



REPUBLIC OF UGANDA

MINISTRY OF WATER AND ENVIRONMENT

GUIDELINES FOR THE INTEGRATION OF CLIMATE CHANGE IN SECTOR PLANS AND BUDGETS

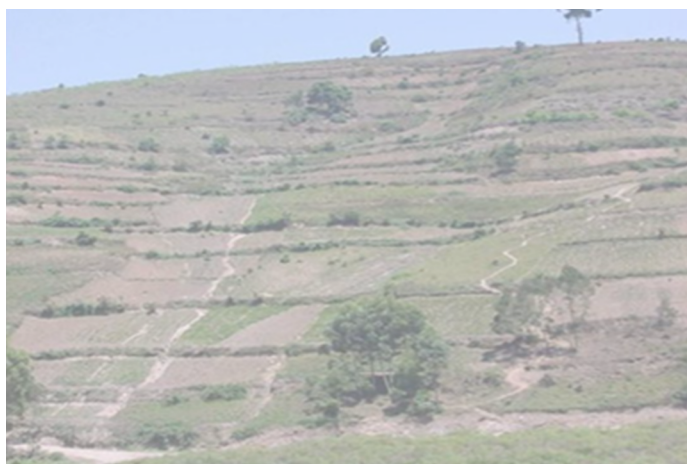


TABLE OF CONTENTS

List of acronyms	vi
EXECUTIVE SUMMARY	vii
1. Introduction	1
1.1 Climate Change impacts and Vulnerabilities in Uganda	1
1.2 Linkages between Climate Change and Development	1
1.3 Objectives and Scope of the Climate Change integration guideline	2
1.4 Entry points and opportunities for the integration process	2
2. Policy and Institutional framework to support Climate Change Management in Uganda	3
2.1 Policy Framework for Climate Change in Uganda	3
2.2 Institutional Framework for integration of climate change	4
3. Basic steps for integration of climate change in Sector Plans and Budgets	7
3.1 Step 1: Conduct Climate Change Impact and Vulnerability Assessment	9
3.2 Step 2: Identify and Analyze Adaptation and Mitigation Options	10
3.3 Step 3: Identify and cost programmes and actions for climate interventions	11
3.4 Step 4: Design and Implement a plan for mainstreaming Climate change in the different sectors	13
3.5 Step 5: Monitor the CCMA Implementation Process	14
3.6 Step 6: Evaluate performance and Review the Adaptation and Mitigation Process	15
3.7 Stakeholder Participation and responsibilities in CCMA	15
3.8 Monitoring and Evaluation of the mainstreaming	18
3.9 Indicators of the mainstreaming process	18
References	19
Appendices	21
Appendix 1: Definition of Key terms in Climate Change Adaptation and Mitigation	21
Appendix 2: Impacts of climate change in Uganda by Sector	23
Appendix 3: Outline for preparing the implementation plans for mainstreaming climate change	24
Appendix 4: National Legal and Regulatory framework relevant to Climate Change Adaptation and Mitigation	25
Appendix 5: Policies related to Climate change adaptation and mitigation in Uganda	26
Appendix 6: Monitoring and Evaluation (M&E) Framework for the integration of climate change into sector plans and budgets	27
Appendix 7: Impact Evaluation Framework for the integration of climate change into sectors	29

List of acronyms

ACCRA	Africa Climate Change Resilience Alliance
ADAPT	Assessment and Design for Adaptation to Climate Change: A Planning Tool
BFP	Budget Framework Paper
CAO	Chief Administrative Officer
CBO	Community Based Organization
CC	Climate Change
CCA	Climate Change Adaptation
CC DARE	Climate Change and Development - Adapting by Reducing Vulnerability
CCMA	Climate Change Mitigation and Adaptation
CCU	Climate Change Unit
CDM	Clean Development Mechanism
COP	Conference of the Parties - to UNFCCC
CSO	Civil Society Organization
CRiSTAL	Community based Risk Screening Tool for Adaptation and Livelihoods
DDMR-OPM	Department of Disaster Management and Refugees - Office of the Prime Minister
DDP	District Development Plan
DESS	Department of Environment Sector Services
DoM	Department of Meteorology
DPM	Disaster Preparedness and Management
DWRM	Directorate of Water Resource Management
ENR	Environment and Natural Resources
ENRM	Environment and Natural Resources Management
ENR-SIP	Environment and Natural Resources - Sector Investment Plan
FAO	Food and Agricultural Organization
FSSD	Forestry Sector Support Department
GEF	Global Environment Facility
GHG	Green House Gases
GoU	Government of Uganda
HDI	Human Development Index
HEP	Hydro-Electric Power
HIPC	Heavily Indebted Poor Countries
IUCN	International Union for Conservation of Nature
IMF	International Monetary Fund
LDC	Least Developed Countries
LGDP	Local Government Development Programme
LGMSDP	Local Government Management and Service Delivery Programme
LTEF	Long Term Expenditure Framework

MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MDGs	Millennium Development Goals
MEMD	Ministry of Energy and Minerals Development
MLHUD	Ministry of Lands, Housing and Urban Development
MoLG	Ministry of Local Government
MoFPED	Ministry of Finance, Planning and Economic Development
MTEF	Medium Term Expenditure Framework
MWE	Ministry of Water and Environment
NAP	National Action Programme of the UNCCD
NAPA	National Adaptation Programmes of Action
NARO	National Agricultural Research Organization
NDP	National Development Plan
NEMA	National Environment Management Authority
NFA	National Forest Authority
NGO	Non-Government Organization
NPA	National Planning Authority
OPM	Office of the Prime Minister
ORCHID	Opportunities and Risks of Climate Change and Disasters
PAF	Poverty Action Fund
PEAP	Poverty Eradication Action Plan
PFCC	Parliamentary Forum on Climate Change
PMA	Plan for Modernization of Agriculture
PRS	Poverty Reduction Strategy
REDD	Reducing Emissions from Deforestation and Degradation
SIP	Sector Investment Plan
SLM	Sustainable Land Management
SWAp	Sector-Wide Approach
SWG	Sector Working Group
TOR	Terms of Reference
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention for Climate Change
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
UWA	Uganda Wildlife Authority
WFP	World Food Programme
WWF	World Wide Fund for Nature

EXECUTIVE SUMMARY

Uganda's economy, livelihoods and social wellbeing are highly vulnerable to climate variability and the challenges imposed by climate and this needs urgent attention. However, this necessitates adequate funding, technological assistance and appropriate institutional arrangements to build resilience and support adaptation and mitigation. Given the strong linkage between climate change and development, the provision of financing for adaptation and mitigation has become a major issue in international and local climate policy and agenda. Although the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) has not provided binding agreements, it has provided a platform for promises of substantial finance to address climate change issues, which justify the need for preparedness by the beneficiaries to put the mobilized resources to well planned and budgeted frameworks.

One important approach to prepare for the management of climate change issues is having them considered in development planning and budgeting processes. In line with that, the Government of Uganda sanctioned the development of guidelines for integration of climate change in sector plans and budgets. Development of the guidelines was spearhead by a sectoral technical committee comprising of representatives from government and non-government institutions and was coordinated by the National Planning Authority (NPA). The sectoral technical committee collected data from central and local government institutions that formed a basis for supporting the formulation of the guidelines.

The guidelines outline basic steps and tools necessary during the process of integrating climate change in sector plans and budgets. The recommended steps include:

- Step 1: Conduct Climate Change Impact and Vulnerability Assessment
- Step 2: Identify and analyze adaptation and mitigation options
- Step 3: Identify and cost programmes and actions for Climate Change interventions
- Step 4: Design and implement a plan for mainstreaming Climate Change in the different sectors
- Step 5: Monitor the CCMA Implementation Process
- Step 6: Evaluate performance and review the Adaptation and Mitigation Process

The guidelines emphasize the need for stakeholder participation and clarification of responsibilities for the relevant stakeholders. The guideline proposed key stakeholders that should be considered for the integration process. Approaches for monitoring and evaluation of the integration process are also outlined. These guidelines provide an overall framework that will be used for development of sector specific guidelines by the relevant sectors.

1. Introduction

1.1 Climate Change impacts and Vulnerabilities in Uganda

The most general definition of climate change is a change in the statistical properties of the climate system when considered over long periods of time, regardless of cause (UNFCCC, 1992). Definitions of the key terminologies related to climate change are given in Appendix 1.

Uganda is experiencing signs of climate change as exhibited by the trends in average temperatures and rainfall. Climate models for Uganda point to an increase in temperature in the range of 0.70C and 1.50C by the 2020's (GoU, 2009a). The models predict a likely increase in the variability of rainfall, with most areas probably getting higher rainfall. Climate Change is expected to increase the frequency and intensity of droughts, floods, glacial melting, landslides and heat waves, which will have significant impacts to the livelihoods of local communities, who largely depend on natural resources (NEMA, 2008). This has been reflected by shifts in spread of diseases such as malaria; soil erosion and degradation, floods, damage to infrastructure and settlements and shift in productivity of agricultural and natural resources. Climate change is therefore a global problem that requires both national and global responses.

