sanitation, and moderate gains in health services. The country has implemented programmes aimed at addressing poverty since 1994, with the launch of its First Strategy for Poverty Alleviation (SPA). However, poverty reduction continues to be evasive with the proportion of people living in poverty being on the rise instead. Also poverty studies conducted in 1998 and 2003 indicate that in addition to increase in the prevalence and severity of poverty, inequality is also on the increase.
Using the upper poverty line, based on per capita consumption, the head count index (i.e. the percentage of poor people) is calculated at 61.2%. The poverty gap is calculated at 25.9% whilst the poverty severity accounts for about 14.3%. Comparing this latest information on poverty with previous data, it is observed that poverty which was in the past defined as a rural phenomenon has recently increased in urban areas. Data obtained in 2003 indicate that overall poverty has been on the increase in both rural (from 61% in 1998 to 63% in 2003) and urban (from 48% to 57%) areas. The rise in rural poverty is partly associated with the poor performance of the agricultural sector particularly as it relates to declining productivity and inability of farmers to access markets and other social services mainly due to poor rural infrastructure. The rise in urban poverty is attributed to the lack of employment opportunities. The food security situation particularly at the household level is affected by the inability of farmers, who are predominantly subsistent, to produce surpluses to take them through the year much more provide for the general population. This coupled with the lack of proper post-harvest technologies and facilities, amounts to significant losses and wastage. Domestic production only satisfies 50% of the country’s food needs, thus making the Gambia a net food importer within a market condition characterised by rising food prices. This situation further erodes the capacities of both urban and rural poor to have equitable access to basic food items.
2. General Context

2.1 Introduction

The United Nations Framework Convention on Climate Change (UNFCCC) seeks to stabilise concentrations of greenhouse gases (GHGs) in the atmosphere and commits Parties to take measures to mitigate GHG emissions, in accordance with the principle of common but differentiated responsibility and taking into account their national priorities and aspirations. Inventories of GHGs provide the means for monitoring reductions of GHGs by Parties and are therefore important components of national communications.

The Intergovernmental Panel on Climate Change (IPCC) has developed guidelines for computing of GHGs (by Parties) to enable their comparison. The inventory preparation uses methodologies recommended in the GHG inventory reference manual produced by the IPCC.

The Gambia ratified the UNFCC Convention in 1994 as a commitment to contributing its quota in the global efforts to reduce the emission of greenhouse gases. This commitment is demonstrated by The Gambia’s development of enactment of the National Environment Management Act (NEMA --) following the Rio conference. This document is being used as the national blueprint for environment conservation and enhancement.

2.2 The inventory is structured

To match the reporting requirements of the UNFCCC the structure is divided into six main categories:

1. Energy;
2. Industrial Processes;
3. Solvent and Other Product Use;
4. Agriculture;
5. Land-Use Change and Forestry; and

Each of these categories is further subdivided within the inventory on the level where emissions are calculated. Emissions and removals of the following direct GHGs: carbon dioxide (CO₂); methane (CH₄); nitrous oxide (N₂O), F-gases (hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF₆)) as well as of the following ozone and aerosol precursor gases: sulphur dioxide (SO₂); nitrogen oxides (NOₓ); carbon monoxide (CO); and non-methane volatile organic compounds (NMVOCs) are normally estimated.

2.3 Emissions of Greenhouse Gases from the Energy Sector

In The Gambia, energy sector activities that contribute directly to the emission of GHGs have been identified as electricity production, transportation, domestic consumption of energy, and
industrial and agricultural processes. The emissions consist of direct GHGs from energy consumption (Carbon Dioxide (CO$_2$), Methane (CH$_4$), Nitrous Oxide (N$_2$O), Nitrogen Oxides (NOx), Carbon Monoxide (CO) and Non Methane Volatile Organic Compounds (NMVOC)) and Sulphur Dioxide (SO$_2$). Emissions from energy systems are calculated from fuel combustion, including fuelwood. It is assumed that all fossil fuel imported and all wood fuel gathered are consumed. Details of the methodologies can be found in the National Inventory Report (NCC, 2002).

2.4 Emissions of Greenhouse Gases from Industrial Processes

The industrial sector in The Gambia is underdeveloped. Banjul Breweries produces beer, malt and mineral water. Various cottage industries exist and these process and produce food on a relatively small scale. Therefore, only emissions from beverage and food production are assessed for the Industrial Processes category. These activities are not related to energy but chemically or physically transform materials. During these processes Non-Methane Volatile Organic Compounds (NMVOC) are released. The methodology employed is described fully in NCC, 2002.