In Uganda, floods have become more frequent, for example in the Teso region, which in 2007 received the heaviest rainfall in 35 years affected an estimated 50,000 households, leading to food insecurity due to the loss of harvests. In March 2010, some parts of Eastern Uganda also experienced unusually heavy and prolonged rains that resulted into floods and landslides. For example, in Butaleja District, floods submerged crop fields and vital infrastructure, including some schools and houses. In addition, a tragic landslide occurred in Bududa on the slopes of Mt. Elgon in March 2010 burying three villages and causing numerous deaths and loss of property. In 2011, heavy landslides occurred in Bulambuli also burying a number of villages and causing loss of property, crop and livestock investments. The most recent incidence of a fateful landslide happened in June 2012, when a landslide in Bulucheke Sub-county, Bududa District, that swept homes, destroying a lot of property and leading to death of 18 people and injuries of more than 450 people.

The Ugandan economy and welfare of the people are intricately linked to the natural environment and, therefore highly vulnerable to climate variability and change. Furthermore, the International Climate Risk Report identified Uganda as one of the least prepared and most vulnerable countries in the world (CIGI, 2007). Climate change is likely to continue to have a wide range of impacts for the environment, economy and livelihoods in Uganda. The likely key impacts from climate change in the different sectors are summarized in Appendix 2.

1.2 Linkages between Climate Change and Development

The need for the integration of climate change in development frameworks is important due to the fact that impacts of climate variability and change and climate policy responses, and associated socio-economic development has an effect on the ability of countries to achieve sustainable development goals. Successful implementation of those goals will in turn affect the opportunities for, and success of, climate change policies. Conversely, there is a linkage between poverty and climate change given that climate change will compound existing poverty. Adverse impacts of climate change will be most striking in societies, which have more dependence on natural resources and have limited capacity to adapt to a changing climate. Within these societies, the poorest of the poor, who have the least resources and the least capacity to adapt, are the most vulnerable. An understanding of the dual relationship between sustainable development and climate change justifies the need for integration of climate change in government plans and budgets.

1.3 Objectives and Scope of the Climate Change integration guideline

These guidelines provide highlights of the approaches that can be used to mainstream climate change in sector plans and budget. The guidelines are designed to provide different sectors with approaches on how to:

- i) Carry out impact and vulnerability assessments;
- ii) Identify opportunities and entry points for integration of climate change mitigation and adaptation measures;
- iii) Propose options for integrating climate change adaptation and mitigation into the policy formulation process, financing, implementation and evaluation at national, local and community levels;
- iv) Assist to improve resilience.

The guidelines are targeted at different stakeholders with interest in climate change issues, including policy makers and implementers and their partners and collaborators such as CSOs, Private Sector and Development Partners.

The mainstreaming/integration will be prepared in such a way so that the following:

- a. Policies and measures identified by each sector during the mainstreaming, that lead to climate change mitigation should be consolidated into sectoral or area specific national appropriate mitigation actions (NAMAs) and REDD+; and then submitted to the UNFCCC for support;
- b. Policies and measures identified by each sector during the mainstreaming, that lead to climate change adaptation options, should be consolidated into sectoral or area specific adaption plans and actions; and then consolidated into the national adaptation plan; and then submitted to, among other areas, the UNFCCC for support;

The forestry sector is currently undertaking a comprehensive REDD+ program; and this will consolidate the mitigation and adaptation requirements for the sector and make them available for implementation.

1.4 Entry points and opportunities for the integration process

The integration of climate change in sector policies, plans and budgets in Uganda should consider the key processes, which are guided by broader national vision and development strategies. Table 3 and Figure 3 give the proposed entry points at central and local planning levels.

Table 3: Main entry points for climate change mainstreaming process at different levels

Policy Cycle Stage	National level	Sector level	Implementation level
Policy formulation: Recognize & consider climate risks	Long-term Vision; National Policies & Strategies	Sector policies & strategies	Formulation of local actions
Planning	Multi-year development plans	Short & medium-term sectoral plans	Priority setting & incorporation into implementation action plans
Resource Allocation (National budget) Allocate funding for climate-specific actions	Include climate-related programmes/projects (sectoral and cross-sectoral) Relocate funding to vulnerable sectors/regions	Incorporate climate related activities and include climate considerations in project selection criteria	Priority setting & budget reallocations at local level
Programming & Implementation	Sector-level development plans and budgets	Sector programming: Incorporate climate-related activities	Local actions

Modified from UNDP (2010)

2. Policy and Institutional framework to support Climate Change Management in Uganda

2.1 Policy Framework for Climate Change in Uganda

Uganda's climate change policy is in the final stages of approval and is supported by a number of relevant policies, laws, and regulations that can be strengthened to address climate change issues. Relevant plans and policies include, but are not limited to: 1) National Adaptation Programme of Action (2007); 2) National Development Plan (2010); 3) The National Environment Management Policy (1994); 4) the Uganda Forestry Policy (2001); 5) the Energy Policy for Uganda (2002); 6) Renewable Energy Policy for Uganda (2007); 7) the National Health Policy (1999); 8) The Disaster Management and Preparedness Policy (1999-revised in 2003); 9) Agriculture Sector Development Strategy and Investment Plan (2010) and 10) Environment Natural Resources Sector Investment Plan (ENR-SIP) (2007), Land Policy (2011) and population policy and action plan (2009).

Relevant laws for management of climate change issues include: 1) the Constitution of Uganda (1995); 2) National Environment Act (Cap 153); 3) the National Forestry and Tree Planting Act (Act No 8 of 2003); 4) the Water Act (Cap 152); 5) the Land Act (Cap 227); 6) the Local Governments Act (Cap 243); 7) Soil Conservation Measures and Guidelines (2000); 8) the National Environment (Mountainous and Hilly Areas Management) Regulations (S.I No 153-6); and 9) National Environment (Wetlands, River Banks and Lake Shores Management) Regulations (S.I No 153-5). Highlights of the key policies and legislation with provisions of climate change adaptation and mitigation are given in Appendix 4 and 5.

Uganda is also a party to regional bodies and treaties that could add value to the process of integration of climate change through exchange of experiences from the different countries, including the New Partnerships for African Development (NEPAD), 2001; Common Market for Eastern and Southern Africa (COMESA) Treaty, 1993; and the Inter Governmental Authority for Development (IGAD), 1986. Uganda signed the EAC Protocol on Environment and Natural Resources; which provides that partner states shall develop and harmonize their laws, policies and strategies for mitigating the effects of greenhouse gas emissions and the manner and procedures for benefiting from climate change adaptation and mitigation activities and strategies. The Protocol also provides that states shall promote the development and implementation of education as well as training programmes, including strengthening of national human and institutional capacities on climate change; develop strategies for the transfer, acquisition and adaptation of relevant technology to alleviate the pressure on fragile ecosystems and natural resources; and contribute to mitigation of climate change. Uganda has actively participated in the development of the EAC Climate Change Policy which notes that adaptation to adverse impacts of climate change is of paramount importance and a priority for partner states. The EAC Secretariat is currently developing the EAC strategy and Master Plan that is expected to define the region's priority actions to address climate change.

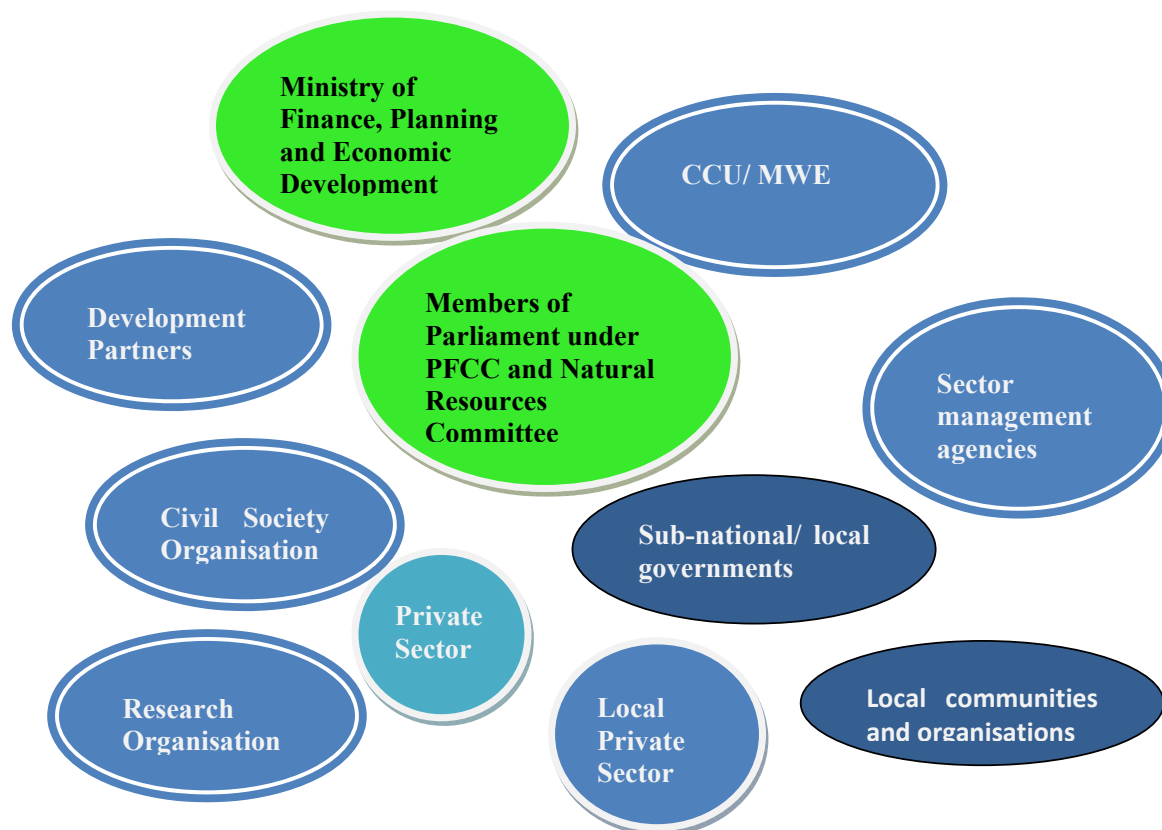
At the international level, Uganda ratified the UNFCCC on 08 September 1993 which obliges all Parties to cooperate in preparing for adaptation to the impacts of climate change; and to develop and elaborate appropriate and integrated plans for water resources and agriculture. The UNFCCC obliges all Parties to take climate change considerations into account in their relevant social, economic and environmental policies and actions. At national level, Uganda has undertaken a number of activities in support of UNFCCC implementation e.g. capacity-building activities related to UNFCCC in general and the Clean Development Mechanism (CDM) in particular. The following activities have also been accomplished:

- Compilation and submission of various negotiation issues to UNFCCC's Conference of the Parties (COP);
- Development of the National Adaptation Programme of Action (NAPA) in 2007;
- Establishing a Climate Change Unit in the Ministry of Water and Environment in 2008; and
- Implementation of several education, training and public awareness activities.

2.2 Institutional Framework for integration of climate change

The government of Uganda and its partners have demonstrated commitment for creating an enabling institutional set up to manage and monitor climate change issues, which serves as a good opportunity for integration of climate change in different plans and budgets. The government institutions closely work with a number of non-government institutions and development partners to implement different intervention to address issues of climate change. Figure 2 gives a map of the key stakeholders relevant to climate change mainstreaming in Uganda.

Figure 2: Key Stakeholders related to the climate change integration Process



2.2.1 Government Institutions

A number of government agencies have responsibilities related to the management of climate change. Key institutions include:

- ***The Climate Change Unit of the Ministry of Water and Environment:*** The CCU coordinates all issues concerned with climate change in Uganda.
- ***Parliamentary Forum on Climate Change (PFCC):*** The PFCC addresses the environmental, social and economic pressures presented by global climate change.

- **The National Planning Authority (NPA):** The NPA is mandated to put in place, coordinate, manage and evaluate frameworks, systems and strategies for cost-effective and participatory national development planning in Uganda. NPA's primary function is to produce comprehensive and integrated development plans for the country, elaborated in terms of the perspective Vision, long and medium-term plans.
- **Department of Disaster Management and Refugees - Office of Prime Minister:** The Department for Disaster Management and Refugees (DDMR-OPM) in the Office of the Prime Minister (OPM) is responsible for multi-sectoral coordination and collaboration in disaster risk reduction.
- **Ministry of Local Governments (MOLG):** Responsible for co-ordinating and supporting local governments for sustainable, efficient and effective service delivery in a decentralized framework government.
- **National Environment Management Authority (NEMA):** the agency responsible for ensuring sound environmental management and biodiversity conservation in Uganda.
- **Directorate of Water Resource Management and the Directorate of Water Development, MWE:** The Directorates of Water Resources Management and Directorates of Water Development within the Ministry of Water and Environment have programmes and projects with interventions aimed at addressing vulnerability and adaptation responses to climate change.
- **Ministry of Agriculture, Animal Industry and Fisheries (MAAIF):** Responsible for coordination of and support to the Agriculture, Fisheries and Animal Industry Sectors and is a focal point for UNCCD.
- **Forest Sector Support Department (FSSD);** a department under the Ministry of Water and Environment responsible for coordination, monitoring, and supervision of the forest sector and a Focal Point for REDD+ interventions.
- **National Meteorological Authority:** Responsible for coordination of climate and weather related information and acts as a focal point for Inter-governmental Panel on Climate change (IPCC).
- **National Forestry Authority (NFA):** Responsible for management of Central Forest Reserves and has promoted different REDD interventions.
- **District Forest Services (DFS);** the District Local Government Sector, responsible for management of local forest reserves (LFRs) and ensuring sustainable management and conservation of forest patches on privately and communally owned lands.
- **Wetlands Management Department (WMD);** a Department under the Ministry of Water and Environment responsible for sustainable management and conservation of wetland resources in Uganda.
- **Fisheries Department (FD);** a Department under the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) responsible for sustainable fisheries resources management in Uganda.
- **Population Secretariat (POPSEC)**
- **Ministry of Gender, Labour and Social Development**
- **Academia: Universities and Tertiary institutions**
- **Ministry of Education and sports (National Curriculum Development Centre)**

2.2.2 Development Partners

The need to mainstream adaptation to climate change into development planning and ongoing sectoral decision-making is increasingly recognized, and several bilateral and multilateral development agencies have taken interest in Uganda. These include among others United Nations Development Programme and other UN bodies (UNDP) such as FAO, UNEP, UNICEF; Government of Denmark/DANIDA; German Technical Cooperation GTZ/GiZ; UK Aid/Department for International Development; the

World Bank; USAID; Norway; Icelandic International Development Agency (ICEIDA), African Development Bank and Government of Japan among others.

2.2.3 Civil Society Organizations and the Private Sector

A number of CSOs and the Private Sector are also involved in implementation of climate change related activities. They have facilitated the formation of a coalition of organizations in (the Climate Action Network - Uganda/CAN-U); a platform for lobbying and advocacy to enable a strong united voice within civil society, with more than 40 members.

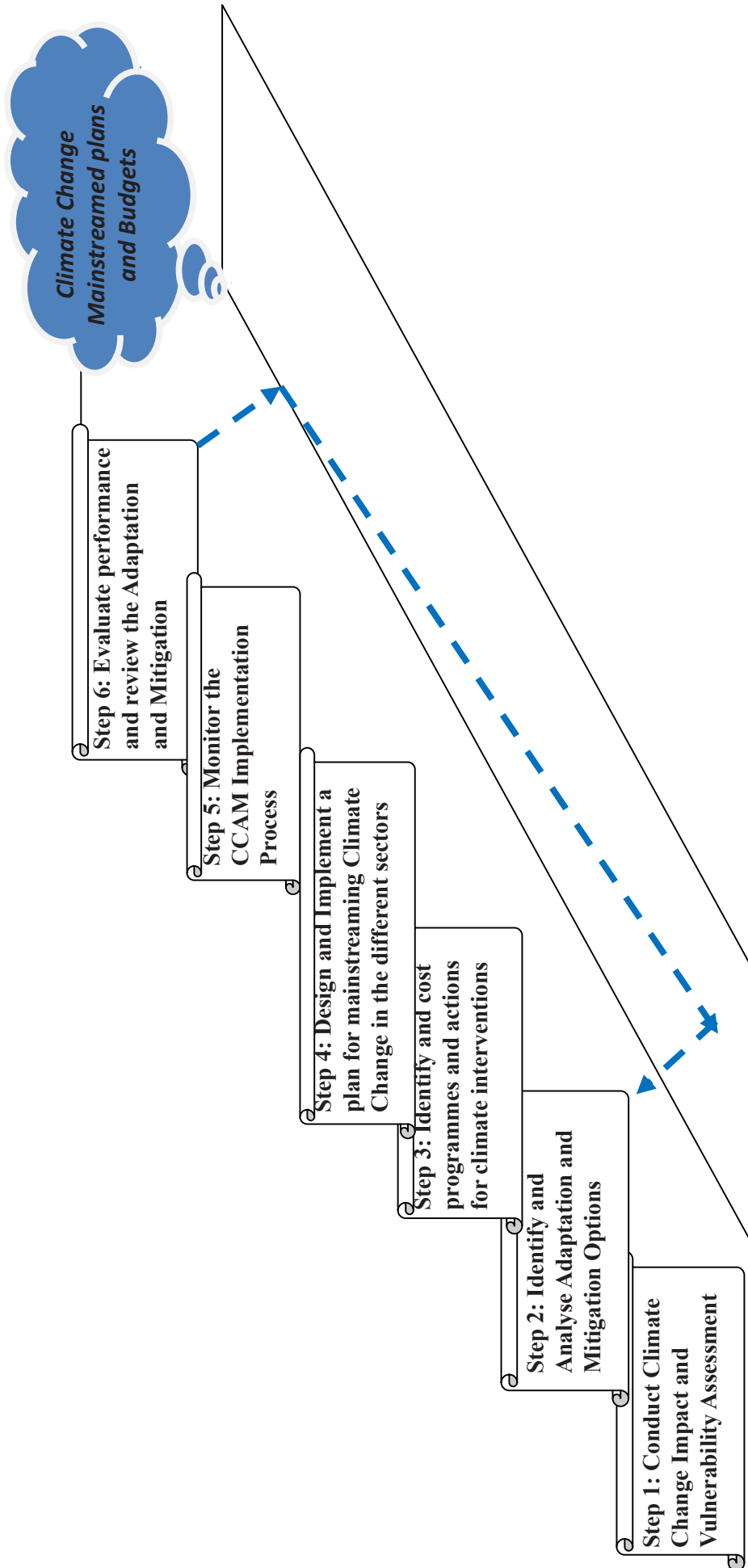
2.2.4 Regional Initiatives

Regional sectoral support programmes such as the Nile Basin Initiative (NBI) the Lake Victoria Basin Commission (LVBC, an institution of the East African Community) and the Lake Victoria Environmental Management Programme (LVEMP) have interventions with a focus on climate change and have a sub-programme on climate change. These can serve as opportunities for considering integration of climate change in the perspective of Trans-boundary Natural Resources Management (TBNRM).