2.5 Emissions of Greenhouse Gases from the Agriculture Sector

Agricultural activities contribute directly to emissions of GHGs through a variety of different processes. These include CH$_4$ emissions from enteric fermentation in domestic animals, animal waste management, rice production, and non-CO$_2$ emissions from savannah burning and field burning of agricultural wastes. Each of these activities is considered in this report and the results of analysis from the worksheets are also presented.

The data collection and analysis methods used are reported in the National Inventory (NCC, 2002). All the data collected were input in the IPCC/OECD/IEA Modules. The methodology consists of step by step instructions and worksheets contained in the revised IPCC 1996 Revised Guidelines (IPCC.OECD.IEA, 1997).

2.6 Emissions of Greenhouse Gases from Land-Use Change and Forestry

According to IPCC.OECD.IEA, (1997) land-use changes that result in alterations in the amount of biomass on the land produce a net exchange of GHGs between the atmosphere and the land surface. Biomass is a shorthand for organic material, both aboveground and below ground and both living and dead, e.g. tree crops, tree litter, roots, etc. The primary land-use changes that result in GHG emissions and uptake are conversion of forests to non-forests (e.g., conversion of forests to pasture or cropland) and conversion of non-forests to forests (e.g., establishment of plantations).

When forests are cleared, most of the carbon in the cleared biomass is released to the atmosphere as CO$_2$. Clearing by burning (e.g., biomass burning) releases other gases in
addition to $\text{CO}_2$, which are by-products of incomplete combustion. These include $\text{CH}_4$, $\text{CO}$, $\text{N}_2\text{O}$, and NOx. $\text{CO}_2$ emissions from land clearing may not imply a net release of $\text{CO}_2$ to the atmosphere but emissions of these gases are net transfers from the biosphere to the atmosphere.

Land-use changes also result in GHG emissions through the disturbance of forest soils. When forests are converted to croplands, an average of about 25-50% of the soil carbon is released as $\text{CO}_2$, primarily through oxidation of organic matter. Loss of forests may also result in increased net $\text{CH}_4$ emissions to the atmosphere since forest soils are a natural sink of $\text{CH}_4$, i.e.; forest soils absorb atmospheric $\text{CH}_4$.

### 2.7 Emissions of Greenhouse Gases from Waste Management

Domestic, agricultural and industrial waste is generated in the form of solid and liquid. There is no form of waste management or separation in The Gambia. Solid waste is collected from residential properties and commercial services, markets, recreational areas, government offices and institutions (schools and hospitals), fish and poultry processing plants, industries, hotels, etc. The waste constitutes the following: leftover food, paper, grasses, construction waste and other cuttings.
3. General Objective

3.1 Overall objective of the study

The Gambia is among 14 West and Francophone Central African countries involved in a project entitled “Capacity Building for Improving the Quality of Greenhouse Gas Inventories in West and Francophone Central African Countries.” The project is being financed by the Global Environmental Facility (GEF) with the United Nations Development Programme (UNDP) as the Implementing Agency while the United Nations Office for Project Services (UNOPS) is the Executing Agency.

The development objective of the project is to ‘strengthen the capacity of participating countries to improve the quality of their national greenhouse gas inventories (GHGI) in the context of their commitments as Parties to the United Nations Framework on Climate Change (UNFCCC) as envisaged by Decisions 10/CP2 and 10/CP5, and Articles 4.1(a) (b) and 12.1(a) of the Convention.’

3.2 The specific objectives of the project are to:

- Strengthen national arrangements for compiling, archiving, updating and managing greenhouse gas inventories.
- Promote sustainable institutional framework
- Enhance technical capacity for preparing national inventories
- Improve national emission factors and methods.

3.3 Objectives Of This Study

The objectives of this call for proposals are that, the outputs generated by the consultants shall ensure that the inventory process in the Gambia become permanent and to further:

- Put in place structures that will ensure sustainability of improved quality of Greenhouse Gas Inventory system in the Gambia.
- Ensure that awareness has been created of the benefit of Greenhouse Gas Inventory in national development.
- Strengthen relations within national ministries to ensure:
- That countries are proactive in creating new relations within government particularly for “win win” joint activities such as utilizing inventory data for other national activities
3.4 Terms of Reference

3.4.1 Requirements

The consultant should:

- Have a proven capacity to efficiently prepare, collate and present climate change information that is handy and understandable, and consistent with IPCC formats.
- Be well-familiar with Climate Change issues, GHGI preparation and most especially IPCC Good Practice Guidance approach to GHGI preparation, training in IPCC Good Practice Guidance would be an advantage.
- Be familiar and knowledgeable in relevant difficulties in good practices of GHG inventories in the West African sub-region and specifically in the Gambia.
- Be familiar with the peculiarities of the sub-region, and in particular the Gambia, with regards to sustainability of the Greenhouse Gas Inventory system and adopt the necessary strategies to address these issues.

Have organizational skills, and might have been involved in awareness creation programme, most especially to the Gambian community.

3.4.2 Specific Requirements

- Specifically, the consultant should have a degree in environmental law, Environmental Science, Forestry, Chemical Engineering, Agriculture or the Sciences (M. SC. or PhD) would be an advantage
- 3 years experience in Climate Change Issues, particularly in the Gambia
- Familiarity with IPCC, GPG approach to GHGI preparation (a training in IPCC Good Practice Guidance is an advantage)
- 5 years working experience in the Gambia.
- Fluent in both written and spoken English language
- Should be able to work under pressure
- Should be able to work in a team

3.5 Tasks

- Review the legal institutional framework available in the Gambia in relation to climate change
- Review national systems that are in place responsible, lead and/or coordinate GHGI preparations
- Develop a policy on climate change in the Gambia for a legal sustainable institutional framework on greenhouse gas inventories
- Review existing policies and programmes within the relevant sectors on GHGI e.g., agriculture, forestry, environment, energy etc
3.6 Out-put

The consultant shall produce and submit the following reports to the National Inventory Team Leader (NITL)

- A report indicating sustainable strategies for improving GHGI preparation in the Gambia
- Manuscript on how to establish a unit for national inventory preparation on a sustainable basis.
- Identify and/or establish a unit responsible for inventory preparation.
- Report showing evidence of strengthening relationship with national institutions and ministries as well as sub-regional and regional institutions. If no evidence is indicated, the consultant may suggest a way to strengthen this relationship.
4. Characteristic of the Current Institutional Framework

4.1 Introduction of the GHGI in The Gambia

The initial GHG inventory of The Gambia used 1993 as the base year because more data was available that year than any other. This activity was taken as part of The Gambia's commitment to the ideals of the UNFCCC. In fact specific surveys were conducted in 1993 to generate data needed for the inventory exercise.

The process for the preparation of the Second National Communication (SNC) started in 2007 coordinated by the Department of Water Resources as the national focal point for the UNFCCC. The preparation of the SNC was preceded by the West and Central Africa/UNDP/GEF Regional Project (RAF/02/G31, “Capacity Building for Improving the Quality of Greenhouse Gas Inventories (West and Francophone Central Africa) region”. The objective of the project, which started in 2006, was to strengthen the capacity of the 14 participating countries (Benin, Burkina Faso, Burundi, Chad, Côte d’Ivoire, Gabon, The Gambia, Ghana, Guinea, Mali, Niger, Nigeria, Senegal and Togo) of the West and Francophone Central Africa, to improve the quality of their national greenhouse gas inventories (GHG) in the context of their commitments as Parties to the United Nations Framework Convention on Climate Change (UNFCCC).

This project will use a regional framework over its three-year lifetime to build national capacity for improving the quality of data inputs to national greenhouse gas inventories. The use of key sources for national greenhouse gas inventories, as defined in the IPCC Good Practice Guidance (GPG), contributes to the project design by allowing countries to systematically prioritise their efforts to improve overall estimates in the most cost-efficient manner.

The composition and membership of the National Climate Committee (NCC) is opened to all stakeholders since climate change is cross-cutting across the socio-economic spectrum and involves government, private sector, NGOs and private individuals. The main categories as highlighted above are:
1. Energy;
2. Industrial Processes;
3. Solvent and Other Product Use;
4. Agriculture;
5. Land-Use Change and Forestry; and

4.2 Legal framework for establishing the NCC

Presently, there is no legal framework for institutionalising the NCC. The existing legal instruments such as the NEMA 1994 and the Department of Water Resources, as a government entity responsible for coordinating the activities of the UNFCCC are providing the
legal basis for continued operation. As a result, it does not have any legal basis to hire staff on full time for the execution of national inventory activities.

Therefore, there are no institutional frameworks that conducts inventory of GHGs in the country on a regular basis, even though there is a focal point and institutions for climate change – the NCC. The efforts of the NCC are not dedicated to regular activities specifically for inventorizing GHGs but coordination of climate change activities in the country and the core function of the DWR.