3. Basic steps for integration of climate change in Sector Plans and Budgets

The process of integrating climate change has a series of steps that guide how different actions can be implemented. In most cases, the process is iterative, with information and data at different stages being useful for informing and strengthening other prior steps. The steps vary in different countries, depending on the existing planning and budgeting processes. Figure 6 gives the proposed steps for mainstreaming climate change in sector plans and budget that is most appropriate for Uganda, based on the existing planning and budgeting processes.

Figure 6 Basic Steps and tools in the process of Climate Change Mainstreaming in Sector Plans and Budgets



3.1 Step 1: Conduct Climate Change Impact and Vulnerability Assessment

Given the fact that resources are always limiting and actions to climate change needs to be prioritized. It is important to identify the populations who are most affected and at risk, the existing responses and coping mechanisms, their locations and how the planned interventions can be targeted for efficient and effective outputs. To that effect, an impact and vulnerability assessment should be carried out to determine the extent to which populations in different geographical locations and social strata are exposed to climate change. The assessment should also include an evaluation of the baseline climate conditions, potential barriers and opportunities to adaptation and mitigation. This should include an evaluation of the existing responses and their cost-effectiveness and a capacity needs assessment for addressing climate change issues. Use should also be made of the Indigenous Knowledge (IK), technologies, practices and coping mechanisms that people have always used for different livelihood needs.

Climate change vulnerability assessment should focus on 4 dimensions:

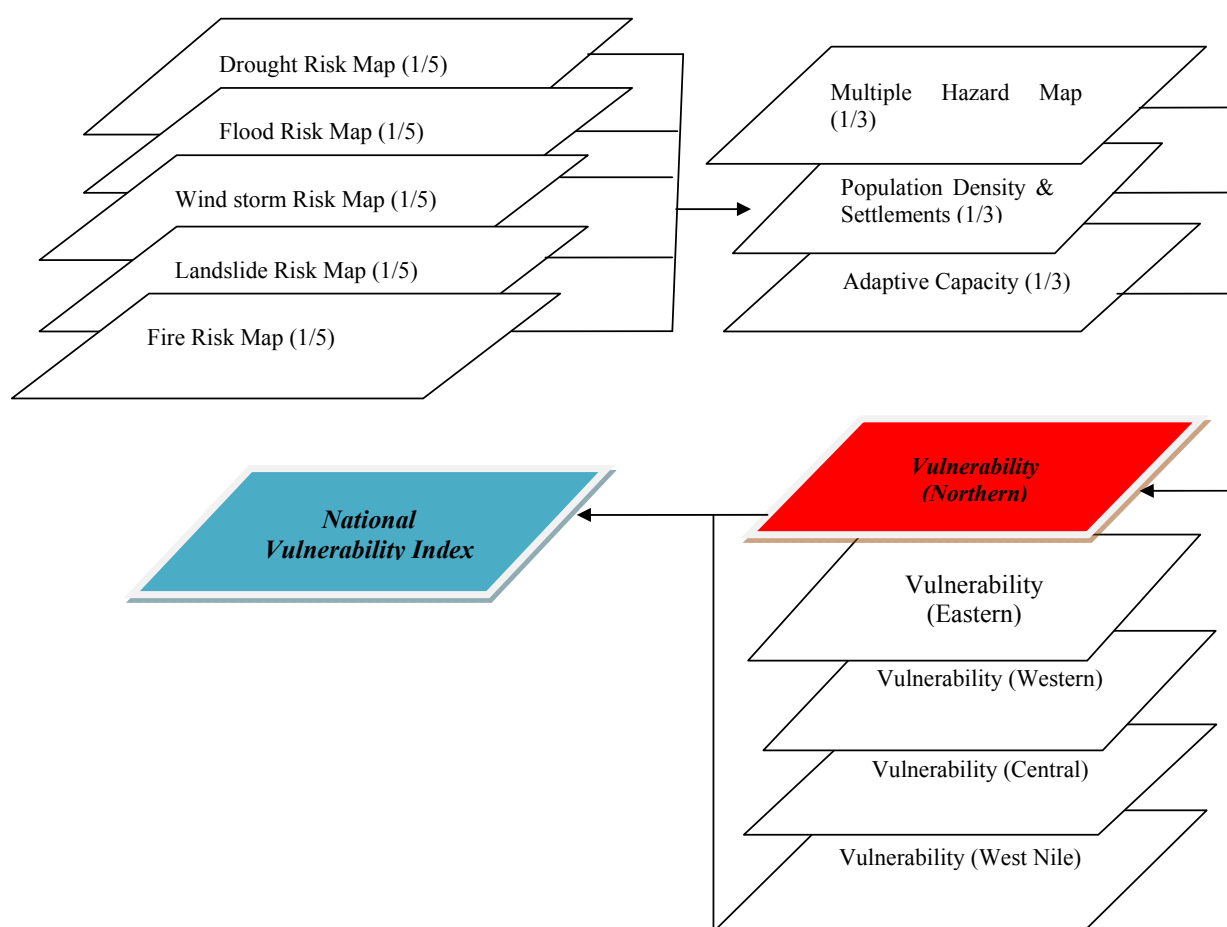
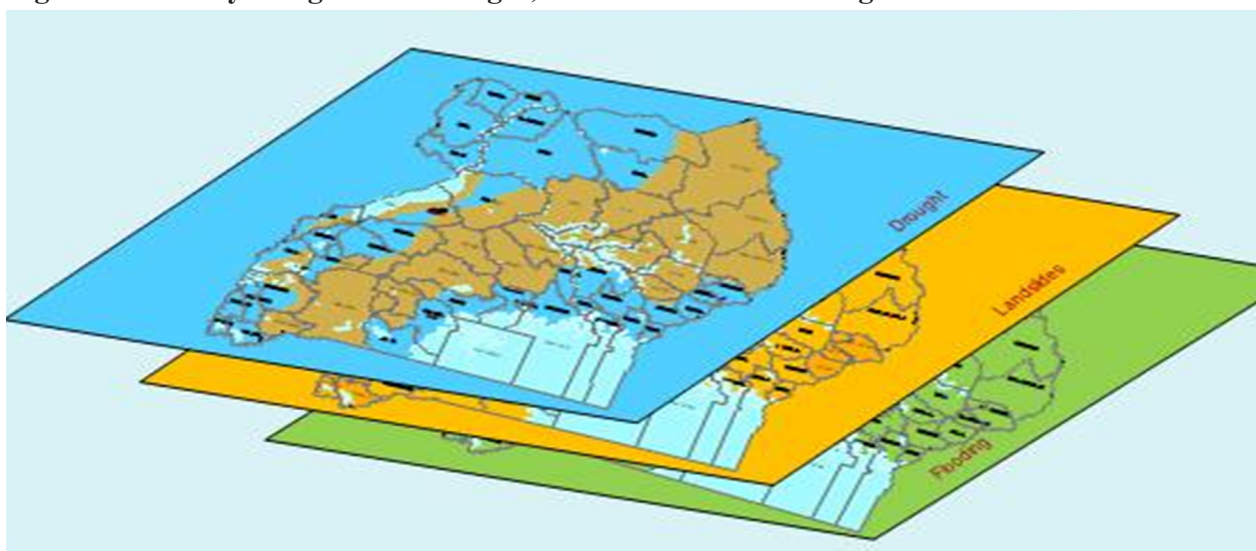
- **Physical vulnerability** to and influence on weather patterns;
- **Social vulnerability and community resilience;**
- **Governance** – identification and assessment of Public Private Partnership, institutional, legal and policy framework, political will and coherence including involvement of parliament, related committees, district council and sub county committees;
- **Economic vulnerability** – mostly the additional costs of climate change on the economy.

The key output from this step is a Vulnerability Index Map (Figure 7), which should include:

- Information on climate change conditions;
- Links between climate change and the key development sectors;
- Degree of exposure to climate risks;
- Impacts of Climate Change on key development sectors; and
- National and capacities to address climate change.

The major actions needed during the impact and vulnerability assessment include:

- ✓ Determining the scope of the assessment;
- ✓ Profiling and describing the current distribution and burden of climate-sensitive areas;
- ✓ Assessing the current coping, preventive or adaptive measures and their effectiveness to current and future climate change effects;
- ✓ Assessing the future potential impacts using selected scenarios;
- ✓ Identifying additional adaptation policies and measures to reduce potential negative climate change effects;
- ✓ Identifying procedures for evaluation of effectiveness of climate change interventions after implementation;
- ✓ Synthesizing the results and preparing the Assessment report.

Figure 7: Developing a Climate Change Risk and Vulnerability Index for Uganda**Figure 8: Overlay of Uganda's Drought, Landslides and Flooding themes**

3.2 Step 2: Identify and Analyze Adaptation and Mitigation Options

To address issues raised during the impact and vulnerability assessment, a range of policy options should be identified for implementation. The policy options should be operationalised by developing and implementing programmes and activities that can influence the sector policies and plans to be adjusted to climate change shocks (adaptation) and/ or reduce climate change drivers (mitigation).

The different options should be subjected to an analytical process where decisions are made to select the most appropriate in terms of effectiveness, technical and economic feasibility and other criteria (Table 4). These interventions may include existing, new or untried interventions and should option compliment already existing options. Each option should be thoroughly analysed and those that are likely to provide the best results in terms of reducing the climate change burden, selected and implemented. It should be noted that climate change has unintended impacts across borders; and therefore the options considered should not be bound by administrative boundaries.

Table 4: Key Evaluation Criteria for use when selecting Adaptation Options

Criterion	Description
Effectiveness	Capacity to solve problems or realize opportunities derived from climate change impacts (e.g., economic benefits, costs avoided, lives saved)
Ease of implementation	Potential legal, political, institutional, barriers
Acceptability to local stakeholders	All identified possible adaptations are attractive to some stakeholders, but may not be equally acceptable or attractive to all stakeholders for political, economic, social or cultural reasons
Acceptability to Financing Agencies/Ministries/ Donors	Are the financing agencies/ministries involved willing to support the option?
Endorsement by Experts	Is the option consistent with international best practices?
Timeframe	Are short-term or long-term strategies more desirable; How does the timeframe needed to implement the option compare with that available (e.g., are there specific project or funding time horizons)?
Cost	Costs to implement and maintain; cost sharing possibilities
Institutional Capacity	How much additional capacity building and knowledge transfer is required to implement the proposed adaptation
Size of Beneficiaries Group	Does the adaptation provide small benefits to a large number of stakeholders and people or large benefits to a small number?
Fit with local development priorities and interests	Do the adaptation activities fit with the local development priorities and local initiatives?
Potential Environmental or Social Impacts	Are there possible adverse impacts on the environment or people (e.g., are additional GHG emissions likely)?
Capacity to Sustain Over Time	Can the adaptation be successfully sustained at local, district or national level if implemented?
Gender sensitiveness	How does the proposed intervention affect the roles of women, men, youths and PWDs? Does it advantage any group at the expense of another? Does it take into consideration the aspirations of different groups?
Participation	Have the community members participated in identifying and selecting the proposed option?

Modified from UNDP (2010)

3.3 Step 3: Identify and cost programmes and actions for climate interventions

The adaptation and mitigation options can easily be implemented if packaged into climate interventions and actions under defined programmes and actions. The relevant programmes and actions can then be translated as effective responses in form of emergency management policies and legislation. Table 5 outlines some key actions to mainstream climate change adaptation and mitigation into policy processes in the different sectors.

Table 5: Proposed actions to mainstream climate change in policy processes

Strategic action	Specific actions	Expected Results
Risk Assessment	Undertake comprehensive assessments of the risks of extreme weather variability on population	Increased understanding of vulnerability to CC Ability of systems to respond Identify basis for enhancing resilience
Integrated environment and surveillance by different sectors	Establish a functional integrated environment and surveillance system. Incorporate key environmental indicators including climate data in the information systems of different sectors	Timely and evidence-based decisions for effective management of environmental risks
Efficiency in production	Developing and adopting efficient technologies Provide incentives for clean production technologies	Reduced emissions Reduced consumption
Increasing land productivity	Increasing production per unit area for agriculture mechanization	Increased productivity per unit area Increased precision
Effective management of climate-sensitive Concerns	Integrated management to handle climate change induced effects in the different sectors Develop and integrated multi-sectoral management plan Develop early warning systems	Reduce the effects of climate change Multi-sectoral management plans Appropriate early warning systems
Preparedness for and response to impacts of weather, hydrological and climate related emergencies and extreme events	Formulate & implement emergency management policies, legislation frameworks and programmes and emergency response and recovery plans Human resource development programmes including training and education	Effective and timely response to climate- sensitive problems
Research & Knowledge generation	Develop and implement a research agenda focusing on better understanding of local effects of climate change; generating and disseminating knowledge on locally-appropriate adaptation measures	Increase understanding of CC effects Increase communication of climate links to other sectors within NAPAs, NCs and national processes
Strengthening human & institutional capacities	Identify skills gaps; formulate & implement a capacity building action plan Strengthening planning and budgeting that integrates climate change issues Identify infrastructure gaps and address them	National capacity for disaster prediction & emergency response Establish a CC coordination mechanism at the National Level Plans that integrate climate change issues
Economic analysis of the various options of climate change mitigation and adaptation	Identify cost centres and generate budgets	Budgets for specific interventions

3.4 Step 4: Design and Implement a plan for mainstreaming Climate change in the different sectors

To guide operationalisation of the programmes and actions, an implementation plan for mainstreaming climate change in the different sectors is developed. The implementation plan also serves as a tool for allocating resources for mainstreaming in time and space. The plan should include details of the key stakeholders, their roles and responsibilities and should set timelines for specific outputs. The implementation plan for climate change mainstreaming should include the following sections:

- ~ Strategic plan outlining actions and timelines of involved stakeholders;
- ~ Capacity building needs assessment and training plan;
- ~ Budget covering expenditure needs and revenue sources;
- ~ Outreach/communication plan;
- ~ Sustainability plan;
- ~ Plan for monitoring the performance of adaptations.

Though mainstreaming is a continuous process, the implementation plan should set specific time bound milestones according to the major tasks. The milestones should indicate planned time frame for delivery and lead responsible institutions for the implementation. Table 6 gives a summary of the key milestones, the estimated time frame for implementation and responsible institutions.

Table 6: Key Milestones and Institutional Responsibilities for CC Adaptation

	Key Task/Milestone	Time frame	Responsible
1	Conduct CC Impact & Vulnerability Assessment for different sectors	6 months	NPA, NEMA, CCU, Makerere University,
2	Identify & Analyse Adaptation Actions	3 months	CC related Sectors, NPA, MOFPED, CCU
3	Design costed Programmes for CC Adaptation and mitigation	2 months	CC related Sectors, NPA, MOFPED
4	Design the Adaptation Plan and Mainstreaming Agenda	2 months	CC related Sectors, NPA, MOFPED, CCU
5	Mobilise funds for mainstreaming CC Adaptation and implementation	12 months	MOFPED, NPA, CCU, MoLG, Development Partners, Local communities
6	Raise awareness on climate issues among policy makers in the central and local governments and implementers and the community level	24 months	CCU, MOLG, MoFPED, CC related Sectors, NPA, NEMA, Districts, Media houses, CSOs including FBOs
7	Train different relevant sector actors on climate change adaptation and mitigation at all levels	18 months	CCU, MOLG, CC related Sectors, NPA, NEMA, Districts,
8	Develop District & Community level adaptation and mitigation Plans	12 months	CCU, MOLG, CC related Sectors, NPA, NEMA, Districts
9	Design pilot adaptation and mitigation actions at all level	18 months	MOLG, CC related Sectors, NPA, Districts
10	Implement different Sector CC adaptation and mitigation plans	60 months	CC related Sectors, Districts, CCU
11	Monitor the mainstreaming process for CC adaptation and mitigation	48 months	MoFPED, CCU, MOLG, CC related Sectors, NPA, Districts
12	Evaluate performance and review the Adaptation and Mitigation process	48 months	CCU, MOLG, CC related Sectors, NPA, NEMA, District Council, Local communities
13	Including climate related gender dimensions in all sectors	12 months	Ministry responsible for Gender, MoLG

To harmonize the processes and create room for synergies in different sectors, these guidelines propose an outline for preparing the implementation plans for mainstreaming climate change (Appendix 3). The implementation plans should be based on the climate change impact and vulnerability assessment.

- a. Sub-Step 4a: Consolidate policies and measures leading to climate change mitigation identified by each sector during the mainstreaming and consolidate them into sectoral or area specific national appropriate mitigation actions (NAMAs) and REDD+; and then submit them to the UNFCCC for support;
- b. Sub-Step 4b: Consolidate policies and measures leading to climate change adaptation options, identified by each sector during the mainstreaming and consolidate them into sectoral or area specific adaption plans and actions; synthesise them into the national adaptation plan; and then submit them to, among other areas, the UNFCCC for support;
- c. Sub-Step 4c: Consolidate policies and measures identified by each sector during the mainstreaming that could be undertaken as part of the sectoral activities under the Government of Uganda budget framework

3.5 Step 5: Monitor the CCMA Implementation Process

The climate change mainstreaming process normally involves a number of challenges including the period needed to realize significant outcomes and impact and in some cases lack of precedents to some actions. This is difficult to justify to policy makers and planners, in light of the enormous human, capital and financial resources that have to be invested in the process. Given the long duration for the outcomes and impacts, there is a risk that the implementation process can lose track, without being noticed, until at the final evaluation point. It is therefore important that a continuous monitoring mechanism should be put in place, to keep the implemented climate change mainstreaming programmes and actions relevant and focused. The monitoring system should consider well defined criteria such as cost, ease of implementation, likelihood and extent of expected benefits and adverse impacts.

In all the monitoring process, integration of climate change adaptation and mitigation should consider aspects of human resource, documentation and financing and budgeting; as outlined in the following proposed actions:

Human Resource

- There is need for a Focal Point person or Desk Officer on Change
- Mainstreaming at different levels, i.e. Districts and Ministries, where implementation is carried out;
- Need for Capacity building for clear definition of roles and Climate Change activities;
- At district level, the Chairperson of the Natural Resource & Environmental Committee should also be a member of the Focal Point office to cater for political interests.