Activities such as inventory, mitigation and adaptation exercises are performed on ad hoc basis. There is no full time activity or institution that regularly performs only these functions.

Once studies on inventory are conducted and finalised, the data is printed and distributed to members of the NCC and relevant institutions and a copy kept in the DWR Library. Copies of the data are also left in the computers, which are subject to damage/loss. Effectively, there is no specific and proper system for archiving inventory data.

4.2.1 Figures showing the key sectors and the group set-ups and compositions, provision of data or data sources

The key sectors are:

1. Energy;
2. Industrial Processes;
3. Solvent and Other Product Use;
4. Agriculture;
5. Land-Use Change and Forestry;
6. Waste, and
7. Cross Cutting/IEC

4.2.2 Energy Group Composition

The Energy Group is responsible for the compilation of all energy data including electricity, fuelwood, petroleum products, renewable energy; transport data, aviation data including aircraft data. In addition to the data collection, they run climate models, conduct various analyses and write reports.
4.2.3 Industrial Process Group

GAMBIAN BUREAU OF STATISTICS – Lead Institution

National Environment Agency

GCCI

Gambia Environment Association

4.2.4 Agriculture Group

Dept. of Agriculture-Lead institution

Dept. of Livestock Services

Stay Green Foundation (NGO)

Dept. of Planning

Fisheries Department

University of the Gambia

Gambia Agricultural Development Agency

4.2.5 Land Use Change and Forestry (LUCF)

Dept. of Livestock Services – Lead institution

Dept. of Forestry

Gambia College

Stay Green Foundation

Dept. of Parks & Wildlife Conservation
4.2.6 Waste Group

National Environment Agency - Lead Institution

Banjul City Council

Kanifing Municipal Council

Gambia Radio & Television Services

4.2.7 Cross Cutting Group (for information, Education and Communication)

Gambia Radio & Television Services - Lead Institution

Gambia Technical Training Institution

Gambia College

University of the Gambia

4.3 Data collection methods and advantages/constraints

Inventorizing data in The Gambia from the private sector has always been associated with taxes and/benefit whenever data or other information are required. As such, the information provided by the private company is either overestimated in the case of anticipation for benefits or underestimated in the case of anticipation of tax related issues.

In other instances, data providers are wearisome on providing their data to institutions that request the information for fear that their data may be leaked to their competitors. In all these instances, the confidence of the data provider has to be assured and guaranteed.

Different methods are used by various institutions to acquire data for the GHG inventory process. Depending on the institution and its mandate, data can be collected by:

I. Surveys and census;
II. Request through correspondence; and
III. Legal and regulatory frameworks.
4.3.1 Surveys and Census

Surveys and census are one of the most reliable ways of collecting reliable information that is not available in any institution and cannot be reliably estimated. In The Gambia, surveys have been used (and were used in the past) for estimating data for agriculture, livestock, forestry, industry, waste and energy sectors for production, consumption and other associated activities. Even though a representative sample size for the survey is adequately selected using statistical methods, the results provided are mostly estimates.

4.3.2 Request through correspondence

Some institutions have provided reliable data on their operations in the respective sectors and this make the collection of data much easier for the inventory process. Where such a situation exists, various government departments are in a better position to demand the data. It is however not always easy to receive data requested as some of the private companies are weary to provide data to even government agencies due to the concerns of taxation and confidentiality for others. In such situations, the response is never forthcoming and the need for follow-up providing explanation and assuring confidence is required.

4.3.3 Legal and regulatory framework

Establishment of a legal and regulatory framework in any sector is the most appropriate tool to implement an efficient means of data collection. This is equally true for all the sectors. Development of legal and regulatory framework for any sector will provide the regulation of the sectors that could require the provision of annual reports with all the information required to the regulator and the supervising department. This makes the collection of data much easier and cheaper.

As discussed earlier, the use of legislation is crucial in obtaining the required information from Institutional Data Providers (IDP). Where legislations are not in place, the collection of data to fill the gaps may pose serious challenges, as is the case in most countries today. Therefore in such countries, institutions and/or establishments need to take responsibility for providing data in accordance with the UNFCCC process.
5. Development of a national policy/strategy for GHGI

5.1 Overall Objectives

Amidst the difficulties in coordinating the development of the GHGI in The Gambia on a sustainable and continuous basis, this study was conceived to put in place a strategy and establish an institution that would be responsible wholly and solely for the development of this inventory.

The Gambia’s commitment to the monitoring and protection of the environment is unquestionable. This is demonstrated by the various laws and policy statements and the ratification of the UNFCCC in 1994 as yet another sign of commitment. In addition, The Gambia participated in the preparation of the Initial National Communications (INC) that was submitted to the UNFCCC. The process for the preparation of the national communication is another commitment. The Gambia’s participation in the UNFCCC is yet another indication of sign of commitment.

There is still room for improvement in the development and management of the GHGI process and other UNFCCC processes especially as it relates to incorporating inventory and climate change issues in national development and planning and having a systematic and sustainable institutional arrangement.

At national level, the following legislations have provided legal basis for the continued operation in the preparation of the GHGI:

- National Environmental Management Act (NEMA), the cornerstone of environmental legislation in The Gambia, was first passed in 1987 and then amended in 1994. NEMA supersedes all other acts in The Gambia on environmental matters and creates the legal framework for the operations of the National Environment Agency (NEA).
- Gambia Environmental Action Plan (GEAP) was adopted to help address these pressing environmental problems. Development of the GEAP helped to shape a long-term vision and sense of direction for the realisation of a sustainable development strategy, which balances economic growth with effective environmental and natural resource management. Sustainability is the key concept in the GEAP, which ensures that natural resources are not exploited and that economic growth is sustained over the long-term.
- Hazardous Chemicals & Pesticides Control Act, 1994, under the National Environment Agency;
Environmental Protection Act, 1988 under the National Environment Agency;
National Energy Policy 2005 under the Department of Energy;
Electricity Act, 2005 under the Energy Department;
Wildlife & Biodiversity Act, 2003 under the Department of Parks & Wildlife;
The Forest Act, 1998 under the Department of Forestry;
Forest Regulations, 1978 under the Department of Forestry;
Fisheries Act, 1991 under the Department of Fisheries;
Fisheries Regulations, 1991 under the Department of Fisheries;
Livestock Marketing Agency Act, 2008 under the Department of Livestock Services

5.2 Justification of a Strategy

Despite the commitment of The Gambia to effectively participate at national and international levels and fulfill her commitment in this global village in the domain of enhancing the environment, the approach to national contribution should be better structured and have some legal backing.

Until now, the responsibility of coordinating the activities of climate change matters at the technical level rests with the Department of Water Resources (DWR) under the Department of State for Fisheries and Water Resources. At policy level, the Department of State for Forestry and the Environment is responsible for coordination.

For the implementation of GHGI, several institutions are involved, as highlighted above including the DWR. The DWR serves as the coordination office and coordinates the activities of the National Climate Committee (NCC). The membership of the NCC is open to all stakeholders who have stake in the environment and climate. These include DWR itself, National Environment Agency (NEA), Energy Department, Forestry Department, Fisheries Department, Department of Agricultural Services, Department of Livestock Survives, University of The Gambia, Gambia College, Gambia Radio and Television Services (GRTS), Stay Green Foundation (an NGO), Attorney Generals’ Chambers, NAWEC, etc.

However, the implementation programs are always on an ad-hoc basis since there is no legal mandate within any institution to conduct studies. The ad-hoc approach provides incentives to participating institutions to make arrangements relating to the compilation, archiving, updating and the management of the inventories of greenhouse gas relating to the inventories of the greenhouse gas. Even though there is a focal point appointed at the DWR, the GHGI process is conducted in addition to the routine activity of the staff at that department. This is equally true for all other institutions.
The difficulties and constraints associated with this type of ad-hoc arrangements as a result of lack of appropriate institutional set-up are:

- Lack of coherence for data sources due to difficulties linked to the collection;
- Inadequate and trained experts: because most experts in their field of expertise are not permanent staff of any Inventory institution, they move positions and jobs and in the process go with the institutional memory and expertise;
- Difficulty in access to data from institutions due to reasons advanced above;
- Absence of data storage and archiving system;
- Lack of coordination and continuity in the management of the inventory process;
- Lack of existence of international network and cooperation;
- Weak university resources and linkages for facilities such as laboratories for the research in environment;

5.3 Strategies for institutional framework

The Study objective is to define the principal steps for elaboration and implementation of a national strategy in the long term for a sustainable institutional framework to improve the quality of the GHGI in The Gambia.

In the development of the strategy, it is necessary to take into account the processes of developing past GHGI or ongoing exercise. Involvement of stakeholders in the development and finalization of the process is quite important at every stage of its development.