Documentation

- At district level, monthly Technical Planning Committee (TPC) meetings should always address Climate Change mainstreaming issues;
- For quarterly and annual progress reports, Climate Change issues should be included;
- Ministry of Finance should put emphasis on Climate Change reporting as funds are released;
- An Output on Climate Change mainstreaming should be created on Output Budgeting Tool (OBT);
- For transparent accountability from all sectors, the Climate Change component should be drawn out of the environment sector, so as to cater for other sectors;

- There is need for baseline information on Climate Change mainstreaming, so that such funding should be provided for.

Financing and Budgeting

- A percentage of project funds from different sectors should be allocated to the Climate Change component for sustainability purposes;
- For accountability purposes, finance reporting should have sufficient evidence on Climate Change mainstreaming activities;
- In order to avoid diversion of funds, Internal Auditors should be keen on Climate Change work plan and accountability (vouchers).

3.6 Step 6: Evaluate performance and Review the Adaptation and Mitigation Process

One of the most important steps during the mainstreaming of climate change in sector plans and budgets is to verify whether the implemented adaptation and mitigation programmes and actions have helped to climate-proof the different sectors. This is accomplished through regular evaluation of the interventions and subjecting the different systems to a climate change check at regular intervals. The evaluations should be carried out as part of other existing evaluation systems within the relevant institutions such as assessment of existing sector plans. However, specific climate change adaptation indicators should be stipulated and evaluated from national to local community levels. Such an action should ensure that all Joint Sector Reviews should pin point progress made to adapt to climate change and the extent to which climate change is affecting different outcomes. The step should aim at having climate change reflected in sector level policy objectives and statements, as well as sector workplans and budgets. Climate change should also be considered as one minimum sector performance standards that are assessed annually. Indicators for measuring the performance of private sector and NGOs in CC implementation should be developed for their effective involvement. Evaluation of the adaptation process must be iterative, where the results will be used to inform a review or refining of the initial adaptation strategy or specific components.

3.7 Stakeholder Participation and responsibilities in CCMA

Given that a number of sectors have already initiated climate change interventions, it is proposed that they should be brought on board during the integration process. It should be noted that the climate change integration process should stipulate the roles and responsibilities of the different actors. Table 7 highlights the key institutions and their roles and responsibilities in integration of climate change in sector plans and budgets.

Table 7: Key Stakeholders and their roles and responsibilities in climate change adaptation and mitigation

Stakeholder/ Institution	Roles/ responsibilities
Public Sector institutions	
Ministry of Water and Environment, including CCU, FSSD, WMD, DWD, FSSD, ESSD, DWRM	<ul style="list-style-type: none"> ✓ Coordinate implementation of the UNFCCC ✓ Coordinate implementation of climate change interventions ✓ Development of policy and legislation on climate change (including the proposed National Climate Change Policy) ✓ Develop a climate change curriculum for different target groups in consultation with line institutions ✓ Explore an incentive mechanism to encourage investment in climate change related mitigation e.g. carbon trade, through sequestration by afforestation /reforestation, wetland conservation ✓ Domestic and productive uses of natural resources ✓ Integrated Water Management Resources
Ministry of Education- Curriculum development center, Tertiary institutions	<ul style="list-style-type: none"> ✓ Develop a climate change curriculum for different target groups in consultation with line institutions
Ministry of Health and CCU	<ul style="list-style-type: none"> ✓ Integrate climate change adaptation into health policy ✓ Conduct climate change adaptation training & awareness ✓ Review health indicators to integrate climate change adaptation
Ministry responsible for ICT	<ul style="list-style-type: none"> ✓ Collection and transmission of information
Ministry of Education and Sports	<ul style="list-style-type: none"> ✓ Teaching students at all levels on Climate Change
CCU, NEMA	<ul style="list-style-type: none"> ✓ Provide technical guidance and tools for climate change adaptation and mitigation ✓ Monitor, co-ordinate and supervise implementation of CC interventions to ensure that climate change effects are minimized ✓ Mobilise funding for climate change adaptation
NFA/UWA/Fisheries/ Wetlands/ CCU	<ul style="list-style-type: none"> ✓ In consultation with Ministry of works and relevant agencies, design and develop infrastructure that is climate-proofed ✓ Build capacity in personnel/ staff in climate change disaster preparedness and management ✓ Biodiversity and ecosystem monitoring mechanisms to monitor climate change impacts
NPA and CCU	<ul style="list-style-type: none"> ✓ Co-ordinate integration of climate change within the national budgeting and public finance management processes ✓ Monitor and ensure that climate change issues are given priority during implementation of the NDP
MOFPED and CCU	<ul style="list-style-type: none"> ✓ Integrate climate change adaptation within the national budgeting and public finance management processes ✓ Work with different ministries to mobilize external funding for climate change financing ✓ Establish a contingency fund to handle climate change related disasters that are beyond the planned/ expected/or foreseen
Ministry, Works, Transport and Communication and CCU	<ul style="list-style-type: none"> ✓ Integrate climate change adaptation into infrastructure development and maintenance programmes ✓ Ensure that all developed infrastructure are climate-proofed

Stakeholder/ Institution	Roles/ responsibilities
Department of Meteorology and CCU	<ul style="list-style-type: none"> ✓ Establish weather monitoring infrastructure at major institutions ✓ Provide appropriate climate data/information to different sectors
Parliamentary Forum on Climate Change (PFCC) and CCU	<ul style="list-style-type: none"> ✓ To provide a Parliamentary information help desk on climate change issues ✓ To create linkages at national and international levels that can promote global action on Climate Change. ✓ To promote information exchange, policy dialogue and action between the different stakeholders in Uganda, regionally and internationally
Parliament and respective committees	<ul style="list-style-type: none"> ✓ Handle the legislative mechanism and allocation of resources and monitoring
Ministry of Education- Curriculum development centre, Research and Tertiary Training Institutions and CCU	<ul style="list-style-type: none"> ✓ Integrate climate change adaptation into training curriculum for relevant courses ✓ Develop and implement a research programme to provide information and data for climate change strategies ✓ Develop a climate change curriculum for different target groups in consultation with line institutions
Ministry of Health	<ul style="list-style-type: none"> ✓ Implement projects to reduce vulnerability in areas which are susceptible to climate-sensitive diseases and epidemics ✓ Mainstream climate change issues in the health sector
MAAIF and CCU	<ul style="list-style-type: none"> ✓ Implement interventions in the agriculture and fisheries sector related to climate change ✓ Mainstream climate change issues in the agriculture and fisheries sectors
MOLG and CCU	<ul style="list-style-type: none"> ✓ To promote and harmonize Climate Change responses at both the national and local levels ✓ To guide local authorities on mainstreaming of climate change during the local government processes
District Authorities and CCU	<ul style="list-style-type: none"> ✓ Mobilise communities and sensitise them on climate change effects ✓ Integrate climate change adaptation into the District Development Plans ✓ Develop and implement climate change adaptation micro-projects at the community level ✓ Monitor and report on climate change programmes related to within their districts ✓ Consider making ordinances/bye laws that will help in disaster management and response
Local communities	<ul style="list-style-type: none"> ✓ Identify and relevant indigenous knowledge ✓ Holding different actors accountable in terms of service delivery ✓ Shape the policy and through t the entire policy cycle
Non-state Actors	
Private sector and CCU	<ul style="list-style-type: none"> ✓ Develop climate change awareness toolkits for their staff and clients ✓ Develop climate change related technologies ✓ Invest in climate change adaptation/ mitigation projects e.g. energy saving technologies, provision of clean water and waste management services

Stakeholder/ Institution	Roles/ responsibilities
Civil Society Organizations and CCU	<ul style="list-style-type: none"> ✓ Generate and disseminate climate change adaptation and mitigation information and support tools ✓ Mobilize and sensitise community members and leaders about climate change and its effects on different sectors ✓ Develop and implement community projects for climate change adaptation ✓ Mobilise financing for climate change adaptation actions at community level ✓ Integrate climate change adaptation issues into CSOs' advocacy and communication strategies ✓ Build capacity of local development actors (including faith-based organizations) in climate change adaptation
Development Partners	<ul style="list-style-type: none"> ✓ Incorporate climate change adaptation into financing guidelines/ strategies ✓ Provide grant financing for climate risk assessment and climate change adaptation in all projects
Media	<ul style="list-style-type: none"> ✓ Publicise climate change actions
Cultural institutions	<ul style="list-style-type: none"> ✓ Contribute Indigenous Knowledge (IK)
Faith based organisation	<ul style="list-style-type: none"> ✓ Mobilise different actors

3.8 Monitoring and Evaluation of the mainstreaming

A system for monitoring and evaluation should be put in place to follow up on the success of the mainstreaming process. The monitoring and evaluation would be best carried out by the National Planning Authority, MoFPED, MoLG, Office of the Prime Minister (OPM) and CCU, in relation to the monitoring of implementation for the NDP. The M&E system should make use of climate data and develop an analytical framework, with inputs from different sectors. Performance targets, monitoring and reporting schedules and data collection systems, must include key climate change information and its links to different sector outcomes, as stipulated in the sector investment plans and MTEF plans.

All reporting centres within the different sectors should share information on how they are addressing climate change. This requires investment in data and research, which is already a key objective within the NDP. For effective monitoring, strong partnership will also be needed to link with climate related institutions such as the CCU of the Ministry of Water and Environment. Results from the monitoring of climate change integration and related information should be widely shared using platforms such as the Joint Sector Reviews (JSRs). The monitoring and evaluation should aim at capturing lessons learnt during the integration process to be used during planning and budgeting sessions. Appendix 6 provides a template for use during the monitoring and evaluation for different sectors. For effective monitoring, strong partnerships and synergies across all sectors should be strengthened to link with the CCU and should be coordinated by the NPA and should involve MoFPED, MoLG, Office of the Prime Minister (OPM), Local Government Authorities and CCU. There is also need to package and disseminate information to target grassroots' beneficiaries.

3.9 Indicators of the mainstreaming process

The mainstreaming process of climate change adaptation and mitigation in different sector plans and budgets will aim at having the proposed interventions not as stand-alone activities but with a focus at areas affected by climate change impacts. Performance indicators for the integration will be based on achievements of proposed interventions in the different sectors and will be considered within the respective sector-specific integration guidelines. Respective sectors should revisit their indicators to ensure they are Climate Change proof and those without proper indicators should be revised to have them designed. Appendix 7 gives a framework for use during the impact evaluation.

References

- Barihaihi (2010). A review of Uganda's Disaster Risk Reduction and Climate Change Adaptation Status. Africa Climate Change Resilience Alliance (ACCRA). Kampala.
- CIGI (2007) International Risk Report: The Center for International Governance (CIGI).
- Government of Uganda (2007) National Adaptation Programmes of Action (NAPA) Kampala.
- Government of Uganda (2009a) National Development Plan 2010/11 – 2014/15.
- Government of Uganda (2009b) The State of Uganda Population Report, 2009: Addressing the Effects of Climate Change on Migration Patterns and Women (Funded by UNFPA Uganda).
- Hepworth, N D, 2010. Climate change vulnerability and adaptation preparedness in Uganda. Heinrich Böll Foundation, Nairobi, Kenya.
- Human Development Report (2009). United Nations Development Programme, New York.
- Huq, S. H Reid, M Konate, A Rahman, Y Sokona and F Crick (2004). Mainstreaming adaptation to climate change in Least Developed Countries (LDCs). Climate Policy 4:25-43.
- IPCC (2007) Fourth Assessment Report: Climate Change 2007, Section 12.2.4.6 – Mainstreaming climate change into development choices: Setting priorities. Intergovernmental Panel on Climate Change.
- MAAIF, 2009. Integration of Climate Changes Issues into Agricultural Planning Frameworks, Planning Department, MAAIF.
- Ministry of Water, Lands and Environment 2002, First National Communication on Climate Change in Uganda.
- MWE (2007a). Climate Change: National Adaptation Programmes of Action, NAPA, DOM, Kampala.
- Namanya, D. B. (2009). An Assessment of the Impact of climate change on the Health Sector in Uganda: A case of Malaria and Cholera epidemics and how to improve planning for effective preparedness and response. Paper presented at Climate Change Regional Seminar organised by SMHI at Gobabeb Research Center in the Namib Desert on 13 May 2009.
- NEMA (2008). State of Environment Report for Uganda. National Environment Management Authority Publications.
- OECD (2009). *Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance*, OECD, Paris.
- Orindi, V.A., and Eriksen, S., 2005. Mainstreaming adaptation to climate change in the development process in Uganda, African Centre for Technology Studies (ACTS) Eco-policy Series No. 15.
- OXFAM, (2008). Turning up the heat: Climate change and poverty in Uganda. Accessed online from www.oxfam.org.uk/publications.
- United Nations Development Program (2007), Uganda Human Development Report: Rediscovering Agriculture for Human Development.

UNDP, 2010: A Handbook for Conducting Technology Needs Assessment for Climate Change. New York.

UNFCCC (1992). The United Nations Framework Convention on Climate Change.

http://unfccc.int/essential_background/convention/background/items/1349.php.

UNFCCC (2008). Investment and Financial Flows to Address Climate Change: an Update.

UNFCCC, 2007. The Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate Change.

USAID (2007). Adapting to Climate Variability and Change: A Guidance Manual for Development Planning. US Agency for International Development, Washington. http://www.usaid.gov/our_work/environment/climate/docs/reports/cc_vamannual.pdf

Appendices

Appendix 1: Definition of Key terms in Climate Change Adaptation and Mitigation

Adaptation: Adjustments in human and natural systems, in response to actual or expected climate stimuli or their effects, which moderate harm or exploit beneficial opportunities (IPCC 2007).

Adaptive capacity: The ability of a system to adjust to climate change (including climate variability and extremes), moderate potential damages, take advantage of opportunities or cope with the consequences. Adaptive capacity is a function of the relative level of a society's economic resources; access to technology; access to information on climate variability and change; and skills to make use of the information, institutions (i.e., degree to which institutions can help adaptations be adopted) and equitable distribution of resources (societies with relatively more equitable resource distribution will be better able to adapt than societies with less equitable distributions).

Climate: Climate in a narrow sense is usually defined as the “average weather” or more rigorously as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period is 30 years, as defined by the World Meteorological Organization (WMO). These relevant quantities are most often surface variables such as temperature, precipitation, and wind. Climate in a wider sense is the state, including a statistical description, of the climate system.

Climate change: Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). Climate change may be due to natural internal processes or external forces, or to persistent anthropogenic changes in the composition of the atmosphere or in land use. Note that the United Nations Framework Convention on Climate Change (UNFCCC), in its Article 1, defines “climate change” as: “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.” The UNFCCC thus makes a distinction between “climate change” attributable to human activities altering the atmospheric composition, and “climate variability” attributable to natural causes. See also climate variability.

Climate variability: Climate variability refers to variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all temporal and spatial scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forces (external variability).

Impacts of Climate change: Impacts of Climate change are consequences of climate change on natural and human systems. Depending on the consideration of adaptation, one can distinguish between potential impacts and residual impacts. Potential impacts: All impacts that may occur given a projected change in climate, without considering adaptation. Residual impacts: The impacts of climate change that would occur after adaptation.

Climate proofing: actions taken to protect infrastructure, systems and processes against projected climate impacts for a period into the future.

Greenhouse effect: the result of certain gases in the atmosphere (so-called greenhouse gases) absorbing energy that is radiated from the Earth's surface, and so warming the atmosphere.

Greenhouse gas: a number of anthropologically produced and naturally occurring gases whose presence in the atmosphere traps energy radiated by the Earth. This property causes the greenhouse effect. Water Vapour (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), and ozone (O₃) are the primary greenhouse gases in the Earth's atmosphere.

Limited or low regret options: options for which the implementation costs are low, while bearing in mind the uncertainties with future climate change projections, the benefits under future climate change may potentially be large.

Mainstreaming climate change adaptation: is the iterative process of integrating considerations of climate change adaptation into policy-making, budgeting, implementation and monitoring processes at national, sector and sub-national levels.

Maladaptation: occurs when an action or process increases vulnerability to climate change-related hazards. Maladaptive actions and processes often include planned development policies and measures that deliver short-term gains or economic benefits, but can eventually lead to exacerbated vulnerability in the medium to long term (UNDP 2004).

Mitigation: An anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks (IPCC 2007).

National Adaptation Programme of Action (NAPA): NAPAs provide a process for least developed countries (LDCs) to identify priority activities that respond to their urgent and immediate needs with regard to climate change adaptation.

Precautionary approach/principle: a principle which states that where there are threats of serious or irreversible damage, lack of scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. This approach is promoted by the UNFCCC to help “achieve stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous man-made interference with the climate system”.

Resilience: The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, capacity for self-organization and capacity to adapt to stress and change (IPCC 2007).

Sequestration: the process of increasing the carbon content of a carbon reservoir other than the atmosphere. Biological approaches to sequestration include direct removal of carbon dioxide from the atmosphere through land-use change, afforestation, reforestation and practices that enhance soil carbon in agriculture. Physical approaches include separation and disposal of carbon dioxide from flue gases and long-term storage underground.

Sink: any process, activity or mechanism that removes a greenhouse gas from the atmosphere.

Sustainable development: development which meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development tries to reconcile the needs of social and economic development with ecological conservation and environmental protection.

Vulnerability: the degree, to which a system is susceptible to, and unable to cope with adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed; its sensitivity; and its adaptive capacity.