The following strategies are needed:

1. Establish a working group to develop a strategy for GHGI. This could involve members of the NCC for review of the existing structure and develop synergy between the proposed and existing structure;
2. Develop legislation for the institutionalization of GHGI development and reporting. The legislation should be put to stakeholder consultation and in its preparation consideration should be made on the diverse nature of climate and the inventory process, the economy and integrating GHGI in national planning, relationship with the society and its consequences such as poverty reduction, data acquisition, etc;
3. work towards the enactment of the legislation for it to have a legal status in terms of structures, mandates and funding sources;
4. Explore the opportunities for incorporating climate change issues and inventory aspects in national planning documents: PRSP, national budget, document. Establish clear linkages between national development and climate change;
5. Create an environment for coherence in data collection including utilisation of legal mechanisms;
6. Maintain a core of permanent trained professionals and experts within the new entity and establish a pool of experts for any Inventory of GHG;
7. Maintain a comprehensive and dedicated system and storage;
8. Ensure adequate data storage and archiving system;
9. Ensure coordination and continuity in the management of the inventory process;
10. Establish cooperation with national international institutions and organisations in the field of inventory process;
11. Establish linkages with the university for research.

5.4 Basic structures of the strategy and the institution

Development of basic structure for the institutionalizing the GHGI in would have to be done in phases. The institution could be called National Office for the development of GHGI.

**Phase 1:** Develop a pilot project for establishing the initial structures as a start. This will provide an opportunity to learn on the job while establishing the necessary structure. Funding for the pilot phase could be sought from any or all the collaborating donor institutions: GEF, UNDP, UNEP, ETC.

In the implementation of the pilot phase, while executing the strategies proposed, the project should examine the funding of the institution on a sustainable basis and not to rely entirely on international donors and Gambia Government funding alone and/or inclusion into the development planning. At national level, the linkages between climate change and national development must be established to provide convincing argument for the establishment of national office for GHGI and obtain government funding.

Phase 1 can be a 3 – 5 year project that should kick-start the process of establishing a national office dedicated for conducting national GHG inventory report. The implementation of the pilot would create an opportunity to transform the existing adhoc system to a more permanent and sustainable structure.

**Phase 2:** This phase should be an outcome of the successful implementation of the pilot phase. It should lead to the establishment of a permanent national office/unit within the UNFCCC Focal Point for coordinating the inventory process and reporting. During this phase, funding may be secured from the traditional donors but a firm and a sustainable means of supporting the institution should be established.

5.5 Composition

For implementation of the strategy, as a start, there is need to put in place institutional structures comprising of the Project Manager, who is assisted by Unit heads for various structures of the institution for programmes and projects; finance and administration (responsible for fund mobilization); and capacity building and research; and communications and sensitization (national and international).
The proposed structure still recognizes the role of the National Climate Board (NCB) to serve as the supervisory body that should now compose of representatives from the following key institutions:

I. DWR/DOSFWR&NAM as Chairperson
II. DOSFEN
III. NEA
IV. DWR (water specialist)
V. DWR (Climate/meteorology specialist)
VI. DOSEN (Energy)
VII. DOSFEA (Also representing PRSP, NPC, etc)
VIII. DOSTIE
IX. DOS for Agriculture
X. Dept. of Forestry
XI. Dept. of Livestock services
XII. GBoS (Statistics)
XIII. NGO (1)
XIV. Private sector (1)
For the main activity of the Pilot Office however, it would rest with the NCB to hire out personnel for the development of the inventory process to individual consultants or members from other technical departments but who are NOT members of the NCB. The hiring of the consultants by the National Climate Board (NCB) would be based on recommendation to the UNFCCC focal point and its acceptance. The NCB would now serve in an advisory capacity.

The unit for programmes and projects should be responsible for coordinating the conduction of the inventory process as one of the main activities of the Office. Each of the units is to be headed by a Unit Head.

5.6 Duties and responsibilities

The duties and responsibilities of the various office bearers are attached at the annex.

5.7 Status of the NODGI

For effective implementation of the mandates of the institution, it is necessary to grant project status with some self accounting status so as to implement the rapid development of the inventory process. This would allow the implementation of its action plan with little delay due to reduction of red tape normally associated with government institutions.

The NODGI is proposed to be a project under the DWR – the UNFCCC focal point. It should be a project, similar to other projects implemented by the various departments in the recent past. The difference here should be that the staff of the project should be full time.