Appendix 2: Impacts of climate change in Uganda by Sector

Effect Sector	Higher temperatures	Increased drought	Increased rainfall & shift in seasonality	Impacts
Human health	Shifts in areas / incidence of malaria; respiratory problems	Increased risk of water related disease; food shortage; water conflict; famine risk	Increased risk of waterborne disease; flood/landslide risk	Conflict; health burdens and risks; economic costs; poverty; inequity
Agriculture & food security	Shifts in the viable area for coffee and cash crops; reduced maize output; higher evapo-transpiration	Crop failure; reduction in grazing potential within the cattle corridor	Elevated erosion, land degradation, crop loss; change in crop yields/disease	Food insecurity; economic shocks; loss of incomes and livelihood options; poverty
Infrastructure & settlements	Increased evaporative losses; damage to roads; cooling costs	Significant implications for run-off-river HEP; water shortage	Flood damage to infrastructure, transport, communications and settlements	Economic loss and growth volatility; reduced reliability of HEP; migration
Environment & biodiversity	Biodiversity loss as niches are closed out; changing ecosystem dynamics and production	Additional pressure on natural resource use through fallback on forests	Shift in habitats and growing seasons	Loss of biodiversity and agro-ecological systems; loss of fishery productivity; deforestation

Source: Hepworth, 2010

Appendix 3: Outline for preparing the implementation plans for mainstreaming climate change

1. Background

- *Potential effects of climate change in different sectors in Uganda by region, district and sub-counties (Draw from the Climate Change Impact & Vulnerability Assessment)*
- *Purpose of the Climate Change Adaptation implementation plan*
- *How the plan has been developed (include stakeholder consultations and scientific analyses);*

2. Scope and coverage of the plan and implementation process

- *What is covered by the implementation plan?*
- *Issues for implementation*
- *Time frame for major actions and activities*

3. Priority Activities and Actions

- *Activities and actions to implement the adaptation and mitigation plan*
- *Key barriers to implementation*
- *How the mitigation and adaptation principles will be implemented*

4. Stakeholder Roles and Responsibilities and Coordination mechanisms

- *Which institutions/agencies/ organizations will do which actions*
- *Linkages, Arrangements/ procedures for coordination and support*

5. Resource Requirements and Resource Mobilization Strategies

- *Human and technical resources*
- *Financing*
- *Resource mobilization and capacity building*

6. Monitoring

- *Key indicators and framework for monitoring*
- *Integration with poverty reduction monitoring*

7. Annexes

- *Resource toolkits (Existing guidance documents and other materials)*
- *Detailed log frame*
- *Glossary of key terms/ Abbreviations*

Appendix 4: National Legal and Regulatory framework relevant to Climate Change Adaptation and Mitigation

Legal Framework	Key articles and provisions related to Climate change adaptation and mitigation
The constitution of the republic of Uganda, 1995	<p>The state shall promote sustainable development and public awareness of the need to manage land, air, water resources in a balanced and sustainable manner for the present and future generation</p> <p>Parliament shall, by law, provide for measures intended to protect and preserve the environment from abuse, pollution, and degradation, to manage the environment for sustainable development and to promote environmental awareness</p>
The land Act Chapter 227, 1998, amended 2009	A person who owns or occupies Land shall manage and utilize the land in accordance with the forests Act, the mining act, the National Environment act, the Water act, the Uganda Wildlife Act and any other law
The National Forestry and Tree Planting Act, 2003	<p>To create an integrated forest sector that will facilitate the achievement of sustainable increases in economic, social and environmental benefits from forests and trees by all the people of Uganda</p> <p>To ensure that forests and trees are conserved and managed in a manner that meets the needs of the present generation without compromising the rights of the future generations by safeguarding forest biological diversity and the environmental benefits that accrue from forests and trees</p> <p>Offers directions to the District Councils for planting and growing of trees</p>
The National Environment Act, Chapter 153, 1995	<p>To assure all people living in the country the fundamental right to an environment adequate for their health and well being</p> <p>To encourage the maximum participation by the people of Uganda in the development of policies, plans and processes for the management of the environment</p> <p>To reclaim lost ecosystems where possible and reverse the degradation of natural resources</p>
The National Environment (Wetlands, Riverbanks and lakeshores Management) Regulations, 2000	<p>Ensure water catchment conservation and flood control</p> <p>Identification of riverbanks at risk from environmental degradation</p> <p>Promoting soil conservation measures along river banks, including bunding, terracing, mulching, tree planting, grassing, zoning and planning and control of livestock</p>
The National Environment (Mountainous and Hilly Areas Management) Regulations, 2000	<p>To facilitate the sustainable utilization and conservation of resources in mountainous and hilly areas by and for the benefit of the people and communities living in the area</p> <p>Promote the integration of wise use of resources in mountainous and hilly areas into the local and national management of natural resources for socio-economic development</p>
The Water Act, Chapter 152, 1997	<p>Promote the rational management and use of the waters of Uganda</p> <p>Allow for orderly development and use of water resources for purposes other than domestic use, such as the watering of stock, irrigation, agriculture, industrial, commercial and mining purposes, energy, navigation, fishing, preservation of flora and fauna and recreation in ways which minimizes harmful effects to the environment</p>
The Local Governments Act, 1997	<p>Aims at giving effect to the decentralization and devolution of functions, powers and services so as to ensure good governance and democratic participation</p> <p>Reiterates the position in the Constitution, provides for the participation of local government in decision-making and management of ecosystems</p>

Appendix 5: Policies related to Climate change adaptation and mitigation in Uganda

Policy	Relevant provisions
The National Environment Management Policy (1994)	<p>Provides guiding principles on the management of the environment in Uganda</p> <p>To enhance the health and quality of life of all people in Uganda and promote long-term, sustainable socio-economic development through sound environmental and natural resource management and use;</p> <p>To integrate environmental concerns in all development policies and planning activities at national, district and local levels, with full participation of the people.</p>
Forestry Policy, 2001	<p>Institutionalises community forestry and addresses the concern of forests on private land</p> <p>Pillars of Uganda's Forest Policy of 2001 include Forestry on government land, Forest on private land, Commercial forest plantations, Forest products processing industries, Collaborative forest management, Farm forestry, Forest biodiversity conservation, Watershed management, Urban forestry, Education, training and research, and Supply of tree seed and planting material</p>
Draft Land Policy, 2007	<p>Articulates on the fact that land is an essential pillar of human existence and national development that needs systematic planning</p> <p>Proposes emphasis on ownership of land and land use for orderly land development and stipulates incentives for sustainable and productive use, as well as fiscal measures to achieve the land management and land development objectives</p>
Food and Nutrition Policy	Recognizes that food should be treated as a national strategic resource and that food and nutrition security is necessary to promote nutrition and normal health
Wildlife Policy, 1995	Promote the long term conservation of the country's wildlife and diversity in a cost effective manner which maximizes the benefits to the people of Uganda
The National Water Policy, 1999	Guides use of water resources, including use of water for agricultural production
Decentralisation Policy, 1997	<p>Provides a basis for the development of the Local Governments Act and administrative mechanisms for devolution of power from the Central Government to Local Governments</p> <p>Encourages local community participation in decision making, achieving good governance and taking political and administrative control over services to the point where they are actually delivered</p>

Appendix 6: Monitoring and Evaluation (M&E) Framework for the integration of climate change into sector plans and budgets

Sector	Performance measurement/ analysis of integration process				Information Management System			Reporting System		Responsibility centre
	Baseline	Performance Target	Performance Indicator		Information required	Source of information	Data collection frequency, collection and analysis methods	Frequency of reporting	Methods of reporting and feedback mechanisms	
Human health										
Agriculture & food security										
Infrastructure & settlements										
Environment / Natural Resources & biodiversity										
Water and Sanitation										
Energy, and oil/gas										
Trade and Industry										
Tourism										
Gender and social development										
Education										
Urban development										
Security and Defence										

Note:

1. **Baseline** = The situation before climate change has been integrated into the sector plans and budgets;
2. **Performance Target** = The level of integration planned for achievement (measurable and attainable) e.g. the level and quantity, pattern and distribution of activities, level of budgeting for climate change adaptation and mitigation etc;
3. **Performance Indicator** = the measurement of the performance level e.g. below or above or within the performance target;
4. **Information required** = the information needed/required during the integration process;
5. **Source of information** = the primary or secondary origin of the required information e.g. from Sector reports, UBOS, community, resource users, agencies, academia and research institutions;
6. **Data collection frequency** = Periodic framework for data collection e.g. quarterly or annual;
7. **Data collection and analysis methods** = Techniques used in data collection and analysis (Quantitative and Qualitative techniques);
8. **Frequency of reporting**= (as in data collection frequency);
9. **Reporting methods** = (as in data collection and analysis methods); and
10. **Responsibility Centre** = MDA responsible for the integration process.

Appendix 7: Impact Evaluation Framework for the integration of climate change into sectors

Sector	Impacts of the integration of climate change into the sector			Relevance of the integration of climate change into the sector			Effectiveness			Sustainability mechanisms for the integration process	Responsibility centre
	Baseline	Short/medium impacts/outcomes	Long term impacts	Policy relevance	Institutional relevance	Efficiency relevance	Effectiveness relevance				
Human health											
Agriculture & food security											
Infrastructure & settlements											
Environment/ Natural Resources & Biodiversity											
Water and Sanitation											
Energy, and oil/gas											
Trade and Industry											
Tourism											
Gender and social development											

Note:

- 1. Impacts** of the integration of climate change into sectors;
 - a) Economic impacts; production, distribution, consumption of goods and services (economic prosperity)
 - b) Social impacts; access to goods and services for social wellbeing and social inclusion in development processes.
 - c) Environmental impacts ; environmental sustainability and resource productivity, and;
 - d) Governance impacts; institutional/organizational/structural or process impacts;

- 2. Impact timeline;**
 - a) Short/medium term; 1-4 years
 - b) Long term; 5+ years

- 3. Relevance of the integration of climate change into sectors;**
 - a) **Policy relevance;** in line with the respective sector and climate change policies;
 - b) **Institutional relevance;** in line with the sector/MDA mandate, vision, mission, goal, objectives and strategies;
 - c) **Efficiency relevance;** in line correspondence to the available resources (human, financial, capital and time)
 - d) **Effectiveness relevance;** in line with the sector/MDA investment/strategic plans and intended results/outcomes

- 4. Sustainability mechanisms;** measures/strategies the sector/MDA has put in place to maintain and sustain the integration process after the current technical interventions by NPA and other partners phase out.