5.8 Activities and roles of the NODGI

- implement Institutional set-up;
- embark on policy and legal development to institutionalize the office;
- development of an action plan for the organization;
- Report on the activities of the organization;
- Mobilization of financing and funding for the institution;
- Develop communication and sensitization strategies and implement;
- Develop and conduct training and human resources plans;
- Implement research and development plan in collaboration with the University and other higher education institutions;
- Develop follow-up evaluation plans and activities of the strategic actions
- Conduct other activities in climate change with the UNFCCC Focal Point
5.9 End of the Pilot Project: Next Steps

The implementation of the pilot project should be a training and capacity building phase for the establishment of a Unit responsible for the development of national GHG Inventory process. In addition, this unit or NODGI should also be charged with the responsibility of executing all future climate change and GHG inventory processes.

At the end of the project phase, this Unit should be transformed into a unit for continuation of the activities of the GHGI process or any other climate change activities. The unit (or NODGI) should be established under the UNFCCC national Focal point with a staff of 2 competent personnel as a start with the designations of Principal Officer and Senior Officer for Climate Change.

The NCB can continue to provide oversight and advice the UNFCCC Focal Point especially during implementation of programmes and activities of inventory process and other climate change activities. The Unit will be headed by the Principal Officer and assisted by the senior Officer. Duties and responsibilities would be the same as that of the Manager who would be responsible for projects, programmes and capacity building among other responsibilities and he will be assisted by the Senior Officer who would be responsible for communication, sensitisation and any other assignment that may be given. The administration, finance and capacity building activities become core functions of the UNFCCC Focal Point at the end of the project.
6. Conclusions and Recommendations

The development of GHG Inventory requires trained and adequate personnel in the execution of the task. Since there is no legal entity that is responsible solely for development of the GHGI, it would be too premature to recommend establishing a fully fledged national office for this purpose. Most of the personnel who participate in the development of the GHGI are not staff of the DWR or any institution but that of respective sector institutions.

To provide a training opportunity to formally legislate the establishment of a separate entity for this purpose and also provide training to Gambians for this purpose, it is recommended that a pilot project be implemented as a first step with support from UNEP/UNDP and other traditional donor partners. This will provide opportunity for training on the assignment with possibility of a technical assistant. It will also equip the office and provide guidance as the office is fully established with the period of 3 to 5 years.

During the implementation of the pilot phase, the legal instrument would be developed for the GHGI entity, future funding of the institution would be worked out and the incorporation of GHGI and climate change in the national development planning documents. The participation of the DOSFEA through the National Planning Commission (NPC) in the implementation of the pilot phase would provide the necessary planning requirements for funding by the Gambia Government.
7. Bibliography


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Forest Regulations, 1978 under the Department of Forestry

Fisheries Act, 1991 under the Department of Fisheries

Fisheries Regulations, 1991 under the Department of Fisheries

Livestock Marketing Agency Act, 2008 under the Department of Livestock Services
8. Annex

8.1 Jobs descriptions for various key positions in the NODGI

(a) Project Manager

**Job Purpose**

Serve as chief executive officer with overall responsibility for the management of all NODGI operations and personnel, reporting directly to the National Climate Board.

Provide strategic planning leadership, technical guidance and quality assurance for all NODGI activities.

Oversee administrative, staffing, projects and programme activities, finance, reporting, contracting and management issues related to NODGI operations.

**Job Functions and Responsibilities**

Provide all required assistance for the National Climate Board to ensure maximum efficiency in the conduct of its business, inter alia by organizing and preparing the meetings of the NCB and preparing the draft minutes for approval, and ensuring the highest quality for all documents submitted to Board Members for their consideration and approval.

Implementing decisions made by the National Climate Board in a timely and effective manner.

Establish a strong organization structure for the NODGI, by:

- preparing the annual work program of the NODGI
- preparing the annual budget of the NODGI,
- establishing an efficient MIS (management information system) for the NODGI,
- developing human resource policies for the NODGI, and
- hiring the staff of the NODGI as and when necessary.

Ensure efficient operation of the work of NODGI Programme Units by providing strategic leadership to guide the work of NODGI programme units,

- supervising the correct conclusion of contracts with consultants and other sub-contractors,
- monitoring the budget situation of NODGI throughout the year, and
- coordinating NODGI activities with other GHGI institutions and specialized agencies leading resource mobilization and fundraising for the NODGI’s core costs and programme activities as well as for national investment programmes and business ventures in climate issues.

Establish strong linkages with relevant stakeholders both within and outside The Gambia by
Maintaining close working relationships with senior executives in the most important public and private sector institutions involved in climate and GHGI processes, and maintaining strong donor relations.

**Key Skills, Knowledge and Experience**

- Highly motivated with established leadership credentials in the climate/environment or familiar with UNFCCC process in any of the key sectors such as agriculture, livestock, forestry, energy development community, etc.
- Minimum seven (7) years professional experience including experience with working in the public sector and/or civil society, preferably with business support services, and exposure to climate issues and UNFCCC processes.
- Demonstrated ability to inspire, encourage, and build trust and confidence among peers and subordinates.
- Demonstrated experience in program and project management, strategic planning, resource mobilization and fund raising.
- Proven management capabilities in previous senior position plus solid analytical, negotiating and communication/interpersonal skills with demonstrated track record in working in a team setting, and ability to balance multiple priorities and deadlines.
- University degree – minimum Masters level, or equivalent experience - in forestry, livestock, agriculture, economics, engineering/energy, finance or business administration.
- Fluency in English.
- A working knowledge in French would be an advantage.

(b) **Head of Unit: Programmes and Projects**

**Job Purpose**

Providing technical support to the Project Manager in developing and implementing GHG Inventory and other climate change issues and policies.

Ensure that the action plan and programmes and projects in particular are implemented.

Maintain close relation with national institutions and experts/consultants to implement the action plan.

**Job Functions and Responsibilities**

- Drive both strategy and delivery of the NODGI’s Unit programme activities, tracking progress against set action plans and targets, and reporting regularly to the NODGI Project Manager.
- Coordinate the inventory process with the necessary institutions and individuals.
- Coordinate the contracts with individuals and institutions relating to the development of the GHG Inventory.
Ensure that the programmes and projects with the various studies are implemented to the letter.

Drive both strategy and delivery of the NODGI’s Capacity Development programme activities,

Strengthen national level institutional and human capacities, by reviewing and supervising the activities of technical partners facilitating activities of NODGI to analyse and evaluate their needs in GHGI and climate change and then Investment Programmes Development

Implementation Capacity Development implementing adapted GHG and climate programs and policies

Promote policy frameworks with other collaborating institutions for cooperation and strengthening capacities

Key Skills, Knowledge and Experience

- Minimum five (5) years professional experience with established leadership credentials in the climate/environment or familiar with UNFCCC process in any of the key sectors such as Forestry, Livestock, energy, agriculture, development community, etc
- Demonstrated ability to inspire, encourage, and build trust and confidence among peers and subordinates
- Demonstrated experience in program and project management, strategic planning and resource mobilization.
- Proven track record in running capacity development programmes, with strong experience of managing and leading successful teams, working with research/training institutions and business development organizations.
- Proven management capabilities in previous senior position plus solid analytical, negotiating and communication/interpersonal skills with demonstrated track record in working in a team setting, and ability to balance multiple priorities and deadlines.
- University degree – minimum Masters level, or equivalent experience - in economics, engineering/energy, finance or business administration.
- Fluency in English.

(c) Head of Unit: Finance and Administration

Job Purpose

Work closely with the Project Manager to raise and manage funds for the NODGI’s programme activities
Job Functions and Responsibilities

Work closely with the Project Manager to raise and manage funds for the NODGI’s programme activities

Assist the Manager supervise the human resources programmes of NODGI

Provide timely and quality advice and information, on all matters relating to office administration, to the NODGI Project Manager and Unit Heads

Monitor expenditure and produce accurate financial information, as and when required, for review by the NODGI Project Manager

Develop financial and administrative procedures and policies, and the reporting and management accounts function, and ensure compliance with internal procedures

Safeguard the NODGI’s assets and financial condition through set out monitoring and control systems

Review all financial and administrative systems regularly and advice the NODGI Project Manager accordingly

Key Skills, Knowledge and Experience

- At least five years' professional experience, including exposure to fundraising and donor development,
- experience of working with donors/ international financial institutions.
- University degree - Masters level preferred, or equivalent experience - in finance, business administration or economics
- Fluency in English

(d) Unit Head: Capacity Development and Research

Job Purpose

Supervise the activities of the NODGI’s Units, including human resources/capacity development and research

Lead the activities of the NODGI’s Capacity Development, including the provision of training within and outside the country.
Job Functions and Responsibilities

Drive both strategy and delivery of the NODGI’s Capacity Development and Research programme activities, tracking progress against budgets and targets, and reporting regularly to the NODGI Executive Director

Strengthen linkages with national and regional level institutions for human capacity development and research

Implement Capacity Development and research programs and policies

Key Skills, Knowledge and Experience

- At least five years professional experience, including exposure to capacity development programmes,
- experience in managing and leading successful teams, and working with research/training institutions.
- University degree - Masters level preferred, or equivalent experience - in research or capacity development or economics
- Fluency in English